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Guidelines for nutritional care

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Foreword

These guidelines for nutritional care of patients and patient meals has been compiled as a guide for implementing nutritional care and as a quality recommendation for social and health care services. The guidelines for nutritional care have been produced by the National Nutrition Council and the Finnish Institute for Health and Welfare in cooperation with an expert panel on nutritional care.

The latest research data and consensus of experts concerning the current practices and development needs of nutritional care were taken into account when writing these guidelines. National Current Care recommendations and international guidelines published by ESPEN (European Society for Clinical Nutrition and Metabolism) were used in the guidelines for nutritional care in diseases. These reviced guidelines replace the previous recommendation published in 2010.

The structural change in social welfare and health care is an excellent time to publish this recommendation and strengthen nutritional care as part of service development. The transfer of responsibility for organising activities to wellbeing services counties has been taken into consideration in the guidelines. In addition to information on the principles of implementing nutritional care, the publication contains a lot of instructions and evaluation and monitoring tools for developing and implementing nutritional care in the new service system. The guidelines for nutritional care are intended for treating everyone who uses social and health care services. It is important to systematically implement nutritional care throughout the service chain, and for each professional to understand their role in this process.

Good nutrition is a human right. According to Article 25 of the UN Universal Declaration of Human Rights, good nutrition and nutritional care in the event of disease must be equally available in all population groups, regardless of a person's state of health or its underlying factors. Ensuring good nutrition, screening for malnutrition risk and enhanced care also promote ecological, social and economic sustainability in line with the global Agenda 2030 sustainable development goals.

Screening for malnutrition risk should be part of the arrival discussion for every patient coming in for treatment – both in the ward and in outpatient work. The objective of systematic screening is to detect the risk of malnutrition as early as possible and enhance nutritional care for patients who are at risk or already have malnutrition. Malnutrition and changes in nutritional status should also be monitored regularly to assess the effects of care. Malnutrition screening and treatment are cost-effective activities.

Nutrition shortcomings in Finland remain at a high level. The causes of chronic diseases and morbidity include generally unhealthy food, excessive intake of energy, saturated fat, salt and added sugar, as well as low consumption of vegetables and fibre. Excessive energy intake and overweight are key risk factors for many diseases. Wellbeing services counties – together with municipalities and cities – are responsible for enhancing the wellbeing and health of their residents. Enhancing nutritional health, including lifestyle counselling and nutritional care, are part of extensive multi-professional health promotion work.

In terms of requirements and competence, this is part of the professional skills of every person employed in patient and customer work.

In order for this work to be successful, nutrition must be integrated into overall patient care and adequate resources allocated to it. Each wellbeing services county must also ensure that it provides sufficient nutritionist resources in accordance with the recommendation. These people are needed to implement nutrition therapy and as experts to develop the work, in multi-disciplinary working groups, material production and other personnel training. Nutritionist competence is also needed when building service chains and interface services for nutritional health promotion.

This recommendation is based on a health-promoting, socially and environmentally sustainable diet as defined in the national nutrition recommendations. The recommendation specifies the composition of hospital food being served, its nutritional quality and the food process used to produce it. Hospital food serves as an example of health-promoting eating and is the basis for diets needed for nutritional care in diseases. When procuring food services, the aim must be responsible and high-quality food services that realise the patient's rights to receive tasty food that meets the guidelines for nutritional care. It is important to include compliance with this recommendation when implementing patient meals in all service agreements signed with food services providers.

These guidelines were compiled by an expert panel appointed by the National Nutrition Council (16 March 2021–26 January 2023). The expert panel was chaired by Professor Ursula Schwab from the University of Eastern Finland with Nutritionist Ulla Siljamäki-Ojansuu from Ravitsemussuunnittelu USO serving as scriptwriter/secretary. The other members are presented in the list below. The National Nutrition Council would like to thank all members of the group for their valuable expertise and writing work, which has required a large amount of hard work. We would also like to express our gratitude to the members' own organisations and the many other local social and health care professionals who provided their expertise and multi-disciplinary perspective as well as original material in the form of instructions and forms for the group's use and for inclusion in these guidelines. We would like to thank the board of FISPEN (The Finnish Society for Clinical Nutrition and Metabolism) for checking the content of translations from the international Vienna Declaration and for its cooperation with ESPEN.

In addition to the expert panel, we would like to thank the following organisations and people for their participation in compiling the text, taking photographs and producing tools. Food services experts Pirkanmaan Voimia Ltd, Servica Ltd, Saimaan Tukipalvelut Ltd and Kymijoen Ravintopalvelut Ltd, Occupational therapy personnel, Katariina Heinonen, Taina Kannosto-Blomqvist and Harri Niinikoski, Turku University Hospital, Heli Kuusipalo THL, Liisa Suominen and Päivi Mäntylä, University of Eastern Finland, Helena Orell and Jetta Tuokkola HUS, Niina Taimisto Tampere University Hospital, Anne Ruotsalainen private trader, Helena Törölä private practitioner and Tarja Kettunen University of Jyväskylä. We would also like to thank Teresa Ollila from HUS for checking the content of the Swedish language version.

The National Nutrition Council implemented two surveys in connection with compiling the guidelines. The first survey in April-May 2021 assessed recognition and user experiences related to the previous recommendation of nutritional care (2010) and needs for renewed content. A total of 150 social, health care and food services professionals responded to that survey. The working draft of the manuscript was prepared on the basis of the previous recommendation and the feedback received.

The National Nutrition Council organised an open targeted round of commenting on the draft manuscript in March-April 2022. Approximately 100 comments were received: 82% of these came from individual professionals and 18% from communities, which included associations and various organisations. The feedback received from different organisations and professional groups provided valuable material that was used to edit and supplement the sections of the guidelines. The commenting parties sent the expert panel a lot of article references and additional material (such as charts, tables, forms). The National Nutrition Council would like to thank all contributors for their comments to improve and clarify the content of the guidelines.

A national shortcoming is the fact that there is no monitoring data regarding the impacts and effectiveness of nutritional care. In terms of local and national knowledge-based management of social welfare and health care services, it is important to comprehensively implement the instructions for recording malnutrition risk screening results, nutritional status, diagnoses, and nutritional care and counselling actions provided in these guidelines. National monitoring data is also needed on the practical implementation of hospital meals and the nutritional quality of the food served.

The National Nutrition Council would like to thank the Ministry of Social Affairs and Health for the separate funding received to compile the guidelines, which made it possible to hire a part-time scriptwriter/secretary and translate the guidelines into Swedish and English, and for the separate appropriation allocated to implement the nutritional care guidelines between 7 March 2023–15 November 2024.

Comprehensive implementation of these guidelines in all wellbeing services counties will benefit the entire service system with regard to sustainability and cost-effectiveness and, above all, the health and well-being, recovery from illness and rehabilitation of all patients.

The National Nutrition Council approved this publication as the national guidelines for nutritional care in February 2023.

Helsinki, 13 February 2023

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For the reader

Good nutrition is important to all of us throughout our lives, from the very beginning until old age. For many people, mealtimes are also highlights of the day in hospitals. Appealing meals, healthy food and good nutritional status support functional capacity and health, well-being and quality of life in a wide-ranging manner. Good nutrition supports physical, mental and social well-being. Nutrition is particularly important when health deteriorates and causes an increased need for treatment and care. Ensuring good nutrition plays a key role in preventing many diseases and the treating all diseases. Everyone has the right to good food.

Preparation of these guidelines for nutritional care began in early 2021 with support from the Ministry of Social Affairs and Health. The previous recommendation published in 2010 "Nutritional care – A recommendation for hospitals, health centres, sheltered housing, nursing homes and rehabilitation centres" no longer met the needs of the reformed service system and its content required renewal and expansion.

For example, the COVID-19 pandemic highlighted the acute need for enhanced nutritional care in inpatient wards and intensive care. The increase in research data related to nutritional care, new treatment practices, updates of Finnish and international care recommendations and the renewal of food services systems also required new guidelines for nutritional care. In the future, we will increasingly move towards using effectiveness principles to guide social and health care services. As a result, these new guidelines also discuss issues related to the impact and cost-effectiveness of nutritional care. OECD calculations show that about 18% of mortality in Finland is related to nutritional risks. In hospitals, malnutrition has a significant impact in terms of costs – it increases morbidity, infection, complications and the length of hospitalisation. Nutritional care helps us support health and also reduce health care costs.

International human rights treaties emphasise the right to health and adequate nutrition. International clinical nutrition expert organisations consider the right to evidence-based nutritional care to also be a human right. Key elements of this Vienna Declaration that "Nutritional care is a human right" include seeing nutritional care as part of health policy, respect for ethical principles and the supporting operating culture, and systematic screening, diagnosis and assessment of malnutrition risk. These are also important principles here in Finland. For the first time, these guidelines for nutritional care now address patient rights and ethical questions as well as the related operating practices. The process of implementing the guidelines for nutritional care is integrated with implementation of the Vienna Declaration in Finland. All patients must have the right to evidence-based nutritional care.

Competent personnel and a functional division of work are essential to successful nutritional care. Ensuring a patient's nutrition involves multi-professional and seamless cooperation in which each person knows their role and responsibility in the nutritional care process and also recognises the tasks of other professionals. This requires clear treatment pathways and multi-professional care teams consisting of professionals from different areas, such as doctors, nurses, food services representatives, nutritionists, occupational therapists, social workers and other specialists. A functional division of work and ensuring professional competence improves resource use, well-being at work, inclusion and motivation. Successful nutritional care always requires cooperation between the parties responsible for care and food services as well as commitment from decision-makers to develop nutritional care as part of the overall patient treatment. The targets, division of work, resources and methods of nutritional care must be agreed locally so that slim resources are used in the best possible way.

Building a functional monitoring system and multi-professional development work ensure high-quality operations that are guided by information about their effectiveness. The Act on Organising Healthcare and Social Welfare Services emphasises the importance of self-monitoring in addition to official supervision. Wellbeing services counties and service providers must prepare a self-monitoring programme and plans as well as patient safety plans. The quality criteria and nutrition-related indicators recorded in these guidelines for nutritional care can be used to assess the implementation of patient meals and nutritional care, both in self-monitoring and in official supervision.

I am delighted that the National Nutrition Council took on the task of preparing the guidelines and appointed a highly skilled and efficient panel for this purpose. We can be proud of the quality work done by them. The outcome is a comprehensive information package that is suitable for decision-makers and professionals to use as a tool, learning material and national quality recommendation. I hope that all parties who are responsible for and implement nutritional care will adopt these guidelines and actively use them in their own work.

Let's work together to promote good nutritional care.

Krista Kiuru
Minister of Family Affairs and Social Services

How to use these guidelines

The guidelines for nutritional care are intended for all professionals who participate in a patient's nutritional care or the implementation of food services in public and private social and health care services. It is also important for the decision-makers responsible for the services and the people who plan, steer and supervise them to be aware of the content of the guidelines and be able to utilise them in their work.

The guidelines for nutritional care consist of 11 content sections and appendices, including the forms, tools and fact sheets needed in practical work, for example, in relation to the diets offered by food services.

Footers that are colour-coded by section, content highlights, charts and info boxes make it easier to find information. The sources are compiled by section and in part also according to their subsections. The majority of the sources are online publications that open by clicking the links.

See the list of sources at the end of the publication.

For nursing staff

The guidelines for nutritional care include all key nursing-related recommendations, instructions, forms and assessment tools to guide and help provide patients with nutritional care and counselling in wards and in outpatient work. The guidelines also descripe the professional responsibilities of nursing staff by professional group. Section 3 contains concrete instructions for assessing, monitoring and recording the risk of malnutrition and nutritional status as well as preparing and implementing a nutritional care plan. Sections 6 and 7 discuss a texture-modified and enriched diets and the use of oral nutritional supplements. Section 8 summarises nutritional care in different diseases, the diets that are ordered from the food services and practical implementation of meals from the nursing perspective. Specialised information about nutritional care in different age groups is presented in Section 9.

For physicians

The physician has overall responsibility for the patient's medical treatment, and therefore also for the patient's nutrition and nutritional care. The tasks of the physician are described in Section 3. The physician performs an overall assessment of the patient's nutritional status and diagnoses malnutrition (assessment tools in appendices 1–8 and 28–29). This assessment also includes, for example, assessing the need for protein and fluids as well as the possible need for enteral nutrition or intravenous nutrition. Among other things, the physician provides instructions for enhanced nutritional care and refers the patient to nutrition counselling or nutrition therapy if necessary. Nutritional care in various diseases is described in Section 8. The list of diets offered by food services in Appendix 18 also facilitates the work of physicians.

Section 9 deals with issues related to nutritional care for children and older people, such as the nutritional needs of a growing child or the development of sarcopenia and gerastenia in older adults. Information on national monitoring of the population's health and nutrition and the collection of register data related to malnutrition risk and nutritional care is provided in Section 11.

For food services staff

Section 5 of the guidelines for nutritional care describes the organisation of patient meals. It includes recommendations on energy and nutrient content and minimum nutritional quality requirements for each meal component of the basic food being served and its different forms. In addition to the food process, this section describes the quality criteria and hygiene requirements that apply to food services. Sections 6 and 7 include instructions on implementing texture-modified and enriched diets and the use of oral nutritional supplements. The implementation of diets needed to treat diseases is described in conjunction with the diseases (Section 8).

A comprehensive summary of the diets offered is presented in appendices 15 and 18. It is also important for food services personnel to be familiar with implementing patient meals in the ward (Section 4). It is also a good idea to review the information on cooperation and multi-professional implementation of nutritional care in Section 3. Sections 10 and 11 deal with the procurement of food services and food items as well as the monitoring and supervision of operations.

For decision-makers in the social and health care services field and people who procure food services

It is important for every decision-maker and employee responsible for procuring and organising social and health care services and the related food services to be familiar with the objectives, significance, multi-professional implementation and cost-effectiveness of nutritional care presented in Sections 1–3 of the guidelines. The procurement process and criteria for food services are discussed in Section 10. This guideline should be used as the basis for implementing nutritional care and food services when a service description is being prepared for tendering purposes or for a service agreement. Section 11 deals with national monitoring data on the health and nutrition of the population, which can be utilised regionally, for example, in work resourcing. The same section also describes structured patient records in nutritional care, STESO (Health Promotion Hospitals and Organisations, Finland) standards and nutritional care indicators for knowledge-based management and development of work.

Vocabulary and abbreviations

Adverse event
Incidents occurring in different stages of health and medical care and the course of work that could have caused harm (so-called near misses) or did cause harm to the patient. An adverse event can be physical, emotional, psychological, social or economic. The harm may be perceived by the patient and/or diagnosed by professionals.

Adverse reaction
An unintentional and harmful reaction caused by disease prevention, diagnosis, or treatment that leads to objective medical harm to the patient, prolongs the duration of treatment, or increases treatment costs.

Bioimpedance
A method of estimating body composition that is based on measuring the voltage caused by a weak electric current in different parts of the body. The results are based on the algorithms used by the device supplier, which take into account the measurement results obtained from electrical conductivity and, for example, the subject's age and gender.

Complication
An additional disease, secondary disease, side effect, or a new disorder related to a previous disease status or treatment.

Contamination (and cross-contamination)
In terms of food hygiene, contamination refers to the presence of unwanted substances in a product, in which case the consumption of that product may involve a health hazard. This can happen in different situations, such as when handling food with dirty hands or equipment. Cross-contamination refers to the transfer of microbes or non-food substances from one food to another directly or indirectly through, for example, the hands or equipment (for example, allergens and gluten).

Cost-effectiveness
Costs are resources used when performing an activity and which can be economically measured. Effectiveness is the change achieved in a situation using the selected operating method in comparison to a situation in which the activity would not have been implemented at all. Cost-effectiveness is the ratio between the change in costs and the change in impacts of alternative operating methods.

Diet
(see also special diet)
Food and beverages used by an individual as a whole.

Dumping syndrome
Develops especially after a gastrectomy. The syndrome is caused by the rapid, unregulated passage of food from the stomach to the small intestine. The symptoms occur quickly after eating, for example, in 15–30 minutes or they can be delayed and only appear after a few hours. The symptoms include rapid heart rate, sweating, flushing, dizziness, nausea, vomiting, convulsive pain, diarrhoea or belching.

Eating behaviour
An entity related to eating and nutrient intake that is influenced by environmental, psychological, physiological and genetic factors.

Eating habits
These are habits related to selecting, consuming and utilising certain food items that are adopted on the basis of social and cultural norms.

Emotional eating
Eating is guided by many factors, such as physiological hunger, eating habits, the food environment and emotions. Emotional eating involves eating that is primarily guided by the emotions.

Empowerment
WHO defines empowerment as “a process through which people gain greater control over decisions and actions affecting their health” and should be seen as both an individual and a community process. A process in which patients understand their role, are given the knowledge and skills by their health-care provider to perform a task in an environment that recognizes community and cultural differences and encourages patient participation.

Energy density
The amount of energy in an energy nutrient or food per unit of mass (kilocalorie kcal/g or kilojoule kJ/g). Fat has the highest energy density of all energy nutrients. Water and fibre reduce the energy density of a food item.

Food behaviour
Human activities related to the procurement, production, distribution, selection and consumption of food, which are guided by physiological, psychological, cultural and socio-economic factors.

Food diary

This involves using a food diary to record meal times and all food and beverages consumed for a few weekdays and weekend days. The quality and quantity are also recorded. Eating locations, feelings of hunger and fullness and other emotions related to eating can also be recorded. People with diabetes can record their insulin doses and blood sugar measurements. The entries in the food diary are checked with the patient and the energy and nutrient intake calculated if necessary. The information is used in nutrition counselling.

Food frequency questionnaire

A questionnaire about the consumption of food items and dishes. Questionnaires are also available for assessing diet details, such as fibre and salt intake or the quality of fats.

Food services

A food service unit is responsible for planning and service functions related to food production. This includes menus, diets, food procurement, quality assurance, development, human resources and cooperation with clients.

Food supplement

Food supplements are food items that differ from ordinary foods in either their appearance or use. They can be pills, capsules or extracts. Food supplements are used because of a specific nutritional characteristic, for example, as condensed sources of vitamins, minerals, fibre or fatty acids to supplement the diet. Food supplements can also have a physiological effect on, for instance, organic functions such as digestion. They are not intended to replace a balanced diet and do not provide significant amounts of energy.

Healthy Diet Index

A tool for assessing diet quality that was developed in the Dehko D2, Vesote, StopDia and Virtual Hospital projects. The score provided by the Healthy Diet Index describes the quality of the diet in relation to nutrition recommendations. The scale of the index is from 0 to 100. In addition to an overall score, the Healthy Diet Index also gives a score to different domains of the diet, including meal pattern, grains, berries and vegetables, fats, fish and meat, dairy products, and energy-rich drinks and snacks.

Malnutrition

This means a shortage or excess of one or more nutrients in food. Malnutrition is a superconcept that covers insufficient and excessive nutrient intake, as well as imbalanced nutrient intake and the deficiencies of certain nutrients. Unoptimal nutrition can lead to malnutrition (see p. 27) or obesity.

MCT oil (**M**edium **C**hain **T**riglycerides)

A fat preparation consisting only of medium-chain fatty acids (C8, C10), which is used to treat fat absorption disorders.

Nasodeodenal tube
A tube that passes through the nose and ends in the duodenum (first part of the small intestine).

Nasogastric tube
A tube that passes through the nose and ends in the stomach.

Nasojejunal tube
A tube that passes through the nose and ends in the jejunum (second part of the small intestine).

Nutrient density
The amount of nutrients (µg, mg or g) per unit of energy (for example, mg/1000 kcal or mg/MJ). The more nutrients a food item contains per unit of energy, the higher its nutrient density. Nutrient density decreases as the share of fat, sugar and alcohol increases in the energy intake. The smaller the need for energy, the more important high nutrient density becomes in order to ensure sufficient nutrient intake. Nutrient density makes it possible to compare the nutritional quality of different diets.

Nutrition
Food and the nutrients contained in it that are used by the body for growth, metabolism and tissue regeneration. Nutrition includes eating, digestion, nutrient absorption and transport, metabolism and elimination. Nutrition also includes the social, economic, cultural and psychological dimensions of food and eating.

Nutritional anamnesis
Determining a patient's diet by means of an interview, food accounting or a food frequency questionnaire. The anamnesis examines ordinary eating habits on weekdays and weekends. A nutritional anamnesis can be qualitative or quantitative for one/several nutrition factors. The accuracy of the anamnesis is selected based on its target. Food models or portion pictures can be used when assessing food quantities. The patient's life situation and eating habits determined in the nutritional anamnesis provide the basis for planning nutritional care and nutrition counselling.

Nutritional rehabilitation
Ensuring sufficient nutrition according to the recovering patient's needs and supporting implementation of weight control or the required diet throughout rehabilitation as part of increasing or maintaining functional capacity. It includes all parts of the nutritional care process and appropriate nutrition counselling or psychoeducation.

Nutritionist

A qualification awarded after completion of a master's degree in nutrition science, including 60 study credits of studies in nutrition therapy: a master's degree in health sciences, food sciences, agriculture and forestry, or health care. The education includes studies in nutrition and medicine, natural, behavioural and social sciences, as well as food science and food preparation. The National Supervisory Authority for Welfare and Health (Valvira) grants the right to practise in the health care profession as a licensed nutritionist.

Nutritional health promotion

Nutritional health means using various nutritional methods to promote well-being and health in different age and population groups. The aim when promoting nutritional health is to improve children's healthy growth and development, improve the working and functional capacity of working-age people, support functional capacity and coping at home among older adults, increase health and well-being and reduce health inequalities between population groups.

Oral nutritional supplement

According to food legislation, a product that is intended for use as the sole source of nutrition or as a supplement in dietary treatment. They are needed when it is impossible to meet the need for nutrients with conventional food items. These include special preparations for babies with milk allergies, enteral nutrition products, and nutritional supplements.

PEG, PEG/J

see percutaneous endoscopic gastrostoma.

Percutaneous endoscopic gastrostoma

A nutrition delivery route through the abdominal wall to the stomach (PEG) or to the small intestine (PEG/J). It is intended for long-term enteral nutrition that lasts for more than 3–4 weeks.

Quality Adjusted Life Year (QALY)

The measurement unit for quality adjusted life expectancy. The health impacts of the treatments being compared are typically measured in quality-adjusted life years (QALY). QALY combines health-related quality of life and life expectancy. One QALY represents one year of perfect health. QALYs are calculated by estimating the patient's years of life after a specific treatment or intervention and weighting each year with quality of life points (0–1).

Special diet

(see also diet)

A diet intended for treating a disease, the implementation of which is based on a diagnosed disease or clinical assessment. In a special diet, the use of one or more foods is restricted, increased or the form it is served in is changed for health reasons. The expression "diet used to treat a disease" is recommended over the "special diet" term.

ESPEN FACT-SHEET

NUTRITIONAL CARE IS HUMAN RIGHT

The international Declaration to the Human Right to Nutritional Care "Vienna Declaration"

*Endosed by the four major international Clinical Nutrition Societies ASPEN, ESPEN, FELANPE and PENSA in conjunction with representatives of patients' associations (EPF), dietitians (EFAD), and a global network of more than 70 national Societies.**

RIGHT TO FOOD

the right to adequate food and the right to freedom from hunger and malnutrition

RIGHT TO NUTRITIONAL CARE

Screening for malnutrition
Diagnosis and assessment of DRM
Food and evidence based medical nutrition therapy (including ANH)
DRM = disease-related malnutrition
ANH = artificial nutrition and hydration

RIGHT TO HEALTH

the right to the enjoyment of the highest attainable standard of physical and mental health

AIMS

1. **Promote the recognition** of the **human right to nutritional care** for all people with or at risk for disease related malnutrition, and the respect for **human dignity** in accordance with international laws on human rights and bioethics.
2. **Provide a frame of reference** whose principles serve as the basis to the future **development of action plans** from **Clinical and Scientific Societies** and any stakeholders in **clinical nutrition**.
3. **Define core values, goals and principles** to **enhance the quality of care in clinical nutrition** and to **raise awareness** of disease-related malnutrition and of the **lack of nutritional care access**.

PRINCIPLES

1. **Fulfillment of the right to nutritional care**
   Public health policy must make the fulfillment of the right to nutritional care a fundamental axis in the fight against disease-related malnutrition.
2. **Clinical Nutrition Education & Research**
   Clinical nutrition education and research are a fundamental axis of the respect and the fulfillment of the right to nutritional care.
3. **Ethical principles and values**
   Ethical principles and values in clinical nutrition including justice and equity in nutritional care access are basis for the right to nutritional care.
4. **Institutional culture**
   Nutritional care requires an institutional culture that follows ethical principles and values and an interdisciplinary approach.
5. **Patient empowerment**
   Patient empowerment is a key enabler to necessary action to optimize nutritional care.

The European Society for Clinical Nutrition and Metabolism (ESPEN) www.espen.org
Cardenas D, et al. Clin Nutr. 2022 Jul;41(7):1613-1618. doi:10.1016/j.clnu.2022.03.021.
Cardenas D, et al. Clin Nutr. 2021 Jun;40(6):4029-4036. doi:10.1016/j.clnu.2021.02.039.

* ASPEN – American Society for Parenteral and Enteral Nutrition
ESPEN – The European Society for Clinical Nutrition and Metabolism
FELANPE – Latin American Federation of Nutritional Therapy, Clinical Nutrition and Metabolism
PENSA – The Parenteral and Enteral Nutrition Society of Asia
EPF – The European Patients' Forum
EFAD – The European Federation of the Associations of Dietitians

1 AIMS OF THE GUIDELINES AND TARGET GROUP

These guidelines for nutritional care of patients and patient meals has been compiled as a guide for implementing nutritional care and as a quality recommendation for social and health care services. The guidelines for nutritional care have been produced by the National Nutrition Council and the Finnish Institute for Health and Welfare in cooperation with a wide-ranging expert working group on nutritional care. These revised quidelines replace the previous recommendation published in 2010. It takes into account the health and social services reform and the activities of the wellbeing services counties. The publication contains information and instructions as well as assessment and monitoring tools related to developing and implementing nutritional care in the new service system.

The guidelines are based on international recommendations, research data in the fields of clinical nutrition and medicine, and good practices, such as the European ESPEN[1] nutritional care guidelines and national Current Care Guidelines. The guidelines on the basic hospital diet is based on the Finnish nutrition recommendations for adults (Terveyttä ruoasta) and "Vitality in later years – food recommendation for older adults". The main objective of the guidelines for nutritional care is to be a part of all primary and highly specialised services in a more comprehensive, high-quality and client-oriented

1 ESPEN (European Society for Clinical Nutrition and Metabolism) guideline on hospital nutrition, 2021. https://doi.org/10.1016/j.clnu.2021.09.039

manner – from preventing to treating diseases while simultaneously promoting people's health and well-being throughout life.

Nutritional care and the related counselling are part of health promotion and essential in terms of supporting recovery from diseases and rehabilitation. It is a key form of treatment for many diseases and the only treatment in some cases. Nutritional care that is optimally implemented reduces the need for other treatment actions, promotes the effectiveness and impact of other treatment, and may reduce the need for pharmacotherapy and shorten the length of highly specialised care.

The most important and effective goal of nutritional care is to ensure sufficient nutrition for the patient. It is important to identify the patient's risk of malnutrition in a timely manner, prevent the development of malnutrition, and effectively manage any malnutrition that has already occurred. The consequences of malnutrition increase treatment costs, interfere with treatment implementation and reduce the quality of life. Nutritional care is cost-effective. It also improves the patient's quality of life: tasty food, satisfying basic needs, and enjoyable meals also bring pleasure to a sick person.

Implementation of nutritional care requires multi-professional and multidisciplinary cooperation all the way from basic care to specialised medical care and from clinical and nursing processes to food services and institutional maintenance. The aim of these guidelines for nutritional care is to describe the nutritional care process as a seamless entity in which food services and institutional maintenance are linked to the care process. The common goal of these processes is to safeguard good nutrition for the patient in the continuum of illness, treatment, recovery and rehabilitation stretching from one care site to another and to the home.

These guidelines are intended for everyone who is responsible for, guides, plans and participates in the implementation of nutritional care and food services in public and private social and health care services. Ensuring that all professional personnel and the people who make decisions about services are familiar with the guidelines is a prerequisite for high-quality implementation of nutritional care. The guidelines serve as a quality recommendation for nutritional care, and provides the basis for preparing more detailed organisation-specific instructions for nutritional care and service descriptions related to food services. Compliance with the guidelines and the quality requirements recorded in it can be a requirement when procuring care services as well as food services and food items. The guidelines for nutritional care is also suitable as a textbook and learning material for students in universities and the universities of applied sciences. The text refers to all clients who receive nutritional care as patients.

The guidelines are intended for extensive use by all social and health care organisations, such as hospitals, care and nursing units as well as rehabilitation institutions and their food services providers and producers. The Vitality in later years – food recommendation for older adults is used when organising care, nursing and residential services and the related food services for older people. In addition, these guidelines for nutritional care are used in services for older people when planning diets related to treating diseases in both institutional and outpatient services.

The guidelines can also be used as a tool for public guidance, monitoring, assessment and supervision of nutritional care (see Regional and national monitoring and supervision of nutritional care p. 278).

The key objectives of the guidelines for nutritional care are

- to make nutritional care a systematic part of overall patient care
- for the patient to receive health-promoting, tasty food that is appropriate for their illness or other unique situation
- to ensure the best possible nutritional status for the patient
- to make malnutrition screening part of every patient's arrival discussion, intervene in malnutrition in good time and effectively treat malnutrition
- for the patient to receive nutrition counselling that is based on research evidence and good treatment practices as required by their situation.

2

THE SIGNIFICANCE OF NUTRITION IN PREVENTING AND TREATING DISEASES AND RECOVERING FROM THEM

- Good and balanced nutrition – combined with regular exercise and adequate rest and sleep – promotes health, functional capacity and quality of life.
- A diet that complies with the nutrition recommendations and is based on research evidence can reduce the risk of many diseases.
- Preventing and treating malnutrition plays a key role in patient care and rehabilitation. An overweight patient can also be undernourished.
- In children, good nutrition promotes motor and neurocognitive development, learning and growth. The effects of malnutrition may be permanent.

Nutritional care is a key element in the treatment of many diseases. The foundation for good nutrition is laid in childhood and youth. Eating and nutrition are linked to health and social well-being at all ages. A health-promoting diet is crucial to the prevention and treatment of chronic diseases such as obesity, type 2 diabetes, and cardiovascular diseases as well as some cancers. Nutritional care is the only form of treatment for some diseases, such as coeliac disease and food allergies.

The body strives to maintain a stable weight throughout life. Unfavourable eating habits, lack of physical activity and metabolic changes caused by diseases promote excessive energy intake and increase the possibility of weight gain. The importance of weight management is emphasised among people of working age. Obesity significantly increases the risk of many diseases and syndromes and leads to a poorer prognosis in many cases. A weight loss of just 5–10% and minor, permanent dietary changes have a positive effect on the health of overweight and obese people, for example, by reducing the risk of developing type 2 diabetes and fatty liver disease. Ageing increases the risk of unintentional weight loss and loss of muscle mass (see Older adults p. 268).

Nutritional care is based on a health-promoting diet that complies with nutrition recommendations, takes into account the quality of dietary fat, sufficiently diverse protein sources, the quality of cereal products, sufficient use of vegetables, berries and fruit, a moderate amount of salt, and sufficient fluid intake. A diet based on the recommendation also serves as a model for a health-promoting diet. If necessary, a basic health-promoting diet can be modified for clinical reasons, such as renal failure and congenital metabolic diseases. The digestive tract should be utilised whenever possible, as nutrition via the digestive tract maintains the microvilli structure of the small intestine, liver function and defence mechanisms that are essential for nutrient absorption. Good nutritional status facilitates recovery from surgery and prevents complications.

Nutrition-related disorders and conditions are presented in Figure 1. Nutritional care focuses on the prevention, identification and treatment of these disorders. As is the case with malnutrition and obesity, irregularities in the intake of protective nutrients (proteins, vitamins and minerals) may lead to the development or worsening of a disease. Irregularities in protective nutrient intake can also be caused by a disease or its treatment. Sufficient daily intake of all essential nutrients must be ensured for each patient.

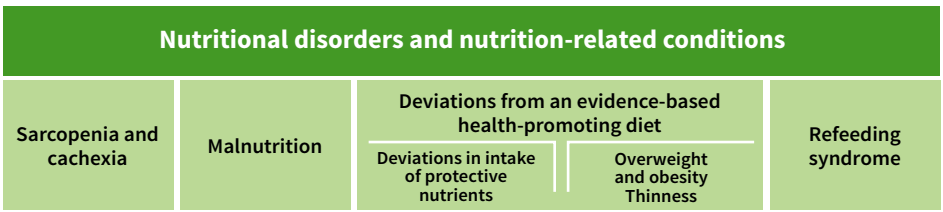

Figure 1. Nutritional disorders.
Source: Adapted from Cederholm T et al. Clin Nutr 2017; 36:49–64.

In addition to energy and protective nutrients, it is important to focus attention on sufficient fibre intake and the quality of diet fat. The recommended quality of dietary fat has a favourable effect on serum cholesterol and triglyceride levels as well as glucose metabolism, and it also helps control low-grade inflammation. It has also been proven

to have a connection with the condition of the skeletal system. Dietary fat quality that complies with evidence-based nutritional recommendations is also an important element in a diet that supports the treatment of elevated blood pressure and prevention of memory disorders. The recommended quality of dietary fat seems to be linked to a lower risk of some cancer types.

Many diseases and their treatments have an adverse effect on the body's inflammatory responses (see Figure 2, p. 28), thus making it important to take the recommended quality of fat into account in the patient's diet. The recommendation concerning quality of fat is very important for acute patients when there is extreme disturbance in the body's metabolism.

Nutritional care refers to nutrition that promotes health and well-being and the use of nutrition to treat diseases. Adequate nutrient intake is ensured through a suitable diet and, if necessary, the use of oral nutritional supplements. Patient-oriented nutritional care includes familiarisation with patient or health records, determining eating habits and eating behaviour, assessing nutritional status, setting goals together with the patient when possible, nutrition counselling and monitoring, and assessing their effectiveness and quality.

Malnutrition risk refers to the estimated risk of developing malnutrition based on nutrient intake, weight change, BMI severity of illness and age.

Nutritional status refers to the physiological status resulting from the relationship between nutritional intake and requirements and the body's ability to break down and utilise nutrients.

Malnutrition refers to measurable adverse changes in body composition (e.g. weight, muscle mass), function (e.g. hand grip strength) or treatment outcome (e.g. wound healing) caused by inadequate nutrition (insufficient energy and/or nutrient intake) in relation to an acute or chronic illness or condition. Malnutrition can develop regardless of body mass index. In nutritional care, this is a more suitable concept than undernutrition.

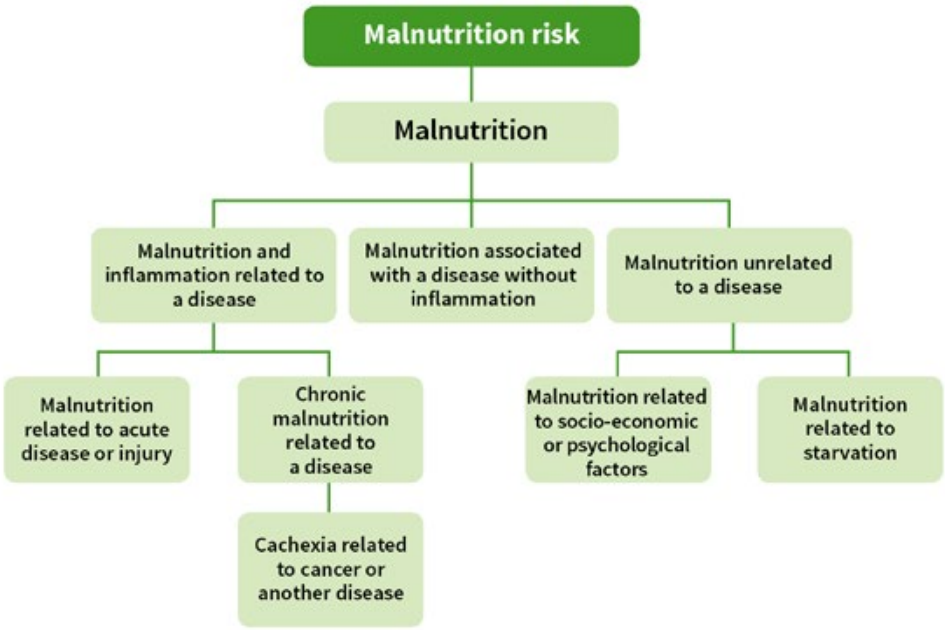

Figure 2. Classification of malnutrition.
Source: Adapted from Cederholm T et al. Clin Nutr 2017; 36:49–64.

SOURCES p. 343

Malnutrition and its effects

- Malnutrition reduces a patient's quality of life and slows recovery from disease, prolongs treatment time, and increases the risk of complications and mortality.
- Malnutrition increases the cost of treatment (see page 34) and the workload of health care personnel.

Children and older adults are particularly vulnerable to malnutrition. Malnutrition in children can lead to permanent impairment of motor and neurocognitive development and slow growth. Regardless of age, illness increases the risk of malnutrition. Since correcting malnutrition is more difficult than maintaining good nutritional status, it is important to recognise the risk of malnutrition and prevent it from happening. The factors that predispose a person to malnutrition are summarised in Table 1.

Table 1. Factors that predispose a person to malnutrition[2]

1. Decreased amount of food

Reduced appetite
- Changes caused by chronic or acute inflammation resulting from disease
- Pain
- Nausea, vomiting, constipation
- Aversions to food
- Depression, restlessness, low mood, stress, loneliness
- Substance dependency

Reduced ability to eat
- Reduced level of consciousness
- Confusion
- Anxiety
- Weakness or pain in the arms or hands
- Motor disorders
- Chewing and swallowing problems
- Dryness or pain in the mouth
- Deterioration in oral and dental health Narrowing or obstructions in the upper digestive tract

Inadequate food availability and insufficient care
- Food quality that does not meet needs
- Difficulties in buying or making food
- Cost of food, dietary supplements and clinical nutritional preparations

2. Decrease in utilisation or absorption of nutrition

Diseases or surgical procedures affecting the digestive tract

3. Changes in nutrition needs

Increased or changed metabolic needs due to age, illness, abnormal metabolism, chronic or acute inflammation, surgical or other treatment.

4. Loss of nutrition in the abdominal and intestinal areas

Vomiting, diarrhoea, fistula, leakage through drains or stoma
- Other losses
- Dialysis treatment
- Discharge from wounds and other tissue damage

A decline in nutritional status, also in overweight and obese people, affects health through many different mechanisms. Malnutrition weakens the patient's recovery and affects the patient's need for care and treatment costs (Table 2 p. 30). Obesity in itself also weakens the patient's recovery. Obesity increases the incidence of surgical wound infections, as obesity slows down wound healing due to impaired blood circulation in the wound area, swelling and changes in cell-mediated immunity. Sarcopenic obesity, which is associated with deficient protein status in the body, slows wound healing and affects the patient's overall prognosis.

2 Adapted from NICE (2017) https://www.nice.org.uk/Guidance/CG32 and the Socialstyrelsen (2020) recommendations.

Table 2. Effects of malnutrition and the related obesity

	Mal-nutrition	Obesity
Immune response weakens	X	X
Muscle mass and strength decrease	X	X
Risk of falling and related injuries increases	X	
Strength of respiratory muscles decreases	X	
Cardiac pumping efficiency weakens	X	
Risk of arrhythmia increases	X	X
Risk of infection increases	X	X
Wound healing slows	X	X
Risk of surgical complications increases	X	X
Decreased tolerance of treatments, e.g. cancer treatments	X	
Intestinal mucous membrane atrophies, nutrient absorption weakens	X	
Amount and function of gut-associated lymphoid tissue (GALT) decreases	X	
Risk of anaemia increases	X	
Glomerular filtration weakens	X	
Effect of medicines changes	X	X
Risk of pressure ulcers increases	X	X
Appetite decreases	X	
Fatigue and weakness	X	
Functional capacity and self-initiative decrease	X	X
Mood becomes low	X	X
Quality of life decreases	X	X
Periods of hospitalisation lengthen	X	X
Likelihood of a return to hospital increases	X	
Mortality increases	X	X
Patient's need for care increases	X	X
Staff workload increases	X	X
Costs of treatment increase	X	X

▶ SOURCES p. 343

Patient rights and ethical questions related to nutritional care

- Patients have the right to receive the nutritional care required by their state of health, with respect for their convictions and taking into account their individual needs and cultures as far as possible.
- Ethical problems related to nutritional care can be alleviated by means of advance planning, open and respectful interaction, advance decisions on care, and agreeing on common practices.
- The initiation, changes and termination of nutritional care should always be discussed with the patient, close relatives or other key persons participating in the patient's care.
- The decision to implement nutritional care is based on researched information, proven care practices and a clinical assessment in cooperation with the patient, close relatives or guardians of a minor.
- Nutritional care may not cause any harm to the patient or prolong suffering.
- The patient's advance decision is respected, and they have the right to self-determination regarding the choice to stop eating, drinking and clinical nutrition if they are capable of making these decisions and understanding the consequences.
- The start and continuation of enteral nutrition and intravenous nutrition must be carefully assessed during the last few weeks and days of life.
- Enteral nutrition and intravenous nutrition may be discontinued in babies and children under school age if this causes unreasonable harm and suffering and the decision is made in agreement with the parents/guardians.

Legislation secures the right to good health care and medical care in Finland. Care has to be arranged so that patients' human dignity is not violated and their conviction is respected. The patient's mother tongue, their individual needs and culture have to be taken into account as far as possible in their care and other treatment. Treatment should be implemented in mutual agreement with the patient. The patient also has the right to receive information on their state of health, the importance of the treatment, the different treatment options and their effect, and other matters related to the treatment. Health care professionals must record in patient documents the information necessary for arranging, planning, providing and monitoring care and treatment for a patient. (Act on the status and rights of patients 785/1992 in Finnish).

Every person who is permanently resident in Finland is without discrimination entitled to health and medical care required by their state of health within the resources available to health care at the time in question. Health services must be provided in such a way that people are not discriminated against on the basis of, for example, age, health status, cultural background or disability. Care decisions may only be influenced by medical reasons. The equality provision of the Constitution of Finland requires that a person receives adequate health services regardless of the municipality in which they

live. These principles also apply to nutritional care. International human rights treaties emphasise the right to health and adequate nutrition.

In the Vienna Declaration, clinical nutrition expert organisations (incl. European, American and Finnish clinical nutrition organisations[3]) state that this also includes the right to nutritional care. The declaration and supporting background documents highlight, among other things, ethical principles and the institutional culture and clinical practices that support them, the importance of nutritional care as part of health policy, respect for human rights, a patient-oriented approach and patient empowerment, evidence-based treatment and the importance of education and research (see Figure p. 21).

All people have the right to evidence-based nutritional care, which covers screening, diagnoses, assessment of nutritional status and the necessary nutritional care for the patient. Everyone has the right to good and adequate nutrition in all life situations, also during illness and hospital care. The patient has the right to refuse the nutritional care offered (for example, an ALS patient refuses a PEG tube) when they understand and accept the consequences of that refusal (such as a decrease in general condition and nutritional status). In this case, nutrition is implemented as well as possible in a manner acceptable to the patient.

Nutritional care may not increase or prolong suffering and its enhancement is not justified if it cannot be expected to have a beneficial effect on the patient's clinical condition, quality of life, prognosis or nutritional status. This particularly applies to the initiation of enteral nutrition and intravenous nutrition. This can be a challenging situation for health care personnel, as the patient and/or family may demand more effective nutrition. The patient's relatives need psychological support when making such decision. When assessing the situation, the following questions can be asked: "Will the patient die because they are not eating, or is the patient not eating so that they will die?" and "What does the patient want?" If a patient is unable to make a decision on their own treatment, the patient's legal representative, next of kin or other close relatives are asked what kind of treatment would best correspond to the patient's own will. If this matter cannot be assessed, the patient should receive treatment that corresponds to their personal interests (Act on the status and rights of patients 785/1992, 6§ in Finnish).

However, it is difficult to predict the development of a patient's condition and making a decision to end nutritional care is challenging. Situations that require ethical assessment include ending intravenous and enteral nutrition and fluid therapy during the transition to terminal care and/or starting them, for example, in the case of an eating disorder and for a person with severe memory disorders. In these situations, observing the key basic ethical principles assists in assessment.

3 European Society for Clinical Nutrition and Metabolism, ESPEN, American Society for Parenteral and Enteral Nutrition, ASPEN, The Finnish Society for Clinical Nutrition and Metabolism, FISPEN

Basic ethical principles in nutritional care:

1) respect for the right to self-determination
2) assessment the benefit of the procedures, in other words, treatment that is in the best interests of the patient
3) avoiding damage and harm and
4) fairness, which means equal treatment of patients and equal use of resources.

In the case of young patients with eating disorders, involuntary treatment is necessary in order to implement enteral nutrition in cases of life-threatening malnutrition. Instructions related to managing ethical challenges are presented in the introduction at the beginning of the section (see p. 31). In addition, ethical questions related to various diseases and situations, such as palliative care, cancer patients and older adults, are discussed in the relevant sections. Multi-professional teams with whom the solution can be discussed and plans for symptomatic treatment are beneficial, for example, for the parents of minors. The decisions that are made should be documented, and practices evaluated and monitored on a regular basis.

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Nutritional care costs, cost-effectiveness and savings

- Health-promoting food as well as timely and effective nutritional care can reduce health care costs.
- Nutrition affects the risk and treatment outcomes of chronic diseases, and also prevents diseases from worsening, thus improving the carrying capacity of the health care system.
- Individual counselling provided by a nutritionist in a sufficient number of guidance sessions is effective in cases involving lifestyle diseases, and an investment in counselling pays for itself many times over.
- Malnutrition increases the costs of treatment. Malnutrition risk screening and prevention of malnutrition are cost-effective.

The purpose of financial assessment is to identify, measure, value and compare the costs and outcomes of different options. The most commonly used analysis methods are cost-effectiveness and cost minimisation analysis. Effectiveness refers to changes that can be achieved through the use of measurable actions. The following indicators have been used: Quality Adjusted Life Year (QALY) and natural measurement units, such as weight change, change in blood pressure or laboratory results (total, HDL, LDL cholesterol levels). One quality-adjusted life year represents one year of life in perfect health. It links health-related quality of life and life expectancy and is based on the patient's subjective assessment of their own quality of life.

Examples of quality of life indicators include the 15D and EQ-6D tools for measuring health-related quality of life. Cost-effectiveness is based on comparing different options from the perspective of both impacts and costs. Costs are influenced by the perspective of review – the payer – which can be a health service provider, insurance company, patient or society.

Health-promoting nutrition reduces costs

Hospital food provides a model for health-promoting eating and can have a far-reaching impact on the nutrition of a patient and their family. According to WHO estimates, the amount of money invested in reducing salt content in food products produces over 12-fold savings. In Finland, reducing salt intake by 3 grams per day would decrease the number of heart attacks by 1,000–1,500 and new strokes by 640–1,020, increase healthy life years by 3,800–6,000 and reduce health care expenditures by EUR 160–280 million per year. It is estimated that decreasing saturated fat and salt intake at workplace restaurants in accordance with cardiac marker meals would reduce health care costs by approximately EUR 221,000 annually, even if this change only affected 5% of Finns.

Nutrition affects morbidity and treatment costs

Inadequate nutrition increases morbidity, mortality and health care costs. About 18% of deaths in Finland are related to nutrition. This is higher than the EU average and significantly more than the percentage deaths associated with low physical activity, which is 3%, and equal to the total number of deaths related to tobacco and alcohol. In particular, nutrition that deviates from the recommendations increases the risk of non-communicable diseases, such as cardiovascular disease, diabetes and certain cancers. Mortality associated with non-communicable diseases accounts for approximately 0.8% of the EU's gross national product on a yearly basis. Approximately 1.7% of the gross national product is spent on the related sickness absences and disability.

In Finland, obesity resulted in a total cost of at least EUR 260 million in 2005, with health care accounting for EUR 190 million and social security for EUR 70 million. More than half of the health care costs related to obesity were spent on inpatient care and 40% on pharmacotherapy. The majority of social security costs associated with obesity were disability pensions. Two thirds of obesity costs were related to three diseases: type 2 diabetes, strokes and osteoarthritis. The prevalence of obesity in the population has increased, which means that the total costs above are underestimated. The FinnHealth 2017 material showed that obesity (BMI ≥30) caused direct health care costs of EUR 2,665 euros per year, which was 866 euros more than for people of normal weight or who are overweight (BMI 18.5-29.9). In 2011, diabetes resulted in costs totalling EUR 3,384 million, of which EUR 832 million were medical care costs and EUR 2,552 million were productivity costs, such as sickness absences, early retirement and deaths.

Effective counselling

Properly timed nutrition counselling that includes a sufficient number of sessions enhances patient treatment. Studies show that individual counselling provided by a nutritionist over three sessions (2 x30 min., 1 x 60 min.) decreased the total cholesterol level by 6%, LDL cholesterol level by 13%, and BMI by 4%, and improved quality adjusted life years by 0.75–0.85 QALY in addition to reducing pharmacotherapy costs by EUR 567–1,249 per patient each year.

Individual health coaching provided by a diabetes nurse and registered nurse by telephone 11 times during the year reduced the incidence of chronic disease complications in patients with type 2 diabetes and coronary heart disease (n = 501). It also had a positive impact on the quality of life and paid for itself over a period of 2.5 years. During an eight-year monitoring period, savings in social and health care costs amounted to approximately EUR 5 million. The savings were mainly due to decreases in specialised inpatient ward care, outpatient appointments and institutional maintenance.

Regular screening to identify the malnutrition risk must be performed in social and health care and the nutritional status of patients who belong to risk groups monitored to ensure cost-effective treatment.

Cost-effectiveness by preventing malnutrition and improving nutritional care

Malnutrition and severe risk of malnutrition increase the need for care (see Significance of nutrition p. 25). This leads to increased treatment costs (Figure 3), of which nutritional care accounts for very little.

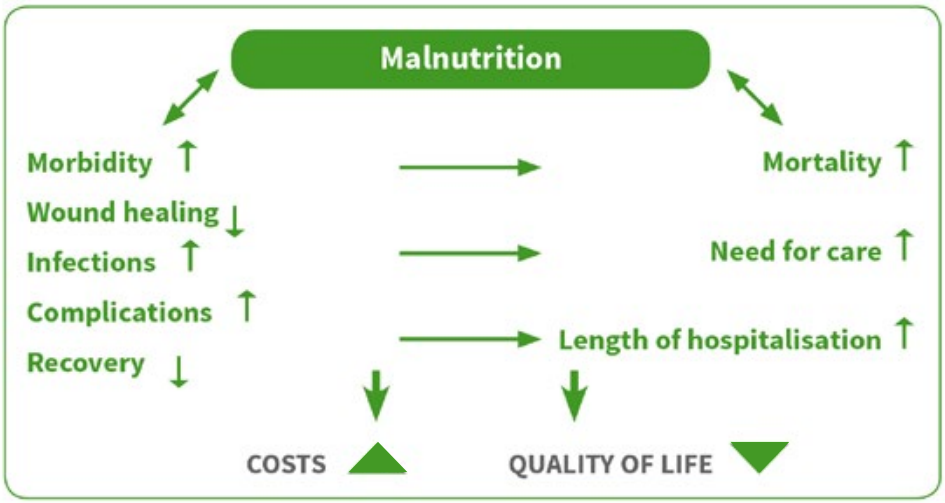

Figure 3. Malnutrition increases morbidity, need for care and the length of hospitalisation, which subsequently leads to higher treatment costs and reduces quality of life.
Source: Norman K et al. Clin Nutr 2008; 27:5-15.

Costs will increase if the need to improve the effectiveness of a patient's nutritional care is not identified or that need is not met. Treatment of malnutrition among the adult population in Finland results in additional costs of approximately EUR 600 million per year. The price of a hospital treatment period for a person with malnutrition is EUR 3,816 more for a patient than for a patient with good nutritional status. Malnutrition that develops during hospitalisation increases the costs of the treatment period by EUR 2,901-6,564 and extends its length by 3–7 days. The additional cost of care needed to correct the risk malnutrition or actual malnutrition in an older long-term care patient is EUR 8,287–10,497, with nutritional care only accounting for 2% of this amount.

The costs of nutritional care come from the following:

- food and the resources used to prepare it
- instruments to measure height, weight and body composition
- oral nutritional supplements and the equipment and supplies needed in nutritional care
- working hours of nursing staff
  - determining weight and height information
  - clarifying diets
  - assessing the malnutrition risk
  - ordering food
  - monitoring the amount of food eaten
  - monitoring weight and laboratory test results
  - multi-professional consultations
  - monitoring other necessary information
  - recording care

The majority of the above are part of basic care. Screening and the implementation of nutritional care do not significantly increase costs, in contrast to not screening and failure to identify malnutrition. The costs of screening for malnutrition risk, weighing patients and monitoring nutrient intake are approximately EUR 220 per patient per year in long-term institutional care. This sum includes the costs of the working time used by staff to perform these actions. In comparison to the above actions, implementation of enteral nutrition and intravenous nutritional care requires significantly more staff working hours.

Screening for malnutrition risk and supplementing the diet with 600 kilocalories a day and 12 g of protein costs approximately EUR 100 during an average treatment period, but it shortens the treatment period of a patient with malnutrition by one day. If the price of one treatment day for an internal medicine patient is EUR 1,000, screening and treating one patient who is at risk of malnutrition will save at least EUR 900.

According to research performed in Switzerland, implementation of tailored nutritional care (a nutritionist assessed nutritional status and nutrient intake and also prepared a nutritional care plan and monitored its implementation) in adult patients at risk of malnutrition ensured nutrient intake in accordance with the plan and reduced the likelihood of clinical adverse events and mortality as well as infections and return to the hospital. Cost savings totalled approximately EUR 2,500 per patient.

Savings are achieved by also proactively screening for malnutrition risk in, for example, social and health care services, local services for older people, and third sector activities (see Instructions – Outpatient clinic patient p. 41).

SOURCES p. 345

3

NUTRITIONAL CARE PROCESS

Nutritional status and screening for risk of malnutrition

- The objective of screening for malnutrition risk is to prevent the development of malnutrition by identifying at-risk patients early and by starting to improve their nutrient intake immediately.
- Screening for malnutrition risk in outpatient clinic patients is performed during the first outpatient clinic visit and according to the care plan in the future.
- Each inpatient ward patient is screened for the risk of malnutrition on the second day of treatment at the latest, and this is repeated every 5–7 days, in connection with hospital or ward transfers, and in rehabilitation institutions and home care at least every 3–6 months according to an individual plan.
- When transferring to further care, treatment procedures and the date for repeat screening are determined according to the malnutrition risk category and the illness.

Screening for malnutrition risk can be used to allocate the available nutritional care resources to patients who benefit most from them. Without screening, almost all patients at risk of malnutrition remain unidentified, because only patients who have severe malnutrition can be identified visually.

The NRS 2002 method (Appendix 1 p. 286) is suitable for all adult patients. It is also used in social and health care organisations for people over the age of 65. The method is not suitable for patients who are pregnant or have recently given birth, and it is not used for patients in terminal care. The MNA method (Appendix 4 a p. 289 and 4 b p. 290) is used to assess malnutrition risk and nutritional status in, for example, operating units for older adults which use the RAI (Resident Assessment Instrument) assessment and monitoring system and which have procured the Full MNA method as part of the RAI system. Use of MNA is presented in the Vitality in later years – food recommendation for older adults.

The tools used to identify the risk of malnutrition are the STRONGkids method in children and the NRS 2002 method for all adults in hospitals. In long-term care and open clinic care, the NRS 2002 method is used with18–65-year-olds and the MNA method for those over the age of 65 if use of both methods is smooth in the organisation, information systems support their use, and the incidence of malnutrition can be monitored in the organisation. In other cases, only one screening method is used.

NRS 2002 method for screening malnutrition risk

The NRS 2002 method consists of two parts: initial screening and main screening. Initial screening quickly and reliably identifies patients who are not at risk of malnutrition and who do not need to undergo main screening.

Initial screening questions

- Is the patient's BMI less than 20.5?
- Has the patient unintentionally lost weight in the previous 3 months?
- Has the patient eaten less than usual during the previous week?
- Is the patient being treated for a serious illness?

Main screening is performed if the answer to any of the initial screening questions is yes.

NRS 2002 main screening for malnutrition risk consists of three sections

1. Nutritional status (assessed on a scale of 0–3 points)
2. Impact of illness on the need for nutrition (assessed on a scale of 0–3 points)
3. Age over 70 years (1 point)

Nutritional status is evaluated by means of 3 factors: BMI, change in weight and change in nutrient intake. The patient is weighed using a scale classified as a medical device. Current meals or nutrient intake are compared to normal eating or the estimated need (see Appendix 2 p. 287).

The second section assesses the impact of the illness or condition on nutritional needs. This assessment is based on metabolic changes, in other words, the effect of inflammation on the need for protein and energy (see Significance of nutrition p. 25). An assessment of the inflammatory response caused by the illness (0–3 points) is presented in Appendix 3 p. 288.

Treatment is guided by the result of screening for malnutrition risk

If the total score for NRS 2002 screening is three or more, the patient has at least a moderate risk of malnutrition. The maximum screening score is seven points. Actions to improve nutrient intake for patients at risk of malnutrition is started without delay by ordering an enriched diet for a patient who is in a ward (see Figure 8 p. 75 and Nutritional care process, Appendix 10 p. 298–299) and by offering oral nutritional supplements if necessary. It is also important to provide a patient who is at risk of malnutrition or a person close to them with immediate counselling to improve nutrient intake at an outpatient clinic or open clinic. When planning nutrient intake enrichment, the diet required by an illness and treatment of symptoms that interfere with eating or nutrient intake should be taken into consideration (see p. 50 and Nutritional care plan p. 51).

Figures 4 a and 4 b present instructions for use when the NRS 2002 screening method has revealed a slight, moderate or severe risk of malnutrition. The significance of nutritional care as part of the treatment should be justified to the patient and their family.

Instructions – OUTPATIENT CLINIC PATIENT	
0–2 points **NO RISK/SLIGHT RISK**	1. Weight monitoring at home 1 x week 2. If necessary, provide guidance related to eating a balanced diet (written instructions) 3. Repeat the screening for malnutrition risk every 3–6 months and record the result
3–4 points **MODERATE RISK**	1. Weight monitoring at home 2 x week 2. Provide guidance on enriching nutrient intake and the use of oral nutritional supplements 1–3 times/day (written instructions) 3. Consultation with a nutritionist if weight decreases/is not corrected/problems implementing ▸ meals
5–7 points **SEVERE RISK**	1. Consultation with a nutritionist 2. Provide guidance on enriching nutrient intake and the use of oral nutritional supplements 1–3 times/day (written instructions)* 3. Weight monitoring at home 2 x week*

* While waiting for consultation with a nutritionist

Figure 4 a. Instructions for utilising results of malnutrition risk screening in an outpatient clinic patient

Instructions – WARD PATIENT	
0–2 points **NO RISK/SLIGHT RISK**	1. Visually monitor the amount of food consumed 2. Weight monitoring 1 x week ▸ If this is not possible, use a form to monitor food use for 2–3 days 3. Repeat the screening for malnutrition risk every 5–7 days and record the result
3–4 points **MODERATE RISK**	1. Enhanced diet and oral nutritional supplements 1–3 times/day 2. Use a form to monitor the amount of food eaten for 2–3 days 3. Weight monitoring 2 x week 4. Consultation with a nutritionist if the patient eats ½ or less of the food / weight ▸ decreases
5–7 points **SEVERE RISK**	1. Consultation with a nutritionist 2. Enhanced diet and oral nutritional supplements 1–3 times/day* 3. Weight monitoring 2 x week*

* While waiting for consultation with a nutritionist

Figure 4 b. Instructions for utilising the results of malnutrition risk screening in a ward patient

Assessing nutritional status and diagnosing malnutrition in adults

Nutritional status cannot be assessed on the basis of an individual factor or laboratory test. When assessing nutritional status, attention should be paid to unintentional weight loss, low BMI, reduced muscle mass, decreased nutrient intake, inflammation level and the catabolic effects of illness.

Weight changes in recent months are determined during screening for malnutrition risk. Weight loss is considered clinically significant if it is more than

- 2% in a week
- 5% in a month
- 7% in 3 months
- 10% in 6 months.

Swelling and fluid accumulated in the abdominal cavity or lungs should be taken into account when assessing weight change.

Diagnosing malnutrition according to the ICD-10 International Classification of Diseases is described in Appendix 5 p. 291. Use of the GLIM criteria (Appendix 6 p. 292) is recommended when diagnosing malnutrition.

The criteria consist of three phenotypic and two aetiologic criteria. The criteria for malnutrition are met if at least one phenotypic criterion and one aetiologic criterion are met.

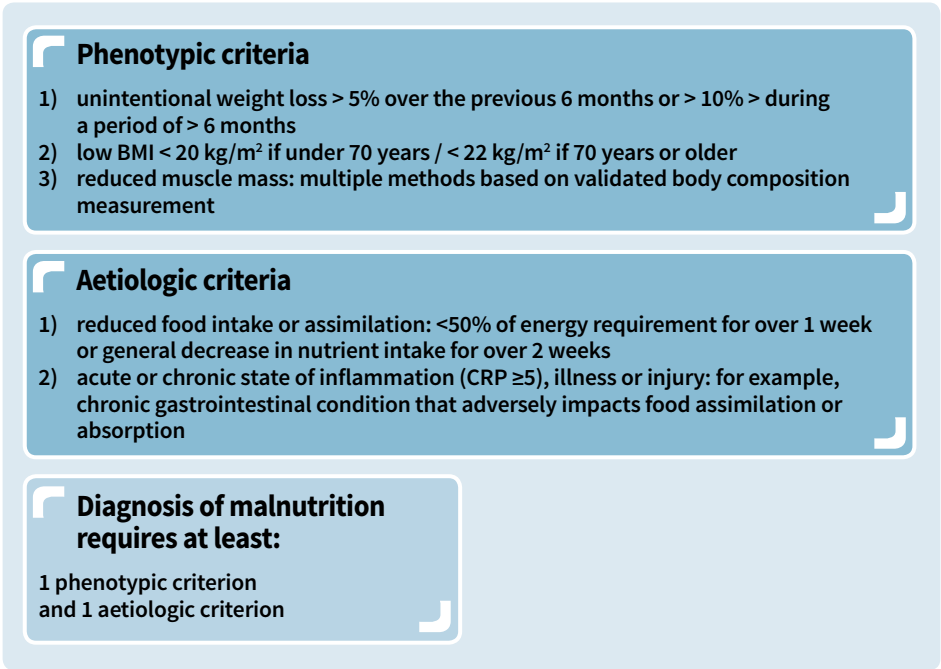

Figure 5. Diagnosis of malnutrition using the GLIM criteria

Muscle loss can be measured using different methods. The amount of muscle mass is primarily assessed using bioelectrical impedance (BIA), an x-ray device (DXA measurement), or computer tomography. The alternative to these methods is calf or mid-upper arm circumference.

- ASMI* males < 7.0 kg/m^2, females < 5.4 kg/m^2 (DXA), < 5.7 kg/m^2 (BIA)
- FFMI* males < 17 kg/m^2, females < 15 kg/m^2
- ALM*/weight males < 25.7%, females < 19.4%
- calf circumference males < 33 cm, females < 32 cm

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* ASMI = Appendicular skeletal muscle index
** FFMI = Fat-free mass index
*** ALM = Appendicular lean mass

Malnutrition can be graded as moderate or severe, depending on the degree of weight loss and muscle loss. (See Appendix 6 p. 292). The nutritional status of people over 65 can also be assessed using the MNA.

Screening for malnutrition risk in children

Children are particularly vulnerable to developing malnutrition, as their energy needs are larger and nutrient stores relatively smaller in comparison to adults. The validated STRONGkids method is used to assess malnutrition risk in children (1 month–18 years) (Appendix 7 p. 294). The screening method has not been validated for intensive care patients, who are always assumed to be at risk of malnutrition.

STRONGkids screening classifies children into high, medium and low risk categories. An individual nutritional care plan is drawn up for patients with a high or moderate risk. The child's growth should be monitored regardless of the malnutrition risk, but it should be monitored more closely in patients with a high or moderate risk.

Assessing nutritional status and diagnosing malnutrition in children

The growth curve is the primary indicator of nutritional status in children. Growth is examined over a longer period of time. A deviation in height or weight development may be a sign of illness or malnutrition. Head circumference is also monitored in children under the age of three. Body mass index varies according to age in children, which means that it is not a suitable indicator of nutritional status. ISO-BMI describes the relationship between a child's weight and height in a corresponding manner to BMI does for adults (https://www.psshp.fi/kasvukayrat in Finnish). It is standardised for children over the age of 2 The height-to-weight ratio is used for children under 2.

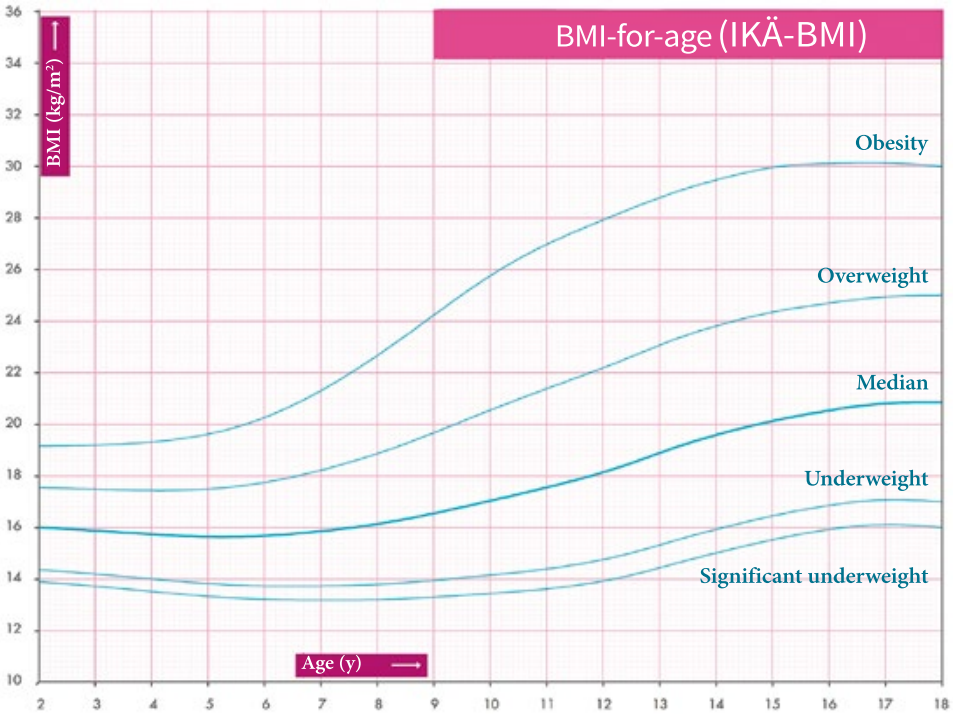
A child may be structurally slim and healthy if they have no other symptoms or signs of malnutrition and height is increasing normally. If this is not the case, malnutrition based on BMI-for-age can be considered

- severe if the height-to-weight ratio is <-30% or BMI-for-age is <16 kg/m^2,
- moderate if the height-to-weight ratio is -30% – -20% or BMI-for-age is 16–17 kg/m^2
- slight if the height-to-weight ratio is -15 – -20% or BMI-for-age is 17–18.5 kg/m^2.

Chronic malnutrition in a growing child generally leads to slower vertical growth, although other diseases may also have an effect on this. One indicator is the standard deviation unit for height (SDS), which is proportional to the estimated height based on the heights of the patient's parents. The growth curve program issues an alarm regarding an abnormal change in vertical growth and a deviation in height in relation to the average height and expected height of the population.

Complementary assessment methods that are used rarely in clinical work include mid-upper arm circumference, waist circumference-to-height ratio, skin fold measurements and – starting at the age of 6 – hand grip strength measurement. Bioimpedance measurement can also be used in practical work as long as the minimum age limits for device-specific reference values are taken into account.

The criteria for diagnosing malnutrition in children are presented in Appendix 8 p. 296.



More information www.terveyskyla.fi (in Finnish)

SOURCES p. 347

Assessing the need for nutrients and fluids

- The need for nutrition and fluids is assessed individually.
- Diseases can increase or decrease the need for energy, protein, other nutrients and fluids.
- Nutrition needs often changes during illness, making it necessary to reassess the need.
- The general assessment of nutritional needs is based on the national nutrition recommendations. However, the nutrition needs of an individual patient are affected by changes in the energy reserves and metabolism caused by disease, medication or other treatment, and abnormal deficiencies resulting from the disease.

Energy requirement

It is difficult to accurately assess the energy needs of a sick person. Indirect calorimetry can be used to measure energy consumption in, for example, intensive care patients. However, this measurement involves several sources of error. A number of forecast equations are also available to assess energy needs. These take into account the patient's age, gender, height and weight and have been developed for different patient groups and different clinical situations. None of these has been proven to accurately predict the need for energy.

A simple method of calculating daily energy requirement for adults that is suitable for practical work is:

- 25–30 kcal/kg* for normal-weight bedridden patients or those who have a low physical activity level
- 35 kcal/kg* for patients who are physically active or underweight or recovering from major surgery or trauma
- 25 kcal/kg*/day in overweight or obese patients

* measured weight is used, with consideration to any deviations in fluid balance.

When assessing the requirement for energy, it is important to the patient's clinical situation into account in order to ensure that energy intake is not unnecessarily low, thus interfering with the patient's recovery. Weight is monitored 2–3 times a week and, if necessary, the patient's energy intake adjusted based on the weight change. The patient should not lose weight in an acute situation. This also applies to obese patients. If it is considered justified and safe for an obese patient in hospital care to lose weight during hospitalisation, the enrgy requirement can be estimated at 11–14 kcal/kg* when BMI is 30–50 kg/m^2 and 22–25 kcal/kg of ideal weight (BMI 22 kg/m^2) when BMI is over 50 kg/m^2 while simultaneously ensuring that the need for additional are met (see below).

* measured weight is used, with consideration to any deviations in fluid balance.

In children, accurate disease-specific daily energy needs can be calculated using the source Becker et al. A simpler formula can be used for most children:

- 0–5 months 108 kcal/kg
- 6–12 months 98 kcal/kg
- 1–3 years 102 kcal/kg
- 4–6 years 90 kcal/kg
- 7–10 years 70 kcal/kg
- boys 11–18 years 55–45 kcal/kg
- girls 11–18 years 47–40 kcal/kg

Fluid balance disorders, swelling or dehydration can cause significant changes in a patient's weight.

A severe disease or other stressful bodily condition, such as the immediate post-operative stage following major surgery, can accelerate the metabolism and increase the need for energy by 10–30%. Such situations include fever (10%/degree of fever), infection or injury. On the other hand, physical activity often decreases during illness and reduces energy consumption.

Nutritional care for a person with severe malnutrition should begin with a moderate amount of energy to avoid the refeeding syndrome (see Refeeding syndrome p. 156). However, the need for energy per body weight kilogram may become very high as the malnutrition is corrected. Energy intake targets are also set lower than those described above for critically ill patients who are in the early stages of intensive care. An assessment of individual dietary needs performed by a nutritionist is justified if the patient's basic energy need is significantly and permanently reduced (for example, in the case of quadriplegia or respiratory paralysis and in some muscular diseases) or increased (for example, due to dyskinesia or spasticity).

A person's weight history indicates whether energy intake is adequate or too high in comparison to the need when the body's fluid balance is normal. Regularly measuring weight makes it possible to assess the suitability of energy intake. For adult patients who are losing weight under regular monitoring, computational energy deficit modelling is an effective way of assessing the need for additional daily energy: computational energy deficit/day = lost weight (kg) x 7,000 kcal/kg / number of days. For example, an assessment based on computational energy deficit is suitable for cancer and neurological patients who are losing weight.

Need for protein

The requirement for protein in a healthy adult is 1.1–1.3 g/kg of body weight. The average protein intake for Finns is higher than this.

Protein is needed to build and regenerate tissues and for enzyme and hormone function. It is also needed to regulate fluid balance and acid-base balance, maintain the defence system and transport important molecules. Effective protein utilisation for these purposes requires an adequate supply of energy and many vitamins and minerals. If the energy intake is too low, protein is also used as an energy source.

Assessing the need for protein in sick people is challenging, because different diseases and clinical conditions affect the need in different ways. Malnutrition and the recovery phase increase the need for protein to a certain extent. For example, severe infections, large wounds, burns, bone fractures and other trauma as well as major surgery can significantly increase the need for protein. A patient may also lose protein, for example, via wound and drain leakage or because of dialysis treatment.

High protein loss due to stress metabolism during the acute phase of a serious disease causes significant muscle loss, up to 900 g/day. Even high protein intake (more than 2 g/kg) can only reduce muscle loss but not completely prevent it. It is typical that the more seriously ill a patient is, the greater the loss of muscle tissue caused by the illness.

If a patient has a high level of drain leakage, the amount of protein lost via discharge per day is determined. Lost protein should be replaced by starting an intravenous albumin infusion.

Assessing the need for protein during a single day in different situations:

- Normal need, 18–64-year-olds, 1.1–1.3 g/kg or 10–20 E%
- Normal need, 65 and older, 1.2–1.4 g/kg or 15–20 E%
- Increased need, 1.3–2 g/kg
  - 65 and older at least 1.5 g/kg or approximately 20 E%
  - if BMI >30 kg/m^2, at least 1.2 g/kg

If a patient's BMI is over 30 kg/m^2, adjusted body weight can be used to calculate the need for protein. The calculation equation for adjusted body weight is [IBW23 + 0.25 x (current weight-IBW23)], in which IBW23 is the weight in kilograms equivalent to a BMI of 23.

A child's relative need for protein is higher than that of an adult, as protein is also required for growth. If the child is not critically ill or recovering from injury or surgery (for more details, see Becker P et al, 2015), the daily protein need can be assessed as follows (intake is often exceeded):

- 0–6 months 1.52 g/kg
- 6–12 months 1.2 g/kg
- 1–3 years 1.05 g/kg
- 4–13 years 0.95 g/kg
- 14–18 years 0.85 g/kg

Need for fluids

Sufficient fluid intake is essential for digestion, nutrient absorption, metabolism and elimination of its end products, and for body temperature regulation. Fluid balance is vital for the functioning of the circulatory system, kidneys and lungs.

Under normal circumstances, an adult's fluid need is 35 ml/kg for people under 55 years of age and 30 ml/kg for those aged 55 or over. The need for fluids in children is assessed according to the Holliday-Segar formula. If nutrition is administered orally, add 20% to the amount of fluids given in the formula (factor 1.2). If solid food supplements have not yet been started, a baby needs approximately 150 ml/kg of milk to ensure sufficient energy intake.

Child's weight	Need for fluids
0–10 kg	100 ml/kg
10–20 kg	1,000 ml + 50 ml/kg when weight is 10–20 kg
>20 kg	1,500 ml + 20 ml/kg when weight is >20 kg

For adults, 1–1½ litres of liquid in addition to the fluid obtained from food (approximately 0.8 litres) covers fluid needs in a normal situation. In addition to this, nursing mothers need an extra 6–7 dl of fluids per day, although this need depends on the amount of milk produced. Older adults are susceptible to fluid deficiency and dehydration.

When assessing fluid balance, fluid intake should be calculated based on beverages and liquid food or nutritional products, as well as possible intravenous hydration. In addition, fluid loss through urine, vomiting, faeces, drains and stoma, abnormal evaporation through the lungs and skin and high fever should be taken into account.

Need for vitamins and minerals

National nutrition recommendations provide the foundation for assessing the requirements for vitamins and minerals. The need may change during illness due to, for example, the interaction between medicines and nutrition as well as increased or reduced fluid loss. However, very few disease-specific assessments of the need for vitamins and minerals are available.

▶ SOURCES p. 348

Planning nutritional care

- The objective of nutritional care is to ensure that the patient's intake of nutrients and fluids meets their requirements in terms of maintaining or correcting nutritional status.
- Assessment of the patient's clinical situation and nutritional status and food use provide the basis for planning nutritional care.
- The patient's nutritional care plan includes the objectives, individual implementation method and monitoring of the treatment.
- A nutritional care plan is a document that is updated during the treatment and revised on the basis of nutritional care implementation and monitoring of nutritional status. The nutritional care plan is also forwarded to the further treatment location.

Basic information needed when planning nutritional care

- nutritional status and other clinical conditions
  - weight, height
  - growth in a child
  - BMI (Interpretation of BMI in the adult population and in older adults Table 3 p. 50 and Criteria for overweight and obesity in children and young people Table 4 p. 50)
  - weight changes
  - malnutrition risk (see Screening for malnutrition risk, adults p. 39 and children p. 43)
  - possible sarcopenia, cachexia
  - laboratory test results
- diseases and situations requiring nutritional care
- the patient's ability and possibility to eat
- possible food restrictions
- possible obstacles preventing use of the digestive tract
- an estimate of the need for nutrient and fluids with consideration to the patient's age and illnesses (see Assessing the need for nutrition and fluids p. 45)
- an estimate of nutrient and fluid intake
- diet characteristics that may arise from the patient's religion or ethical convictions
- cultural factors
- the patient's wishes and preferences.

Identifying situations and symptoms that interfere with eating and nutrient intake

Many physiological, neuropsychiatric and psychological factors affect the patient's ability and possibility to eat and consume enough food:

- appetite (appetite can be assessed using the SNAQ method, Appendix 9 p. 297)
- ability to chew, dental status
- ability to swallow
- dry mouth (https://www.terveyskirjasto.fi/dlk00896, in Finnish) and other oral symptoms
- pain
- nausea, vomiting
- diarrhoea, constipation and other gastrointestinal symptoms
- psychiatric or neuropsychiatric condition (see Psychiatric and developmental neuropsychiatric disorders p. 244)
- social factors.

Table 3. Interpretation of BMI in the adult population and in older adults[1]

BMI (kg/m^2)	Interpretation
Adults	
<18.5	Underweight
18.5–24.9	Normal weight
25–29.9	Overweight
30–34.9	Obesity
35–39.9	Severe obesity
40 or more	Morbid obesity
Older adults (over 65 years)	
<22	Underweight
22–23.9	Slightly low weight
24–29	Normal weight
>29	Overweight

1 Adapted from the Obesity Current Care Guideline (2021) and National Nutrition Council and Finnish Institute for Health and Welfare (THL). Vitality in later years – food recommendation for older adults (2020).

Table 4. Criteria for overweight and obesity in Finnish children and young people that are suitable for clinical use

ISO-BMI	Overweight	Obesity
ISO-BMI* (≥2 years)	25–29.9 kg/m^2	≥30 kg/m^2
Height-weight <7 years	10–20 %	>20 %
Height-weight ≥7 years	20–40 %	>40 %

* For children over 2 years of age, the ISO-BMI (corresponds to adult BMI) describes the body mass index that a child will have as an adult if their BMI remains at the same level in comparison to their peers.

Nutritional care plan

The nutritional care plan is compiled by a nutritionist or by a health care professional familiar with the patient's illness and condition and nutritional care, either alone or as multi-professional cooperation. A nutritional care plan is written in a process-oriented manner (objectives, needs, methods, implementation and monitoring). A nutritional care plan includes the following information:

- the objective of nutritional care, for example:
  - ensuring nutrient intake that corresponds to needs
  - correcting malnutrition
  - safeguarding a child's growth
  - maintaining current weight
  - increasing weight
  - reducing weight
  - diet required because of disease
  - ensuring sufficient nutrition via enteral nutrition
- need for nutrition (energy and nutrients) and fluids
- nutrition delivery route
- nutritional care methods and individual needs and requests
  - diet (for example, coeliac disease diet as an enriched diet)
  - portion size, required amounts of food, additional snacks
  - food texture
  - selection and amounts of oral nutritional supplements
    - oral nutritional supplements
    - enteral nutrition products
    - intravenous nutrition products
  - nutrition counselling (timed according to the disease situation and specific needs)
- a written plan for implementing nutritional care
- a monitoring plan.

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Nutritional care providers, implementation and development

- Nutritional care requires clear division of responsibilities and sufficient resources as well as cooperation with the patient and their family and friends.
- Many different professional groups participate in implementing effective nutritional care for a patient, and cooperation between them is essential to ensure success.
- Multi-professional working groups plan and coordinate the nutritional care of patients and draw up policies to guide the activities in order to enable successful nutritional care.
- Use of recorded practices that have been agreed in advance promote equal treatment of patients during the implementation of nutritional care.

Multi-professional implementation of nutritional care

Smooth cooperation and division of responsibilities between different professional groups, a systematic approach, jointly agreed terminology (for example, abbreviations for different diets and textures), reliable patient measurement devices, and reserving sufficient working hours ensure the high-quality implementation of nutritional care. Continuous development of nutrition-related competence and staff training are an integral part of managing nutritional care quality.

Identifying the critical points of nutritional care (see Figure 6 p. 61) and developing activities also have an impact on the quality of nutritional care.

Different professional groups participate in the planning, daily implementation and evaluation of nutritional care in accordance with their job descriptions (Table 5, below) and the nutritional care process (see Appendix 10 p. 298–299).

Table 5. The roles and responsibilities of different professional groups and persons as part of a patient's nutritional care

Professional groups/ nursing staff	Tasks
Medical and nursing science management, financial management and human resources administration	• Confirms the nutritional care objectives and action plans and monitor implementation • Ensures availability of staff and other resources
Physician	• Overall responsibility for the patient's medical treatment and nutrition • Assesses the appropriateness and safety of medication • Assesses nutritional status and fluid balance as well as the need for nutritional care, with consideration to the patient's overall condition and prognosis • Diagnoses malnutrition and other nutrition-related diseases/ conditions (including obesity, sarcopenia, cachexia and swallowing problems) and records the malnutrition diagnosis • Plans nutritional care, arranges multi-professional monitoring if necessary and motivates the patient: selects the nutrition delivery route, plans fluid therapy; assesses the energy and protein need, plans enteral nutrition and intravenous nutrition in cooperation with a nutritionist if necessary • Requests consultation with a nutritionist, speech therapist and other professionals if necessary • Writes prescriptions and statements related to nutritional care • Participates in the tendering process for oral nutritional supplements and nutrition-related supplies

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Professional groups/ nursing staff	Tasks
Registered nurse	• Screens for the risk of malnutrition, analyses and records the results in the patient information system, prepares and implements a care and guidance plan in accordance with care practice • Places individual food orders, including portion size corresponding to nutrition needs, suitable food texture, enrichment, and the diet required to treat a disease and records this information • Observes the patient's eating and swallowing and encourages good nutrition • Nutrition counselling according to work tasks • Participates in nutritional rehabilitation (for example, eating and swallowing exercises) • Monitors the patient's food use and fluid intake and assesses sufficiency • Assesses the need for oral nutritional supplements and provide them in accordance with agreed practices • Ensures the correctness of food and food hygiene (self-monitoring) before starting to serve food, distributes and serves food in cooperation with practical nurses and institutional cleaners • If necessary, assists with the patient's meals, supports their eating and, for example, supervises the meals of patients with eating disorders in cooperation with practical nurses • Monitors and records nutrient intake, weight and height in the patient information system in cooperation with practical nurses • Transfers nutritional care information and the nutritional care plan to the further treatment location • Requests client feedback in cooperation with practical nurses
Public health nurses and nurses with clinical specialisation	• Nutrition counselling according to work tasks. Requires familiarity with the nutritional care of patients in their own speciality, for example, a stoma nurse/ PEG nurse/diabetes nurse/cardiac nurse/kidney nurse/wound nurse/psychiatric nurse
Nursing staff's person in charge of nutrition	• Utilises the results of malnutrition risk screening in nursing and develops it in their own unit in cooperation with the head nurse • Updates, maintains and shares information related to nutritional care in their own unit
Head nurse/ unit supervisor	• Manages the implementation of nutritional care and overall responsibility in their own unit/ward • Responsible for the use, results monitoring, reporting and implementation of actions related to malnutrition risk screening at the unit level • Utilises the results of malnutrition risk screening in nursing and develops it in their own unit in cooperation with the nursing staff's person in charge of nutrition • Verifies the nursing staff's nutritional care competence and ensures that it is updated • Enables multi-professional cooperation • Monitors diet-related orders and their correctness • Manages food waste • Monitors costs related to food services • Performs quality review rounds in cooperation with food services

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Professional groups/ nursing staff	Tasks
Nutritionist	• An expert in clinical nutritional care content and methods and in evidence-based and evaluated treatment practices • Prepares an individual nutritional care plan • Nutrition therapy – nutrition counselling and monitoring of nutritional care • Nutrition-related psychoeducation • Selects oral nutritional supplements and food supplements and specifies the doses • Implements, evaluates and monitors the patient's nutritional care: – overall assessment of nutrition (assessments of nutritional status, nutrient intake and nutritional needs) • Plans enteral nutrition • If necessary, plans parenteral nutritional care in cooperation with a physician – provides nutrition counselling for agreed patient groups and their families and friends and monitors nutritional care • Multi-professional group guidance • Supports the nutritional care competence of other staff members by providing training and expert support • Nutritional care expertise in working groups and care teams (for example, related to developing and managing patient treatment processes) and in food services • Develops and plans nutritional care in a wide-ranging manner • Participates in the tendering process for oral nutritional products
Speech therapist	• Sensorimotor assessment of sucking, biting and swallowing ability • Assesses the eating situation, also with consideration to interaction matters • Assesses and provides guidance concerning an eating position, food composition and utensils that are suitable for the patient • Participates in counselling selective eaters or those with sensory defensiveness • Rehabilitation related to eating and swallowing capacity • Counsels patients, family members and nursing staff
Oral health professionals	• Assesses the condition of the chewing organ, care and planning of further treatment • Self-care and lifestyle guidance for the patient in order to promote oral health • Enhanced oral disease prevention
Occupational therapist	• Assesses and rehabilitates the patient's functional capacity • Promotes motor and sensory skills that support eating • Ensures an optimal eating posture for the patient and provides guidance in cooperation with other staff • Assesses the need for meal aids and special utensils, creates or modifies them and provides guidance related to their use • Participates in nutrition counselling, for example, in connection with kitchen exercises • Provides advice and guidance in food preparation and other everyday activities

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Professional groups/ nursing staff	Tasks
Rehabilitation counsellor	• Assesses and provides advice on coping with everyday life and the need for aids, financial and other support • Acts as a contact person between the care location and the day-care centre/school and in rehabilitative work activities for adults • Operates at the interface in professional cooperation from the perspective of nutrition (for example, in day-care centres, schools, nursing home and sheltered housing units)
Psychologist and psychiatric nurse	• Psychological support and treatment of various disorders (for example, depression) • Work with patients who have eating difficulties and disordered eating behaviour due to psychiatric reasons • Support the patient in following the recommended diet in cooperation with other personnel
Physiotherapist	• Assesses and promotes the patient's physical functional capacity and rehabilitation • Motivates the patient regarding nutritional care to promote rehabilitation • Ensures a good meal posture and provides the patient and nursing staff with guidance • Psychophysical physiotherapy for people with eating challenges
Social worker	• Assesses the need for social security, services and support • Supports self-care and functional capacity • Listens to the patient and cooperates with the patient's family/ friends (for example, meal arrangements at home) • Participates in planning care and rehabilitation planning • Multi-professional cooperation and networking
Pharmacy professionals	• Identifies and resolves drug/nutrition interactions in cooperation with a physician and a nutritionist • Investigates questions related to nutritional products (for example, equivalence, suitability for children/adults) • Checks the compatibility of various individual parenteral nutrition components • Handles tendering, procurement, distribution and ensures the safety of oral nutritional supplements through multi-professional cooperation

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Professional groups/ nursing staff	Tasks/food services, institutional maintenance and logistics
Food services planners and experts	• Plan menus and plan and provide instructions related to implementing diets • Recipes and product development • Plan food procurement and productisation • Plan self-monitoring • Expert and training services • Multi-professional cooperation with other professional groups and nursing staff • Monitor client feedback and consumption and utilise this information in product development • Waste management
Food services supervisors and food services personnel	• Plan production • Prepare and distribute food • Implement self-monitoring
Food services Service manager (producer) **Food services procurement specialist (purchaser/ buyer)**	• Overall responsibility and policies for implementing the food services **Both operators handle the following:** • Monitor implementation of the services and procurement agreements • Quality rounds • Self-monitoring in wards • Client cooperation • Cooperation with the food service provider
Hospital cleaner or institutional cleaner	• Orders ready products* and supplements the patient's meal in cooperation with the nursing staff • Participates in food distribution and serving if this is possible in light of the patient's treatment/condition • Participates in completing the fluids list and/or food use monitoring form • Communicates feedback about meals to the nurses • Self-monitoring tasks related to patient meals and the ward kitchen
Transportation personnel	• Deliver meals and ready products ordered from food services to wards and other delivery points at the agreed time

* Ready products are food items ordered by the wards that are delivered by food services. The basis for the orders can be an agreed service/ward-specific product selection.

Responsibilities of different employees, division of labour and partners

The nutritional care process (details of care implementation, division of work and responsibilities, selection of process indicators) in different patient groups or units is planned as multi-professional cooperation. This planning requires the participation of a ward physician/responsible physician, head nurse/responsible nurse, a nutritionist and representation from nurses and, if necessary, other personnel involved in patient meals. If the treatment of a patient group regularly requires the expertise of a speech therapist or some other specialist, they are also involved in the planning. Planning takes into account the organisation's nutritional care policies and service chains that cross organisational boundaries.

Everyone who participates in a patient's care is responsible for nutritional care according to their professional duties (see Table 5 p. 53–57). The physician's task is to medically assess the need for nutritional care and counselling based on the patient's diagnosis and nutritional status. It is important for the physician to explain the significance of nutritional care to the patient. Nurses encourage, motivate and guide the patient with regard to self-care. The physician has overall responsibility for the treatment, including nutritional care, and the nursing staff is responsible for practical implementation.

It is important for a registered nurse to have responsibility for patient meals in order to ensure that nutritional care is successful. In terms of food distribution, the nurse is responsible for ensuring that each patient receives the correct meal. In order to ensure patient safety, every person who orders and serves food to a patient must be aware of that patient's special needs, dietary content, and the ingredients in food and beverages, such as allergens. Staff who participate in distributing food with the nurse and assist patients with eating are responsible for monitoring eating and reporting any observations made during the meal, such as the amount of food left uneaten and the patient's requests, to the nurse.

The specialist expertise of a nutritionist is required in nutritional care of diseases. As an expert, a nutritionist participates in the planning and implementation of nutritional care at the ward and unit level. A nutritionist works as a member of a multi-professional team or as a work pair with a doctor or nurse. The criteria for referral to nutrition therapy are based on the nutritional care needs of different diseases and patient groups as well as national nutrition recommendations and Current Care Guidelines (Appendix 11 p. 300). The use of uniform referral criteria ensures equal treatment of patients.

Multi-professional expert groups on nutritional care

Multi-professional collaboration is a prerequisite for successful nutritional care in a patient. Multi-professional care teams work in hospitals, other institutions and wellbeing services counties as well as in food services and individual wards or outpatient clinics. The teams meet regularly to review overall treatment and nutritional care as one of its parts. For example, nutritional care is dealt with in care teams for the following

patients: older adults with acute illnesses, wound patients, people who have intellectual disabilities, and patients with hip fractures, eating disorders, cancer and neurological disorders. Nutrition teams that focus only on nutritional care may operate in, for example, home nursing, rehabilitation or as weekly activities in an individual ward.

The food and nutrition contact persons for the wards participate in joint meetings involving food services and the wards and are responsible for providing information on nutrition matters related to their wards.

Nutrition expert or working groups plan and organise the implementation of nutritional care and also monitor meal implementation in accordance with the recommendations. Expert and working groups also monitor the results of client surveys and develop activities based on them. A nutrition expert group or nutrition working group is needed in every hospital or care facility. The working group should include representation from different units, professional groups and food services as well as management and people involved in practical patient work.

Nutrition expert groups or working groups in the wellbeing services counties promote the development of uniform nutritional care practices as well as equal access and quality of nutritional care. They participate in the planning, preparation and development of nutritional care chains and in the implementation of procurement processes.

Perspectives on developing the quality of nutritional care

Quality work is part of everyday activities and it requires the involvement of all professional groups. Quality is developed as part of each person's work and development projects.

Properly timed and high-quality nutritional care maintains or corrects a patient's nutritional status. Quality is a patient's satisfaction with the availability, content and implementation of services. Client panels and experts by experience are involved in planning and developing operations and in evaluating quality. Ensuring the competence of personnel and actions implemented on the basis of client feedback are part of continuous nutritional care development at all levels of the organisation. Client satisfaction measurements carried out between service providers (such as a nutrition therapy unit questionnaire for wards and outpatient clinics, hospital pharmacy or food services surveys for all units) enhance interaction between units and help identify development targets.

As nutritional care requires cooperation between several actors, joint agreement on its objectives, methods, division of work and resources is important. A nutritional care monitoring system is created for the purposes of monitoring, evaluation, development and knowledge-based management. Indicators for organisation-level nutritional care include recorded weight information, the number of nutrition risk assessments performed and the actions taken based on them, the use of oral nutritional products and ordering an enriched diet (see Regional and national monitoring and supervision of nutritional care p. 278).

Social and health care services submit reports on near misses or incidents and adverse events affecting patients. These notifications promote patient safety and help develop operations. Such events should be reported whenever the observer feels that intervening could make the activities safer.

Feedback and development ideas are also received from permanent client feedback systems. Quality work is the foundation for development and management. Quality monitoring and development results should be made visible, for example, as a summary in the management reporting portal.

In nutritional care, patient safety could be compromised, for example, when

- patient does not receive the appropriate meal (for example, insufficient intake of energy or protein)
- patient's fasting time (time without food) has prolonged
- patient who requires texture-modified diet, receives food with wrong texture
- patient's pre-procedure diet was not implemented (for example, bowel preparation, VLCD or low iodine diet)
- patient receives the wrong food due to, for example, inadequate recording or distribution error (for example, the presence of an avoidable allergen in the food)
- implementation of enteral nutrition or selection or dosage of oral nutritional supplement is incorrect
- implementation of parenteral nutrition is incorrect
- improper storage of a meal or foodstuff, in which case microbiological safety is compromised.

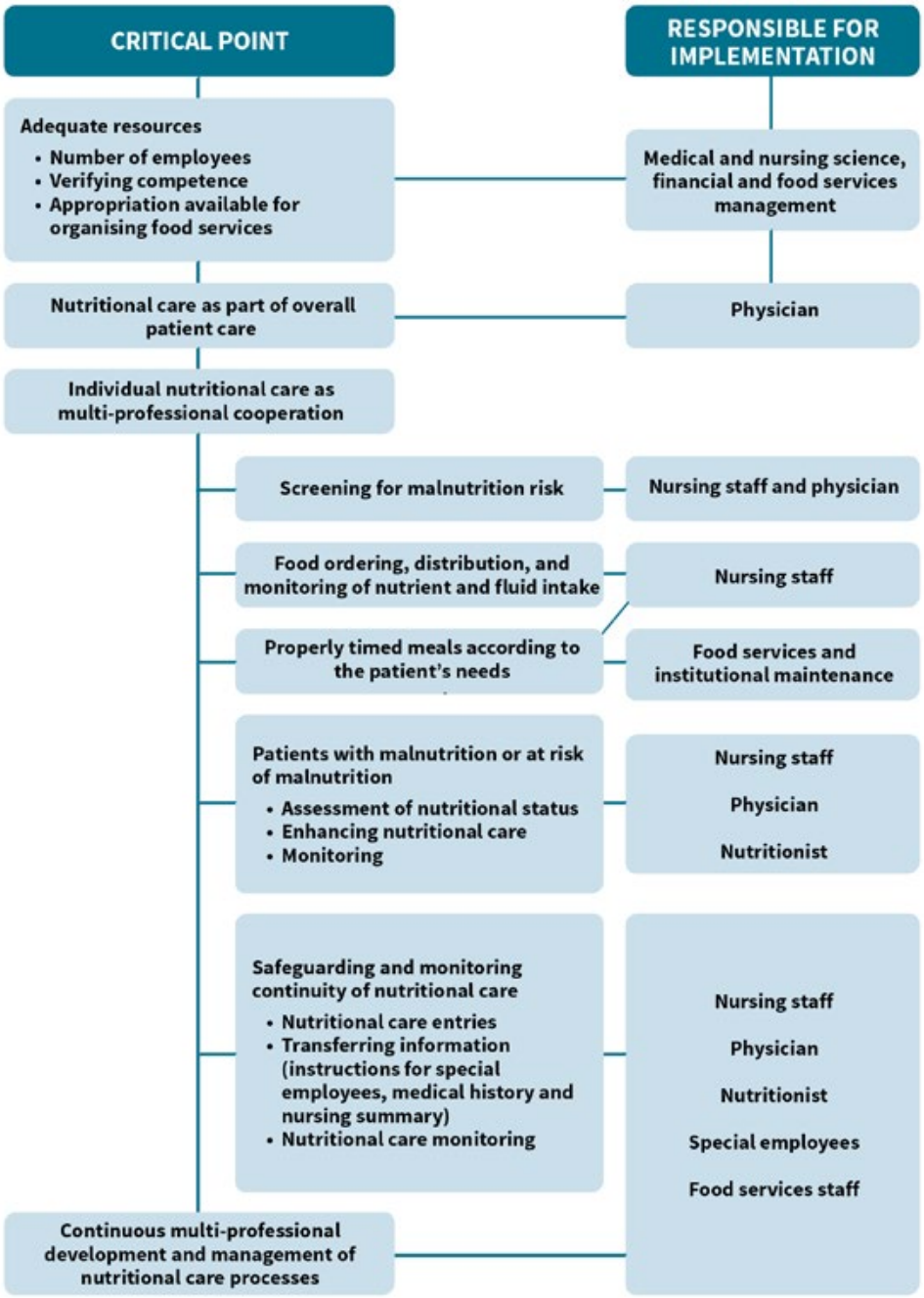

Figure 6. Critical points in nutritional care and the people responsible for implementation
Source: Adapted from Recommendation of nutritional care 2010.

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Nutrition counselling as part of nutritional care

- The patient has the right to receive evidence-based information on health-promoting nutrition and nutritional care that necessary because of a disease or condition or can prevent these.
- The aim of nutrition counselling is to provide the patient with the necessary information and support their ability to take responsibility for their health and the treatment of their illness.
- Counselling can be provided in an individual or group setting as in-person meetings or using visual remote connection applications, telephone or digital applications.
- Implementing high-quality and effective nutrition counselling requires special nutrition expertise and usually requires additional training.

Principles

Nutrition counselling and nutrition therapy are implemented according to the Health Care Act (1326/2010): as high-quality, equal, properly timed, client-oriented, planned and agreed cooperation between different health care actors.

Nutrition counselling takes the objective of nutritional care and the patient's cognitive situation into account. If the patient is unable to assimilate the counselling, it is given either to a family member, the guardians of a minor or a health care professional who is responsible for the treatment. In addition, the patient or guardian of a minor is provided with the information and skills required to implement nutritional care in practice. Information is provided in a timely manner and its impact is monitored, reviewed and updated as necessary according to changes in the patient's condition or illness. Counselling is provided in a calm space, sufficient time is reserved for it, and the patient's ability to assimilate the information provided is taken into account.

The patient's clinical need and also the nutrition competence of the counselling professional have an impact on how nutrition-related patient counselling can be implemented (see the section Implementation on p. 64 and Figure 7 p. 65 and Table 6 p. 67–69). When a patient's need for nutrition counselling is identified at an early stage, a health-promoting diet to, for example, prevent illnesses can be discussed using motivational interviews and mini-interventions. When a patient is diagnosed with a disease or other condition that requires particular attention to certain diet areas, they receive limited or extensive nutrition counselling from a health care professional who has sufficient nutritional competence. Patients who require nutrition therapy based on the agreed referral criteria are directed to nutrition therapy, which is provided by a nutritionist. Nutrition counselling is effective when administered in a patient-oriented manner and adapted to the individual situation of each patient. The evidence is particularly strong regarding the effectiveness of nutrition therapy provided at frequent intervals (see Nutritional care costs, cost-effectiveness and savings p. 34).

Nutrition counselling should be appropriately recorded in the patient information system. When the patient is discharged or transferred to a further treatment location, it is important to ensure that the patient and the further treatment location have sufficient information about nutritional care and the nutritional care plan.

Nutrition counselling as part of lifestyle guidance

The objective of lifestyle guidance is to maintain and promote health and prevent diseases. Nutrition counselling implemented during lifestyle guidance is a dialogue in which objectives are set together with the patient. Patients are provided with sufficient information on what changes in their diet and other lifestyles can achieve. The process begins by setting 1–2 change goals based on discussion with the patient. These are updated during follow-up visits and new goals are set. Implementation of lifestyle changes requires several sessions during a period of 6–12 months.

A successful counselling situation requires good interaction skills and an understanding of the psychological mechanisms related to eating behaviour and changing it. The guidance utilises a motivational working method (for example, the motivational interview method) and takes into account the patient's willingness to change, eating habits, food culture and previous dietary counselling.

Nutrition counselling as part of nutritional care for diseases

When a patient is diagnosed with a disease or condition requiring nutritional care, the patient is informed of the significance of nutritional care and the nurse provides at least limited nutrition counselling (see the next section Implementation). In accordance with the patient's needs and the agreed referral criteria and division of work, the patient is directed to extensive nutrition counselling, for example, to a diabetes nurse or to nutrition therapy provided by a nutritionist.

In connection with acute illness or trauma in the hospital, a physician determines the patient's need for nutritional care and, if necessary, requests consultation with a nutritionist to plan and guide the patient's nutritional care. The unit can also set criteria for when a nutritionist can prepare a nutritional care plan without a separate consultation request. The need for nutritional care and the methods (such as placing a PEG tube) are justified to the patient if they are able to receive information and also to the family, especially if the patient is unable to take in the information. Actual nutrition counselling is given to the patient and, if necessary, to their family when the patient's condition makes it possible to for them to assimilate the information. Sufficient time should be provided for counselling and it is important to ensure that the patient is sufficiently alert and in good condition. Surgery, intensive care and strong painkillers cause confusion and forgetfulness, so information should be provided gradually and repeated sufficiently. If necessary, counselling is only given to the nursing staff who are caring for the patient.

The concern that guardians of children and young people feel about their child also affects their ability to assimilate information. If a disease makes it necessary to

implement changes in nutrition that are unpleasant for the patient, the medical basis for the changes being made should be explained while listening to, encouraging and motivating the patient and their family.

It is recommended that a family member take part in the counselling as the time of discharge approaches, especially when the patient is in poor physical condition, under psychological stress or elderly. Outpatient monitoring is necessary if nutritional care involves several dietary changes and if changes in nutritional care are expected as the recovery progresses, counselling should be reviewed, or the patient's nutritional status is vulnerable and there is a need to monitor implementation of nutritional care at home.

Implementation

Nutritional care and counselling are a matter of multi-professional cooperation that requires the competence of each health care professional. It is important for the health care professional treating the patient to identify the scope and level of nutrition counselling required by the patient and be able to support the patient in terms of sparking motivation and a change in behaviour. Health care professionals at each site agree on the division of work in nutrition counselling and uniform practices. A licensed nutritionist is the only health care professional with a master's degree in nutrition. There is not a lot of nutrition included in the basic education for nurses and physicians, and increasing that competence requires additional training.

Implementation of nutrition counselling requires nutrition competence and food knowledge on the part of the health care professional as well as an understanding of counselling methods and materials (Table 6 p. 67–69). The counselling is evidence-based and includes listening to, understanding, supporting and encouraging the patient as well as assessing their resources and utilising strengths. Different levels can be identified in nutrition counselling (Figure 7). Table 1 provides a practical example of the content of counselling at different levels and the nutritional competence required by it.

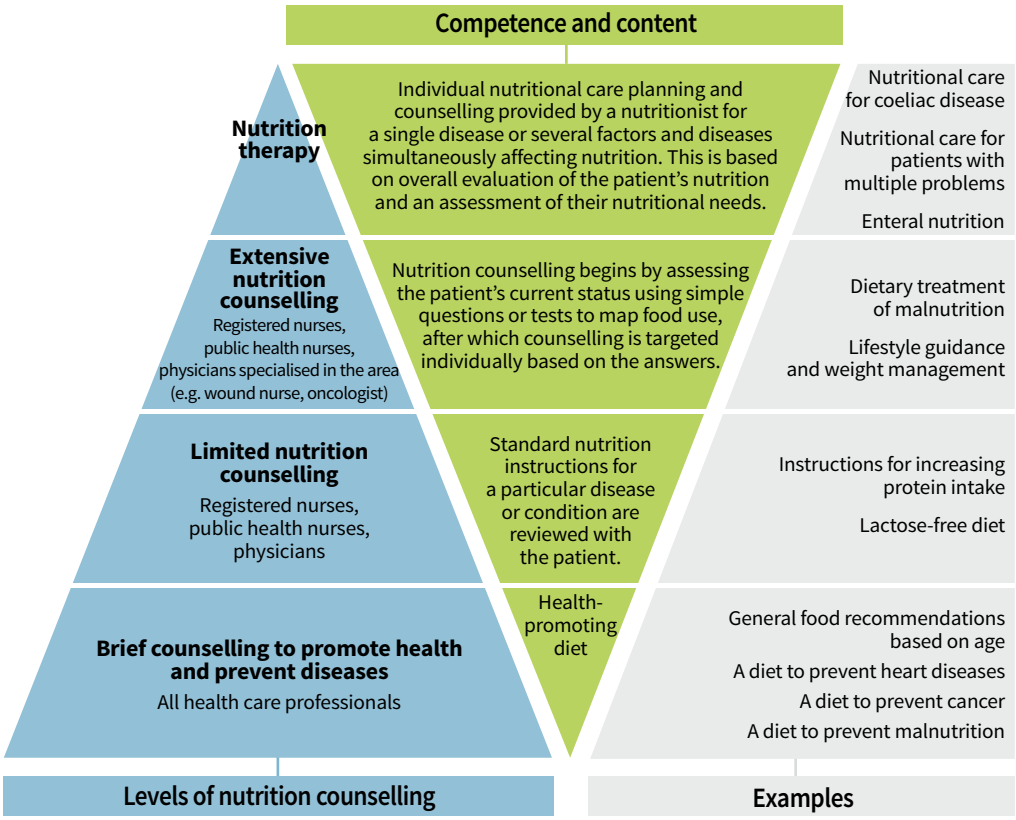

Figure 7. Levels of nutritional competence and counselling.

Levels of nutrition counselling

Brief nutrition counselling to promote health and prevent diseases

The aim of discussing the topic is to stimulate and strengthen the patient's motivation and raise the patient's awareness of a health-promoting diet and the prevention of malnutrition or the significance of nutrition when treating a disease. Nutrition should be discussed on a general level without guiding the patient make individual changes to their diet. For example, this can be a conversation that encourages the patient to eat regularly and in a balanced manner using the plate model and food triangle. The patient can also be referred to high-quality and reliable material, such as Health Village materials and digital self-care pathways as well as materials provided by various patient organisations. The basic assumption is that all health care professionals are familiar with the principles of health-promoting diets and preventing malnutrition, and are able to discuss these with the patient in an encouraging manner. The discussion may reveal the patient's need for more detailed and extensive counselling. In this case, the patient should be referred to either limited or extensive nutrition counselling or nutrition therapy, depending

on their needs. For example, a physician or speech therapist observes the need for nutritional care and justifies its significance to the patient before referring the patient to actual nutrition counselling or therapy.

Limited nutrition counselling

The patient receives nutrition counselling during lifestyle guidance or in a disease-related situation, the objective of which is for the patient to understand why they should pay attention to their diet and which areas they should focus on. Limited nutrition counselling provides general instructions about dietary changes required to treat a disease, without taking into account the patient's current eating habits and individual needs arising from them. The diet instructions agreed and approved inside the organisation (for example, principles of a diet to prevent malnutrition, reducing salt intake) should be used during counselling. Limited nutrition counselling requires that the counsellor is familiar with nutritional issues in their speciality, and it is part of the work of cancer nurses, diabetes nurses, wound nurses, public health nurses and physicians.

Extensive nutrition counselling

Nutrition counselling given to the patient for a specific illness or situation, which takes into account the patient's previous eating habits, preferences, values, clinical condition (e.g. nutritional status) and nutrition needs. The patient's condition is assessed using simple food use questions (diet index) or tests (are you eating appropriately, salt, fat and fibre surveys) or screening methods for malnutrition risk (NRS 2002, MNA, STRONGkids). Based on these, the objectives should be set so that the patient understands the significance of nutritional care as part of treating or managing their illness. The counselling starts by highlighting things that are already going well in the diet and encouraging their maintenance. Based on discussions with the patient, both quantitative and qualitative concrete and practical changes should be made to the food choices. Based on these, the general nutrition instructions are modified to meet the patient's needs. Extensive nutrition counselling requires that the counsellor is familiar with the key nutritional care matters in their specialist field, has sufficient food knowledge and the ability to put this information into practice in the patient's dietary guidance.

Nutrition therapy

Nutrition therapy is an entity implemented by a nutritionist that includes the following:

- overall assessment of nutrition:
  - nutritional status, weight development, growth data and laboratory test results
  - quantitative and qualitative assessment of nutrient intake
  - other basic information needed when planning nutritional care (see p. 49)
  - consideration of swallowing capacity and other symptoms and factors that interfere with eating and nutrition (see p. 50)
- individual assessment of nutritional needs based on an overall nutrition assessment

- nutritional care planning based on an overall assessment of nutrition and nutritional needs, taking into account any diseases that require nutritional care and the diets required to treat them
- counselling for the patient, a family member or a health care professional responsible for the patient's nutritional care that takes into account the patient's individual condition and the situation in the home or other further care
- monitoring the implementation and effectiveness of nutritional care.

In addition to a description of the multi-professional nutritional care process (Appendix 10 p. 298–299), the process for starting nutrition therapy is described in more detail in Appendix 12 p. 303.

If necessary, the nutritionist guides other health care professionals (for example, a nurse) to implement the nutritional care planned for the patient (e.g. improving nutrient intake during inpatient care). A patient with one or more different diseases requiring nutritional care can be treated in nutrition therapy by combining different special diets, food textures and nutrition delivery routes. With consideration to the patient's overall situation, an individual nutritional care plan is used to ensure adequate nutrition at the nutrient and food level by maintaining or correcting the nutritional status and promoting health or treating a disease/diseases.

Table 6. An example of the different levels and content of counselling: nutrition counselling when treating elevated blood pressure.

Counselling level	Condition of an imaginary patient	Example of counselling content	Nutrition competence of the professional
Brief counselling related to promoting health and preventing diseases	The patient has slightly elevated blood pressure with no related diseases	Discuss the importance of a health-promoting diet when treating elevated blood pressure, ask the patient to complete, for example, the Finnish Heart Association's "Testaa suolan saantisi" (Test your salt intake) test at home and provide instructions for selecting foods containing less salt.	Knows the principles and nutrition recommendations of a health-promoting diet for a healthy person by age group (e.g. maximum salt intake 5 g/day). Knows what reliable counselling material has been agreed for use with patients in this situation (e.g. salt test).

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Counselling level	Condition of an imaginary patient	Example of counselling content	Nutrition competence of the professional
Limited nutrition counselling	The patient has clearly elevated blood pressure and overweight during repeated measurements. Evaluate the possibilities for non-pharmacological treatment of blood pressure and the need to start blood pressure medication.	Discuss non-pharmacological treatment of blood pressure, such as a low-salt diet that includes plenty of vegetables and the importance of weight loss. Give the patient written instructions for a diet that reduces blood pressure.	Knows the principles of a diet that reduces blood pressure and non-pharmacological forms of treatment, and can use ready-made written instructions to guide regarding, for example, matters related to the implementing a diet that contains less salt and more vegetables. Knows the importance of weight management when treating blood pressure.
Extensive nutrition counselling (provided by a health care professional who is not a nutritionist)	The blood pressure level is not satisfactory despite medication and limited nutrition counselling provided earlier and/or the patient has e.g. a metabolic syndrome.	Examine areas such as the patient's meal rhythm, consumption of vegetables, fats and salty foods by means of an interview and, for example, tests to determine salt use or the quality of diet fat. Based on the results, plan the necessary individual changes to the patient's current diet together with the patient.	Can identify qualitative and quantitative factors in the patient's current diet that increase blood pressure at the food level and recommend the necessary concrete changes to reduce salt intake. Is knowledgeable about nutrition issues related to, for example, heart disease, but not necessarily those related to nutrition counselling in other specialities. Is familiar with the disease-specific recommendation and knows which foods are suitable for the diet.

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Counselling level	Condition of an imaginary patient	Example of counselling content	Nutrition competence of the professional
Nutrition therapy (nutrition counselling provided by a licensed nutritionist)	The patient has had elevated blood pressure, overweight and, for example, renal failure for a long time.	Assess the patient's nutritional status and nutrient intake based on a food diary/ extensive nutritional anamnesis, determine the nutrition need required by the clinical condition, and based on these, provide guidance on individual nutritional care suitable for different diseases.	Can modify the patient's current diet with regard to several different nutrients to suit the patient's clinical condition and adapt it into a diet entity suitable for the patient's habits and preferences. Requires the qualification of a licensed nutritionist.

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Monitoring and recording of nutritional care

- The requirements for systematic implementation of the patient's nutritional care as well as monitoring and assessing impacts are systematic recording of details in patient information systems, programs integrated with those system and the transfer of information to further care.
- The patient's history and current status, nutritional care plan, nutritional care and its monitoring must be recorded in the patient information system.
- Monitoring of the care requires an assessment of nutritional status and nutritional care carried out at appropriate intervals.
- High-quality and effective nutritional care requires that diagnoses and actions related to nutrition are recorded in the systems using standard codes, and use of the accumulated register data in knowledge-based management.

According to the Ministry of Social Affairs and Health's Decree on Patient Documents (94/2022), patient documents must include the information that is necessary and sufficient to ensure the organisation, planning, implementation and monitoring of good patient care. Health care organisations and professionals are responsible for ensuring that the information generated during activities is appropriately stored in patient documents in the manner required by regulations.

The patient document entries must indicate the source of information if that information is not based on the professional's own observations or if information other than that concerning the patient is entered in the patient documents. For example, whenever a patient's weight is recorded, the source of information (weighed/reported by the patient) is also indicated.

Structured patient records

This refers to using standardised structures to collect, record and store information in the patient and client information system and the national electronic information system service.

Standardised data ensures the availability of high quality and comprehensive information. A structured format makes maintaining information and exchanging it between different organisations more efficient, which is important for the continuity of care. From the patient's perspective, structured patient records reduces ambiguities in the interpretation of information between the patient and the professional.

Only recorded information can be used

The patient's nutritional status and areas of treatment are recorded in the patient information systems (Table 7). A checklist for the first visit and follow-up evaluations make the unit's activities more efficient. In multi-professional nutrition care, it is important that the indicators being monitored, such as the screening result for malnutrition risk, have a designated and easily accessible location in the patient information system so that changes in the indicators can be monitored.

Table 7. Recording nutritional care in the patient information system

- Diagnoses[1]
- Weight and height measurements and further results obtained from them, such as BMI, growth curve
- Risk of malnutrition (method used, risk score, verbal result (slight/moderate/severe risk))
- Nutritional status and possible malnutrition
- Laboratory test results related to nutritional care[2,3]
- Nutrition need
- Appetite
- Symptoms that interfere with eating
- The patient's subjective condition
- Diet and portion size for ward patients
- Nutrient intake (see Assessing nutrient intake and nutritional quality of a diet)
- Nutritional care targets
- Nutritional care plan
- Nutrition counselling
- A plan for monitoring nutritional care.

1 Including diagnoses related to nutritional status or changes in it
2 If necessary
3 For example, P-K, P-Na, fP-gluc, P-Ca-ion, P-Pi, P-AFOS, fP-chol, fP-chol-LDL, fP-chol-HDL, fP-Trigly, B-PVK, P-Ferrit, P-TfR, P-Alb, S-Prealb, P-CRP, fS-folate, S-B12-TC2, S-D-25, S-Zn

Monitoring the effects of nutritional care

Indicators for the effect of nutritional care include:

- the patient's experience of changes in their condition
- change in nutrient intake
- weight changes, for example, weight gain, slowing of weight loss
- change in the screening result for malnutrition risk
- change in nutritional status
- occurrence of symptoms that interfere with eating (poor appetite, constipation, vomiting)
- changes in laboratory test results.

In addition to those listed above, the length of a treatment or hospitalisation, time of return to hospital, and quality of life indicators are used to measure the effectiveness of nutritional care.

Recording and monitoring nutrient intake

Monitoring of nutrient intake is part of treatment for all ward patients, and it is very important when treating patients with malnutrition and those at risk of malnutrition (see Meals in the ward p. 73).

In addition to monitoring the amount of food consumed, the actual amounts of oral nutritional supplements, enteral nutrition products and parenteral (intravenous) products used are documented. With regard to patient treatment and calculating nutrient intake, it is important to accurately mark the brands of the nutritional products.

Assessing nutrient intake and nutritional quality of a diet

A nutritional anamnesis is used to examine the meal rhythm and the quality and amounts of food and beverages consumed. This is done by means of an interview or food diary. In addition to a good knowledge of foodstuffs, the person compiling the nutritional anamnesis needs the skills to evaluate the quantities of food eaten. A high-quality nutritional anamnesis makes it possible to assess energy and nutrient intake using a food calculation program suitable for clinical use. When interpreting the result of the nutrient intake calculation, it is important to take the quality of the nutritional anamnesis and the patient's individual situation into account. Food use can be examined in a less rigorous manner by means of, for example, the Healthy Diet Index (Lindström J et al. 2021) or using test forms to determine salt or fibre intake or dietary fat quality (for example, from the Finnish Heart Association). The quality of diet in preschool children can be assessed using the indicator developed for it (Röytiö H et al., 2015).

Recording nutritional care

Recording a patient's information in the patient information system always requires that physicians and other health care professionals have a reason for the visit, which in the hospital means recording the diagnosis (ICD-10 International Classification of Diseases) and the reason for primary health care appointments (ICPC-2 International Classification of Primary Care). In the hospital, health care professionals without medical training record the reason for a visit using an ICD-10 diagnosis previously made for the patient or in accordance with the agreed practice in the unit. There may be one or more reasons for a single visit. Reasons for visits are used, for example, when calculating the operational efficiency of a hospital. Recording diagnoses related to nutrition and malnutrition (Appendix 5 p. 291, Appendix 6 p. 292, Appendix 8 p. 296) and diagnoses of diseases requiring nutritional care as well as nutrition counselling measures (main codes Appendix 13 p. 304–305) provides the foundation for statistics. These can be combined with other information and used, for example, in the allocation of resources and when evaluating sufficiency.

Use of the Finnish Institute for Health and Welfare's procedure codes is recommended when recording nutritional care. Appendix 13 presents the nutrition counselling procedure codes (OAB codes) and their areas of use (see also Regional and national monitoring and supervision of nutritional care p. 278).

Recording and verifying planned follow-up treatment

The actual nutritional care and follow-up care instructions as well as malnutrition or its risk should be reflected in the physician's final evaluation and in the summary of nursing work. In addition, instructions prepared for nutritional care and its monitoring are forwarded to the further treatment location.

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4

MEALS IN THE WARD AND ORAL HEALTH

Arrival discussion and determination of diet, food texture and portion size

- A thorough arrival discussion determines, for example, food restrictions, dislikes and preferences, the condition of the mouth and teeth, and any other problems related to eating and eating.
- A patient with malnutrition or who is at risk of malnutrition needs an enriched diet.
- Meal preferences and the suitability of portion size are checked daily for patients with malnutrition and 2–3 times a week for other patients. Patient requests are usually easy to implement.
- Screening for malnutrition risk must be performed within 1–2 days of arrival at the hospital and at least once a week after that and an enriched diet ordered for patients at risk of malnutrition.

In connection with planned treatment periods, a form or a link to the electronic system may be sent to the patient in advance to collect the arrival discussion information. The nursing staff checks this information at the start of the treatment period.

If the information has not been collected in advance, the nursing staff will have an arrival discussion when the patient arrives for treatment. If the arrival discussion cannot be done with the patient, the information is collected from a family member.

The arrival discussion clarifies the following:

- Weight, height, weight development
- Risk of malnutrition and need for an enriched diet (NRS 2002 ≥ 3)
- Condition of the mouth and teeth
- Swallowing ability
- Appetite (Appendix 9 p. 297)
- Size of portion ordered
- The diet required by the disease and unsuitable ingredients
- Food texture
- Factors affecting the diet, such as:
  - Information needed in the unit for the food order (for example, beverage and bread)
  - preferred foods for patients with poor appetite
  - ethical and religious aspects
- Need for assistance with meals
  - evaluate motor skills in relation to successful meals, such as the joint mobility in the hands and tongue function
- Preferred meal location
- Need for meal aids
- Use of food supplements and natural products.

Activities in the ward

Information on the patient's diet is communicated to food services via patient information systems and food services programs, so the information obtained based on the arrival discussion and the patient's clinical condition must be carefully documented (see Figure 8, p. 75). Support service personnel, primarily institutional cleaners, order separately offered products to the wards, such as beverages, bread toppings and fats. A nurse and institutional cleaner are both involved in the food distribution situation. The food for patients who require a special diet is always served by a nurse. Further questions related to the diet of a patient with food allergies is available in the Food allergies section (p. 162).

Factors affecting the diet and meals, such as:

- ethnic and religious aspects.

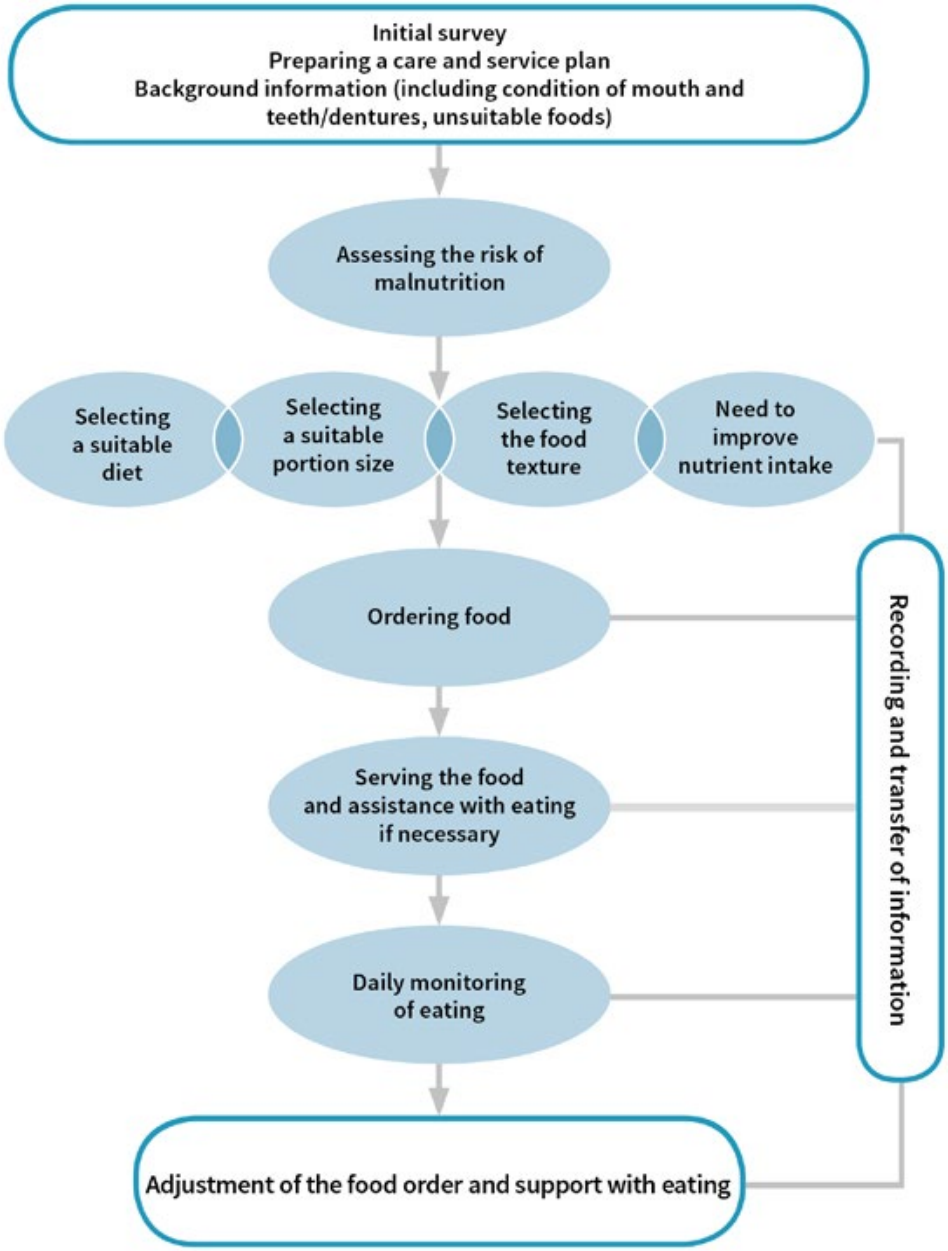

Figure 8. Choice of food and ordering
Source: National Nutrition Council. 2020. Vitality in later years – food recommendation for older adults

Assessing the portion size and ordering food

- The energy level of hospital food must meet the patient's individual needs (Table 8). A suitable portion size should be discussed with the patient (p. 78). The selection is based on a picture showing food portions of different sizes. The amount of energy consumed during the day consists of meals and snacks.
- In hospital care, the aim is usually to maintain the current weight. If the patient is overweight or obese, careful consideration should be given to whether the time is appropriate for weight loss (see Table 9). The goal for an underweight person may be to maintain their weight, stop weight loss or to gain weight.

Table 8. Assessing the amount of energy needed by women and men (kcal/day, MJ/day)[1]

	Women under 60		**Women** aged 60 or over	
Current weight kg	Patient confined to bed kcal/day (MJ/day)	Mobile patient kcal/day (MJ/day)	Patient confined to bed kcal/day (MJ/day)	Mobile patient kcal/day (MJ/day)
≥100	1,800 (7.6)	2,200 (9.2)	1,800 (7.6)	2,000 (8.4)
95		2,000 (8.4)		
90			1,600 (6.7)	
85				1,800 (7.6)
80	1,600 (6.7)	1,800 (7.6)		
75				
70			1,400 (5.9)	1,600 (6.7)
65				
60	1,400 (5.9)	1,600 (6.7)		
55				
50				

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	Men under 60		**Men** aged 60 or over	
Current weight kg	Patient confined to bed kcal/day (MJ/day)	Mobile patient kcal/day (MJ/day)	Patient confined to bed kcal/day (MJ/day)	Mobile patient kcal/day (MJ/day)
≥100	2,200 (9.2)	2,600 (10.9)	2,000 (8.4)	2,200 (9.2)
95		2,400 (10.1)		
90			1,800 (7.6)	
85	2,000 (8.4)			
80		2,200 (9.2)		2,000 (8.4)
75			1,600 (6.7)	
70	1,800 (7.6)			1,800 (7.6)
65		2,000 (8.4)		
60			1,400 (5.9)	1,600 (6.7)
55	1,600 (6.7)	1,800 (7.6)		

1 Adapted from publications by Fogelholm (2006) and Thomas & Bishop (2007). The energy intake reference values have been calculated on the basis of weight, gender and age-dependent basic metabolism, mealtime energy consumption and physical activity, using the factors of 1.1 for patients confined to bed and 1.25 for mobile patients. A mobile patient refers mainly to a person moving around in the ward. The table does not take into account the increase in nutrition need caused by illness, such as a catabolic disease.

Table 9. Basic diet energy levels

Portion size		**Amount of energy kcal/day**	**Amount of energy MJ/day**	**Suitability**
S	Small	1,400–1,600	5.9–6.7	Suitable for a small woman who is not very active
M	Medium	1,800–2,000	7.6–8.7	Basic portion size, suitable for most people
L	Large	2,200–2,400	9.2–10.0	Suitable for large persons*

* Individual energy need should be assessed for persons whose energy need is higher than the L portion size.

Portion size S:
1,400–1,600 kcal/day
(5.9–6.7 MJ/day)

The portion contains 425 kcal energy and 18 g protein

Portion size M:
1,800–2,000 kcal/day
(7.6–8.7 MJ/day)

The portion contains 600 kcal energy and 24 g protein

Portion size L:
2,200–2,400 kcal/day
(9.2–10.0 MJ/day)

The portion contains 700 kcal energy and 27 g protein

Implementation and monitoring of meals

- A regular meal rhythm supports health and promotes healing. In addition to regular meals and snacks, patients who need additional energy and have a poor appetite must have the opportunity to receive additional snacks regardless of the time of day. Children should be offered age-appropriate food that suits their taste.
- The presentation and serving of food in the ward as well as the attitudes of the staff and speech around food (the way of talking about food) affect the patient's eating experience. Nursing staff, hospital and institutional cleaners/multi-service employees and food services guide the patient's food choices by means of the range of food offered and its presentation.
  The patient should be given the opportunity to eat outside the patient room and bed.
- Nursing staff provide institutional maintenance and food services with up-to-date information about the patient's diet and possible changes in it (for example, food texture, fasting).
- The patient's food use should be assessed as part of screening for malnutrition risk (see, for example, Appendix 2 p. 287) and regularly monitored according to the care plan. The food use of a patient at risk of malnutrition is monitored daily according to the method agreed in the unit (see. p. 41 Instructions – Outpatient clinic patient and Ward patient). Fluid intake is monitored based on a physician's order.

Regular meals and length of night-time fast

Regular meals are a part of nutritional care. Each day, patients are served breakfast, lunch, dinner and an evening snack as well as 1–2 snacks. Social and health care units follow the meal rhythm, with consideration to cultural and individual habits.

A regular meal rhythm ensures sufficient nutrient intake. As children are not able to eat as much at a time as adults, even distribution of energy intake between main meals and snacks is particularly important (see Children and teenagers p. 263). Older adults are also unable to eat large portions at a time. As a result, it is also important for older people and those with a poor appetite to eat several times a day to ensure good nutrient intake.

The night-time fast may not exceed 11 hours (no more than 10 hours for those aged 70 or over), which is taken into account when planning when to serve the evening snack and breakfast. The purpose of limiting the length of the night-time fast is to minimise the catabolic response caused by fasting, which exposes the patient to malnutrition and weakens the muscle function.

Food hygiene safety is taken into account when storing and serving food (see Food hygiene in patient meals p. 116).

A recommendation for a daily meal rhythm and the distribution of energy intake are presented in Table 10. The work shifts of the ward staff, institutional maintenance and food services take the meal times of patients into account and make it possible to serve evening and night-time snacks or both.

Table 10. Daily meal rhythm and energy distribution of meals

Meal or snack	Time	Energy content/meal (% of total energy)
breakfast	7–9 am	15–20%
snack*	10 am	
lunch	11 am–1 pm	25–30%
snack	2–3 pm	10–15%
dinner	4:30–6 pm	25–30%
evening snack	8–9 pm	10–20%
late evening snack*	10 pm –	

* Served to the patient according to individual needs or to avoid an overly long night-time fast.

Drinks to satisfy thirst, snacks and the possibility of additional snacks

Tap water is the best beverage when thirsty. Water should preferably be taken directly from the tap. If there is no water point near the patients, water can be served from a jug. The water in the jug should be changed at least once a day. Provisions on the monitoring procedures for drinking water (household water) are specified in Ministry of Social Affairs and Health decrees.

In order to ensure sufficient nutrient intake, patients are given the opportunity to receive snacks outside the normal meal and snack times. The snack must be balanced, meaning that it contains all the energy nutrients. Snack options should be developed as cooperation between patients, ward staff and food services.

Based on patient requests, the wards can order products for patients with a poor appetite and those who need more intense nutritional care as well as older patients, children and breastfeeding mothers that include

- coffee, tea or cocoa with a snack
- yoghurt, curd milk or plant-based products used in a similar manner
- berries, fruit
- bread, margarine, cold cuts/plant-based products used in a similar manner
- self-made snacks (for example, milkshake, smoothie, berry quark, regional specialities)
- berry and fruit porridge
- oral nutritional supplements and puddings.

Serving hot meals to the patient outside regular meal times

When the patient is absent from the ward or needs to fast because of an examination or procedure during the normal meal time, it's better to not order the meal and then provide the patient with a meal consisting of different products (such as yoghurt, sandwiches and fruit) when they return to the ward. If the ward knows in advance that a patient's meal time will be postponed, the meal should be ordered cold if possible. When the food arrives at the ward, a cold meal is immediately moved to the refrigerator. Information about a cold meal should also be added to the patient meal card. When the patient is ready to eat, the portion should be thoroughly heated in a microwave oven. After heating, hot food must be served immediately. (See Food hygiene in patient meals p. 116).

A meal must not be stored at room temperature while waiting for the patient to eat.

Safe and pleasant meal situations for the patient as cooperation between nursing staff and institutional maintenance

Meals provided by food services are important highlights in the day in terms of maintaining nutrient intake, health, recovery and general well-being. For patient safety reasons, nurses are responsible for ensuring that the patient's diet is implemented during all meal stages, including food orders, food distribution and monitoring food use. In cooperation with institutional maintenance (hospital/institutional cleaners, multi-service personnel), a nurse monitors nutrient and fluid intake to the extent required by the patient's situation. The nursing staff is responsible for ensuring that meals are safe and pleasant (see the Info box p. 82).

The nurse is responsible for ensuring that each patient receives the correct food. The nursing staff and institutional care cooperate to:

- display the menu in the ward and tell the patient where to find it
- provide the patient with the chance to eat either in the ward's dining area or in their room
- ensure that nothing else is taking place in the space during meals
- turn off the television, radio and smart devices in the dining space, unless the patient particularly benefits from focusing on these devices while eating (for example, poor appetite, nausea, eating disorders)
- ventilate the dining area
- help the patient wash their hands before eating if necessary
- ensure a good eating position
- check the patient meal card before the patient starts eating and leave the card on the tray. In order to ensure patient safety, the patient meal card must be displayed on the tray throughout the meal.
- in centralised food distribution, remove the lid before taking the food tray to the patient
- in decentralised food distribution, dispenses the food in an attractive manner according to the plate model and the portion size
- explain what is being served and wish them a good meal
- explain the availability of single-serving spice and salt pouches as needed
- reserve enough time for meals and only remove the tray after has finished their meal
- assist with eating if necessary
- ask about appetite and how the food tastes
- ask whether the patient wants more food
- assess, report and record observations made during the meal situation (for example, how eating proceeds, amount of food eaten).

Monitoring food use and fluid intake

Eating and sufficient nutrient intake play an important role in physical, psychological and social well-being and rehabilitation. The food use of persons in hospital or institutional care should be actively monitored (see Appendix 14 p. 306) because insufficient food intake along in combination with an increased nutrition need is the most important cause of malnutrition. Appetite can be assessed using the SNAQ method (Appendix 9 p. 297).

Assessing food use is part of screening for malnutrition risk, nutritional status assessment and diagnosis of malnutrition. Assessment of nutrient intake (Appendix 2 p. 287) as part of the screening for malnutrition risk is performed upon arrival at the unit (NRS 2002, Appendix 1 p. 286, STRONGkids, Appendix 7 p. 294) and on a weekly basis after that for patients with no risk of malnutrition. The food use of patients at risk of malnutrition is monitored daily as required by the patient's situation (see Instructions – Ward patient p. 41), for example, using the Monitoring food and fluid intake form (Appendix 14 p. 306). The information should be recorded in the patient information system. The attending physician determines whether monitoring of fluid use is required.

The food use monitoring list must be carefully completed in order to make it useful in the patient's nursing. The list should show the diet and portion size ordered for the patient as well as what fluids the patient has been drinking. The volume/size of the dishes should be indicated and the dispensing should also be standardised in decentralised food distribution so that the intake of food and fluids can be assessed reliably. Illustrated material can be used to support the monitoring of food use and fluid intake. Insufficient eating for 2–3 days (≤ = 50% of the need) in patients who are at risk of malnutrition requires consultation with a nutritionist.

▶ SOURCES p. 350

Consideration of oral health in nutritional care

- The goal in patients of all ages, regardless of the reason and length of the care period, is a healthy and functional mouth and prevention of oral disease. Good self-implemented or assisted oral hygiene and well-maintained dentures play a key role in achieving good oral health and preventing malnutrition.
- In both long and short-term care periods, difficult illnesses and the related problems may require urgent consultation and treatment by an oral health care professional.
- Sensitive oral mucous membranes can make brushing teeth and cleaning between them challenging and many toothpastes and other oral treatments may cause a stinging sensation. An oral health professional can also provide advice on the best way to perform oral cleaning and which substances to use in these situations.
- A disease or its nutritional care may occasionally require a compromise in terms of oral health, such as more frequent consumption of carbohydrate products. In that case, it's a good idea to consult an oral health professional in order to find enhanced methods to prevent oral disease.
- During a long care period, it may also be necessary to have an oral health care professional examine the patient's oral health situation, check the condition of removable dentures and provide appropriate care.

Links between oral diseases and other diseases

- The oral bacteria of a person in poor condition can enter the blood circulation and cause a general or distant site infection. The movement of inflammatory mediators into the blood circulation is also stressful to the body.
- Oral infections often prevent many medical procedures (for example, joint replacements and other surgical procedures that involve placing foreign objects in the body).
- Diabetics have more oral problems than non-diabetics, especially periodontitis (gum disease), gingivitis (gum inflammation) and fungal infections.

A link has been found between inflammatory oral diseases, such as periodontitis, and many common diseases, such as cardiovascular disease, stroke, rheumatic diseases and Alzheimer's disease, and possibly also to the low birth weight in children.

Daily oral hygiene

Brushing the teeth twice a day with fluoride toothpaste and cleaning between the teeth is a basic requirement for good oral health. Dental plaque that accumulates as a result of the poor oral hygiene is the primary cause of oral diseases, such as gingivitis (gum inflammation) and the resulting periodontitis and caries (cavities in the teeth). Poor oral and denture hygiene is often the cause of yeast infections in the mouth among denture users.

If the patient has difficulty keeping their mouth and teeth clean due to illness or its medication, impaired functional capacity (physical, cognitive) or young age, it is a good idea to consult an oral health professional who can provide advice concerning the implementation of assisted oral hygiene. They can also provide guidance on the use of additional fluoride if the situation requires enhanced caries prevention.

The oral health of an intensive care patient who is receiving enteral nutrition or on a ventilator must be ensured by implementing daily oral hygiene, as oral bacteria continues to increase even though nutrition is not consumed orally. Effective oral hygiene is known to prevent pneumonia in intensive care patients.

Dry mouth

The perceived feeling of dry mouth (xerostomia) and diminished secretion of saliva (hyposalivation) can be caused by various diseases and conditions, such as anorexia, malnutrition, diabetes, smoking, inhalation through the mouth, and dehydration of the body. Many individual medicines used to treat diseases and conditions, simultaneous use of several medicines, and the inhaled oral sprays used to treat asthma also dry the mouth. Radiotherapy in the head and neck area as well as autoimmune diseases, such as Sjögren's syndrome, also affect saliva secretion.

Many oral problems become more common as a result of dry mouth:

- greater development of caries damage
- increased risk of yeast infection in the mouth
- removable dentures are less likely to remain in place
- increase in oral mucous membrane problems
- speaking and eating become more difficult
- deterioration in sense of taste
- increased swallowing difficulties.

Temporary or long-term dry mouth can be alleviated by ensuring sufficient water intake and regularly wetting the mouth with, for example, edible oil or sensitive and dry mouth products available from a pharmacy (moisturising gels and oral sprays). An oral health professional can provide advice on this matter. For more information, see https://www.hammaslaakariliitto.fi/fi/suunterveys/suun-sairaudet-ja-tapaturmat/hampaiden-ja-suun-sairaudet/kuiva-suu#.XZb3yGZS-Uk (in Finnish)

Nutrition and caries

Key elements in managing caries and preventing cavities in the teeth are:

- restricting the frequency of foods and beverages containing fast-acting carbohydrates, such as sugar
- scheduling consumption of these products in connection with regular meals https://www.hammaslaakariliitto.fi/fi/suunterveys/yleistietoa-suunterveydesta/ravinto-ja-suunterveys/terveelliset-ruokatottumukset#.ZF6QvC1Dy52 (in Finnish)
- regular meal rhythm and avoiding snacking – limiting acid attacks to 6/day
- water as a drink to quench thirst
- good oral hygiene using fluoride toothpaste, twice a day according to the recommendations
- replacing sugar for sweetening with non-cariogenic sugar alcohols (for example, xylitol, sorbitol), stevia and other sweeteners. The use of these products does not increase cavities in the teeth.

Sucking on sweets that are sweetened with xylitol or sorbitol or chewing gum also stimulates saliva secretion. Xylitol can prevent cavities. If it causes stomach problems, it is a good idea to reduce the doses and use it to the extent allowed by the symptoms. Erythritol is used as a replacement for sugar and other sweeteners and is less irritating to the stomach than xylitol or sorbitol.

Sugary and also sugar-free, artificially sweetened beverages and many flavoured bottled waters contain acids and expose dental enamel to erosion. In particular, acidic products include soft drinks, energy and sports drinks, various juices, several flavoured waters and so-called well-being drinks, as well as many types of fruit. Erosive wear of the teeth is particularly common in patients with eating disorders, especially if the symptoms are associated with vomiting. Avoiding frequent consumption of acidic products and snacking can prevent and slow erosion. Foods or beverages containing calcium, such as cheese and milk, reduce erosion when consuming acidic foods. The treatment of erosion is a long-term process and mainly takes place in primary health care.

Nutrition and the health of other oral tissues

High-energy foods with poor nutrient density, such as fatty foods, sauces, sweets, pastries and low-fibre bread, may also promote inflammation in oral tissues. A health-promoting diet that complies with nutritional recommendations helps with the management of overall oral health.

Following a diet based on nutritional recommendations and ensuring sufficient intake of antioxidants may be useful in preventing the prevention of gingivitis and periodontitis. Adequate intake of vitamin C, magnesium and calcium as well as docosahexaenoic acid (DHA) maintain the health of periodontal tissue. Although there is conflicting evidence concerning the importance of vitamin D for oral health, adequate vitamin D intake combined with the recommended calcium intake may protect against tooth loss and improve the health of the periodontal tissue.

A deficiency in vitamin B_{12} and folate due to poor absorption or inadequate nutrition is common especially among older adults (>20%). Signs of pernicious anaemia can be a burning sensation in the mouth, the surface of the tongue becoming smooth (loss of lingual papillae), redness in the mucous membranes (erythema), mucous membrane ulcers (not related to the use of removable dentures), or as ulcers in the corners of the mouth.

SOURCES p. 350

5

PROMOTING HEALTH AND SUSTAINABILITY THROUGH MEALS AND FOOD SERVICES

Health-promoting hospital food

Hospital food is based on a health-promoting, socially and environmentally sustainable diet as defined in the national nutrition recommendations[4].

- The amount of energy in the food being served should correspond to energy consumption.
- Food should be balanced and appetising.
- The diets needed to treat illnesses should be ordered on the basis of the patient's individual situation and the nutritional care plan. The availability of special diets, ordering practices, practical implementation, delivery, and monitoring and evaluation of implementation should be agreed in cooperation with food services. Based on the guidelines for nutritional care, these are described in detail in the organisation's internal nutrition manual or a similar document. The division of responsibilities for implementation is specified in the service agreement and service description.

4 National Nutrition Council. Terveyttä ruoasta – suomalaiset ravitsemussuositukset (Finnish nutrition recommendations for adults), 2014.

- **In addition to the nutritional needs of meals, the psychological and social significance of food and meals, the possibility of interaction or the desired privacy when eating, as well as the impact that the illness and the resulting concern has on appetite, should be taken into account when organising hospital meals.**

The national nutrition recommendation provides a suitable basis for hospital food when portion size is selected so that it meets the patient's energy needs. The diets needed in nutritional care should be planned according to the disease and the requirements set by its treatment. Also in this case, the aim is the most balanced and varied diet as possible within the scope of restrictions and modifications made necessary by the treatment. (see Appendix 15 p. 307).

A basic diet in accordance with the nutrition recommendations is suitable for overweight patients, and those with elevated blood pressure, dyslipidemia, diabetes, cholelithiasis, osteoporosis, gout, and rheumatoid arthritis. There is convincing research evidence that the recommended diet promotes health, maintains good nutritional status and functional capacity of the body, reduces the risk of many diseases and provides a foundation for their treatment. Nutrition plays an important role in the onset of conditions such as coronary artery disease, cerebrovascular disorders, hypertension, many types of cancer, type 2 diabetes, obesity, osteoporosis and dental caries.

A table of recommended food choices has been published to facilitate preparation of a health-promoting diet. These recommendations on improving the diet at the population level should also be taken into account when planning ingredient selection for hospital food (Table 11 p. 90).

According to the national nutrition recommendations (2014), the sustainable development aspect should be taken into account in dietary choices. A plant-based diet that complies with the recommendations reduces the ecological environmental burden caused by food. An environmentally friendly health-promoting diet favours seasonal vegetables, root vegetables, legumes, mushrooms, fruit and berries in a versatile manner. Fish is also served as well as meat in moderation, with an emphasis on poultry. Other choices that have a low environmental impact that can be considered health-promoting options include potato, cereal or a cereal side dish instead of rice, lake fish instead of farmed fish[5,6], rapeseed or canola oil, vegetable fat spread and tap water when thirsty.

5 Avoid using fish species marked with red in the WWF Seafood Guide. Seafood Guide: https://wwf.fi/kalaopas/ (in Finnish)

6 Instructions provided by the Finnish Food Authority concerning the safe use of fish for persons with weakened immunity. https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/

Table 11. Promoting health through food choices (National Nutrition Council 2014)

Recommended	Consideration of nutritional quality	In moderation
Vegetables (especially root vegetables) Legumes (peas, beans, lentils)	Low-fibre cereal products → wholegrain products	Meat products Red meat*
Berries, fruit	Butter, butter-based spreads → vegetable oils, vegetable oil-based spreads	Beverages and foods containing added sugar
Fish and other seafood	Fat-rich dairy products → low-fat/ fat-free dairy products	Iodised salt
Nuts and seeds		Alcoholic beverages

* Red meat = beef, pork and lamb

Hospital food serves as an example of health-promoting eating for many patient groups. In addition to health impacts, the environmental impacts of food should be taken into account when selecting food in a hospital or care facility. In the case of sick persons, the requirements set by the illness and the diner's taste preferences should be taken into account. This may, for example, restrict the suitability and use of new plant protein products. It is important to offer tasty, familiar food and favourite dishes to people with a small or poor appetite. This also reduces food waste. Actions and efforts to reduce waste must not jeopardise the implementation of nutritional care targets for a patient who is ill and has a poor appetite.

The amount of waste in food preparation can be reduced with good menu planning and an ordering, logistics and information system that ensures the supply of tasty food in suitable portion sizes for the target group.

A health-promoting and balanced diet can be implemented in many ways in hospitals and care facilities (Table 12 p. 91). The diet may be compiled so that it includes plant protein sources, fish, meat (preferably poultry), eggs or combinations of these ingredients. Vegetarian diets have become more common, and more people are also eating vegetarian meals in addition to meat meals. Increasing the vegetarian emphasis in meals is beneficial for the treatment and prevention of many diseases. The opportunity to order vegetarian diets as optional basic diet alternatives if the patient so desires is also important (see Vegetarian diets p. 97).

Table 12. Diet types

Diet	Includes vegetable products	Includes dairy products	Includes eggs	Includes fish	Includes poultry	Includes a moderate amount of red meat
BASIC	x	x	x	x	x	x
NO RED MEAT Semi-vegetarian	x	x	x	x	x	
VEGETARIAN-FISH Pescovegetarian	x	x	x	x		
VEGETARIAN-EGG Lacto-ovovegetarian	x	x	x			
VEGETARIAN (VEGETARIAN-DAIRY) Lactovegetarian	x	x				
VEGAN Vegan	x					

Basic diet and implementing diets needed to treat diseases

Nutritional content of the food served

The nutritional content of the basic diet must comply with the nutrition recommendations of the National Nutrition Council. In addition, the ESPEN guideline on hospital food[7] and its micronutrient intake guideline for enteral nutrition and intravenous nutrition that apply to an acute illness have been used when compiling this recommendation[8].

Key factors when implementing a basic diet are high nutrient density, good fat quality, high fibre content and low salt. (See Table 13 p. 92 and Appendices 17 a and 17 b p. 315–316). As a rule, the same principles also apply to diets intended for treating illnesses (see Appendix 18 p. 317). Recommendation for energy levels and range of portion sizes, (see Table 14 a–c p. 93–95).

7 ESPEN guideline on hospital nutrition, 2021. https://doi.org/10.1016/j.clnu.2021.09.039

8 ESPEN micronutrient guideline, 2022. https://doi.org/10.1016/j.clnu.2022.02.015

In the basic diet, 45–60% of the entire day's energy should come from carbohydrates and 25–40% from fats. The recommended daily intake of dietary fibre is at least 3 g/MJ (13 g/1,000 kcal). The amount of protein in the basic diet should be 18 E% (1,1–1,4 grams per kg of body weight, approximately 65–110 g/day). The need for persons recovering from an illness can be higher, 1.5 g/kg of body weight. Fats obtained from food should mainly be soft, unsaturated fats. Hard fats should account for less than 1/3 of total fat intake (<10 E%). Added sugar should be used in moderation. The amount of added sugar should remain below 10 E%.

Table 13. Energy and nutritional content in the basic diet

Nutrient	Recommendation
Energy	1,400–2,400 kcal/day (6–10 MJ/day) Portion sizes, kcal/day: S (1,400–1,600), M (1,800–2,000) and L (2,200–2,400)
Protein	15–20 E% (18 E% during planning)
Fat	25–40 E% (32–33 E% during planning)
Saturated fatty acids	No more than 10 E%
Monounsaturated fatty acids	10–20 E%
Polyunsaturated fatty acids, in which the share of n-3 fatty acids	5–10 E% At least 1 E%
Carbohydrates Sugar (added) Dietary fibre	45–60 E% (52–53 E% during planning) No more than 10 E% 3 g/MJ (13 g/1,000 kcal)
Vitamins and minerals	According to the National Nutrition Council recommendation (see Appendix 17 a and 17 b p. 315–316)
Salt	No more than 5 g/day (portion size M)

Table 14 a–c. Minimum requirements for the nutrition source
(Original source of criteria: National Nutrition Council, Terveyttä ruoasta – suomalaiset ravitsemussuositukset 2014 (Finnish nutrition recommendations for adults); updated according to changes in the Heart Symbol meal system criteria, November 2022).

Table 14 a. Main courses

Type of main dish	Nutritional content / 100 g, maximum		
	Fat, g	Saturated fat, g	Salt, g
Main dish porridges* Minimum fibre in flakes, etc. 6 g/100 g	3	1	0.5
Soups*	3 (5)**	1 (1.5)	0.5***–0.7
Casseroles, risotto, pasta dishes	5 (7)	2 (2)	0.6***–0.75
Main dish sauces (e.g. vegetable curry, chicken sauce, etc.)	9 (11)**	3,5 (3.5)	0.9
Discreet food items with or without sauce	8 (12)**	3 (3.5)	0.9

* If toppings for bread (such as cold cuts or cheese) are served in conjunction with soup or porridge meal, the criteria for Heart Symbol products should be used.
** The fat figures in brackets apply to fish meals.
*** Range of salt, where the lower number applies to food served to children and is the longer-term objective for everyone.

Table 14 b. Potato and cereal side dishes served with a main dish

Type of main dish	Nutritional content / 100 g			
	Fat, g	**Saturated fat, g**	**Salt, g**	**Fibre (dry weight), g**
Pasta	–*	Max. 0.7	Max. 0.3	Min. 6
Barley groats, cereal/cereal-vegetable mixes, etc.	–	Max. 0.7	Max. 0.3	Min. 6
Whole grain rice, rice vegetable mix	–	Max. 0.7	Max. 0.3	Min. 3
Boiled potato	No added fat	–	No added salt	–
Other potato side dish (e.g. mash, wedges, potato vegetable mix)	–	Max. 0.7	Max. 0.3**–0.5	–

*(–) No applicable criteria.

** Range of salt, where the lower number applies to food served to children and is the longer-term objective for everyone.

Table 14 c. Other meal components

Meal component	Nutritional content / 100 g			
	Fat, %	**Saturated fat, %**	**Salt, g**	**Fibre, g**
Bread	–	–	Fresh bread not exceeding 0.9 Crispbread, max. 1.2	Min. 6 Min. 10
Bread fat	Min. 60	Max. 30	Max. 1.0	–
Milk or buttermilk	Max. 0.5	–	–	–
Plant-based beverages*	Max. 2	Max. 0.4	–	–
Vegetable side dish - fresh vegetables	–	In marinade Max. 20	Utan tillsatt salt	–
Vegetable side dish - cooked vegetables**	–	In marinade Max. 20	Max. 0.3	–
Salad dressing Oil for salad	Preferably 25 or more	Max. 20 Max. 20	Max. 1.0	–

* Plant-based drinks should contain no more than 5 g/100 g of sugar and no more than 0.13 g/100 g of salt.

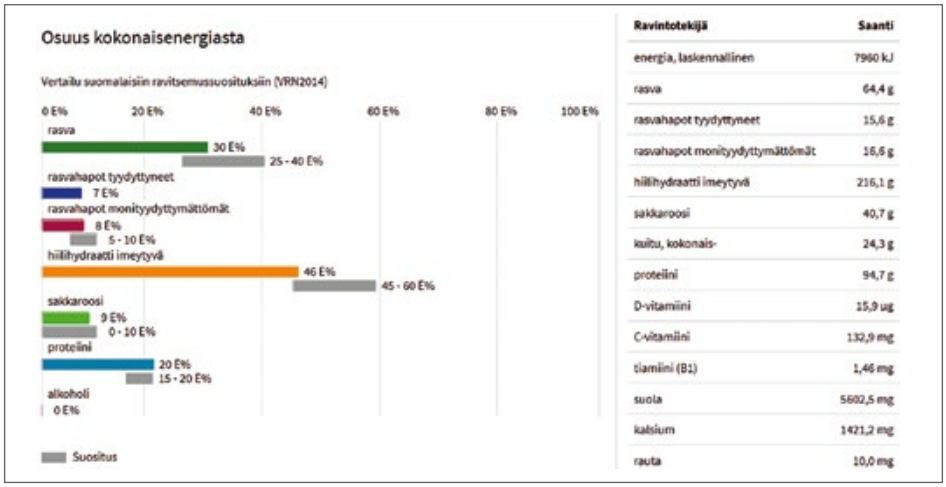
** In cooked vegetables, any fat meeting the Heart Symbol criteria can also be used (for example, oil, packaged margarine or a liquid vegetable fat product).

Nutritional content calculations

Monitoring nutritional quality is a continuous process by which the food services provider ensures that the food served meets the recommendations. Monitoring covers all stages: menu planning, food procurement, productisation and recipe development, cooking and serving the meals and snacks. Calculation of nutritional content is a practical tool used by food services when developing recipes and meals. Accurate monitoring of nutritional content requires nutritional content calculations at the dish, meal and weekly menu level.

Nutrition recommendations are realised when the minimum quality requirements set for meal elements are met (Table 14 a–c p. 93–95) and products meeting the Heart Symbol criteria are selected according to availability. The most important factor is to achieve the targets set for recommended shares of energy, protein and carbohydrate and the amounts of total and saturated fat, fibre[9], sugar and salt. In this case, vitamin and mineral intake is generally adequate with the exception of the lowest energy levels (less than 1,400 kcal). In diets where treatment of the disease requires the restriction of an specific nutrient (for example, phosphorus or potassium), the amount must be verified by calculations on a daily basis. The nutritional content targets for the basic diet are described in Table 13 p. 92. For other nutrients, the weekly average provides a sufficiently reliable description of the calculated intake.

Upon request, food services must provide information on the nutritional contents of meals. The nutritional content information of foods is maintained in the food services' production management system. When calculating nutrient amounts, it is important to ensure that the program database being used is sufficient. Determining and interpreting nutritional content information requires the professional skills of a nutritionist or nutrition specialist.



9 When using a nutritional content calculation program that does not calculate fibre, sufficiency of fibre should be ensured by using high-fibre carbohydrate sources (for example, products that meet the Heart Symbol criteria) and root vegetables and vegetables, berries and fruit according to the recommendation.

Vegetarian diets as the basic diet

- The vegetarian diet types offered in food services are lacto-ovovegetarian, lactovegetarian and vegan.
- The lacto-ovovegetarian and lactovegetarian diets are sufficient in terms of their nutritional content and are comparable to the basic diet when implemented in a balanced manner and compiled correctly.

In a vegan diet containing only plant products (see Vegan diet p. 99) animal products must be replaced by nutritionally equivalent items. Implementation requires special expertise and the availability and detailed planning of foods suitable for a vegan diet. The department must ensure that the necessary additions are made by means of food supplements.
A nutritionally balanced vegetarian diet consists of wholegrain cereals, potatoes, root vegetables, vegetables, legumes, seeds, nuts, mushrooms, berries, fruit, vegetable fats, dairy products and eggs or plant-based products to replace them.

Lacto-ovovegetarian and lactovegetarian diet

Implementation in food services

A separate menu is planned for the vegetarian diet based on the basic menu. Separate dishes and food preparation instructions are developed for the main dishes. In a vegetarian diet, a plant protein source (see Table 15, below) or a dairy or egg-based protein source that is suitable for the diet is always used at the main meals. The nutritional content of the diet must correspond to the nutritional content recommendation for the basic diet. A vegan plate model can be used when planning a vegan diet (Figure 9 p. 100).

Table 15. Protein sources in different vegetarian diets

Vegan diet In addition to the previous, beans, lentils, peas, bean and pea-based products, broad bean and broad bean-based products, seed and soya products (mince, cubes, strips, tofu and tempeh, soya drinks and soya products used like dairy products) as well as seitan (note: contains gluten) and other industrial plant-based food preparation products, such as oat products
Nuts and seeds
Cereal products, such as bread, porridge, cereals, muesli and cereal side dishes, are important sources of protein in all vegetarian diets
Lactovegetarian diet In addition to the previous, all ordinary dairy products and dairy protein products and plant protein products containing dairy protein
Lacto-ovovegetarian diet In addition to the previous columns, eggs, and plant protein products containing egg and mushroom protein

Implementation in the ward

The arrival discussion clarifies what kind of vegetarian diet the patient follows and whether they use dairy products or plant-based drinks used in a similar manner, or eggs.

Vegan diet

The vegan diet is used in some hospitals and care facilities in Finland. Implementation of a vegan diet is more challenging than other vegetarian diets, and the European nutritional care guideline (ESPEN 2021) recommends that it should not be offered in hospitals. ESPEN justifies its guideline by the fact that vegans are at a higher risk of vitamin B_{12} and vitamin D, zinc and calcium deficiency with higher rates of osteoporotic fractures and malnutrition. The risk of iron deficiency anaemia may also be higher. When a vegan diet is offered in a hospital, the nutritional content of the diet must meet the nutritional content requirements set for hospital food (see Table 13 p. 92). Even if the patient has followed a nutritionally adequate vegan diet for a long time, the disease may change their need for nutrition or cause decline in the absorption and utilisation of food. The need for protein increases in some acutely ill patients, and it may be difficult to meet this need with a vegan diet. The sufficiency of nutrient intake should be assessed regularly in an acutely ill person who follows a vegan diet. Decisions on offering a vegan diet according to the organisation-specific policy.

When implementing a vegan diet, the main meals must always include a plant protein source (see Table 15 p. 98). However, a well-planned vegan diet with appropriate supplements is nutritionally adequate for healthy people. A properly implemented vegan diet is also safe during pregnancy and lactation and is nutritionally adequate for children when the necessary food supplements are added to the diet (see p. 101 for more information).

Vegan sources of protein: pulled oats, pulled peas, fava bean product, soya mince, tofu and seitan

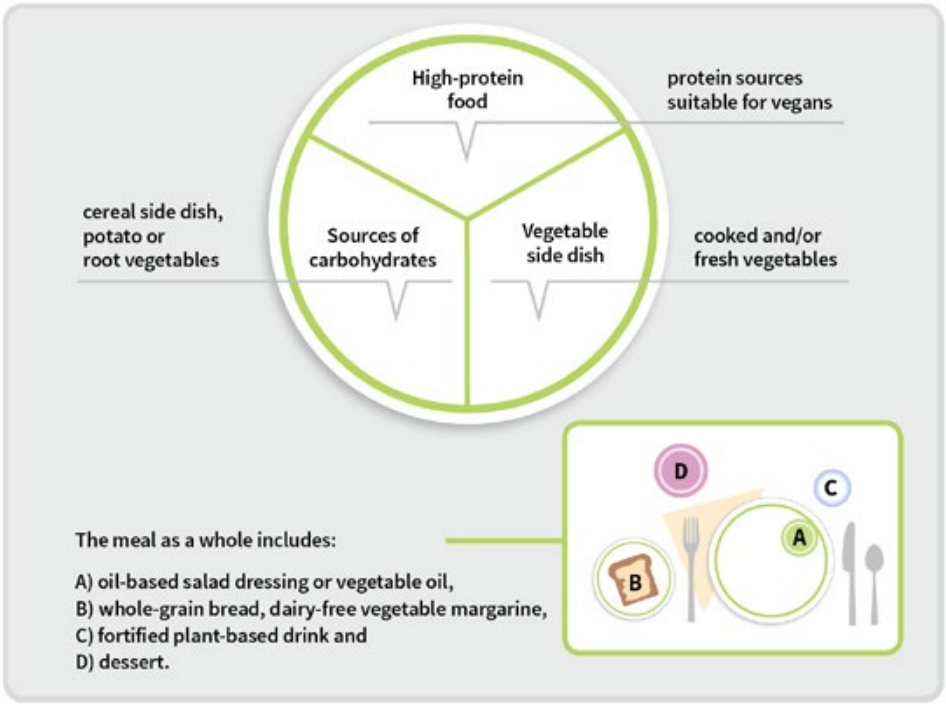


Figure 9. Vegan plate model

An example of a vegan meal

It is important to ensure adequate energy and nutrient intake

With the exception of vegetable oils, legumes and a few other sources of vegetable protein, such as seeds, nuts and almonds, plant products have low energy density. As a result, the size of food portions is larger than usual. Daily consumption of vegetable oil and the above-mentioned energy-rich plant-based products increases energy intake.

Individual sources of plant protein usually contain only small amounts of one or more essential amino acids, which is why their quality is often poorer than in animal protein, with the exception of soya. However, combining plant protein sources in a vegan diet can improve the protein quality to a level corresponding to animal protein. The amino acid compositions of cereal products and legumes (beans, lentils, peas) complement each other and should be served together with seeds, mushrooms or vegetables. However, not all complementary amino acids have to be obtained from the same meal at the same time, and they can come from the whole day's meals. Utilisation of protein in the body requires sufficient energy intake at the same time. The best plant-based drinks are diversely supplemented (calcium, iodine, vitamin B_2, B_{12} and D) and unsweetened products that meet the Heart Symbol criteria. Plant-based drinks are not equivalent to milk in terms of nutrition. Although soya drinks contain the same amount of good-quality protein as cow's milk, other plant-based drinks contain very little or none.

When planning and implementing a vegan diet, attention should be paid to the following factors in order to ensure nutritional sufficiency:

Essential fatty acid intake (in particular alpha-linolenic acid) is ensured by including rapeseed/canola oil and vegetable oil-based margarine and oil-based salad dressings in the diet on a daily basis. Other good sources of essential fatty acids are walnuts, camelina oil, and flax, hemp and chia seeds as well as oils made from these items.

Calcium sources include legumes (especially soya beans and foods made from them), cabbages, nuts, seeds, almonds and dried fruit, but it is difficult to get enough calcium only from them. Calcium-supplemented plant-based drinks and other plant-based foods used like dairy products that are supplemented with calcium are important sources of calcium in vegan diets. The possible need to increase calcium intake with a food supplement is assessed on an individual basis.

Important **zinc** sources in a vegan diet are legumes, nuts, almonds, seeds and wholegrain cereals. Zinc from plant sources is not absorbed as well as from animal sources, and therefore the recommended intake of zinc for vegans is higher (25–30%) than in a mixed diet. The need for a zinc supplement is assessed individually.

The **iron** in a vegan diet is so-called non-heme iron, which is not absorbed nearly as well as the found in animal products. Vitamin C improves utilisation of non-heme iron. Eating foods containing vitamin C foods, such as fresh vegetables, fruits and berries and 100% fruit juices, during the same meal promote absorption of the iron in cereal products, plant proteins and legumes. Many ready-to-eat porridges for children are enriched with iron, so these are a good option for children. In addition to wholegrain cereal products, good sources of iron in a vegetarian diet include soya and soya products, other legumes, nuts, almonds and seeds. The need for an iron supplement is assessed individually.

The main sources of **selenium** are cereal products and nuts and seeds, with Brazil nuts in particular containing a lot of selenium. Only a few Brazil nuts may be eaten each day. The need for a selenium supplement is assessed individually. Organic cereals contain less selenium than ordinary cultivated cereals and are not recommended for regular use in vegan diets.

Iodine sources include iodised salt, cereal products and plant-based drinks or products used to replace dairy products that are supplemented with iodine. In addition, an iodine supplement should always be taken in a dairy-free diet according to a nutritionist's specific instructions if the amount of iodine-supplemented products used like dairy products is not sufficient to ensure iodine intake. The levels of iodine in seaweed products varies greatly and therefore they are not suitable as the only source of iodine. It should also be noted that dangerously high levels of iodine have been detected in some seaweeds. Some seaweeds have also been found to contain high levels of heavy metals (arsenic, cadmium and lead) and therefore may not be served to children under the age of one. In addition, seaweed products should not be used in preschool children (aged 1–6) or pregnant or breastfeeding women if the iodine content is not known or the concentrations are too high.

A vegan diet lacks good sources of vitamin $\mathbf{B_{12}}$. This deficiency can be prevented or treated by regular and adequate use of a vitamin B_{12} product.

The most important sources of vitamin $\mathbf{B_2}$ are dairy products and meat, which are missing from a vegan diet. Intake of this vitamin is secured by including items used like dairy products that are supplemented with vitamin B_2, legumes and wholegrain cereals or use of a vitamin B_2 product.

The sources of **vitamin D** include plant-based drinks and other plant-based products supplemented with vitamin D as well as plant-based, non-dairy margarine. The possible need for a supplement is assessed on an individual basis. Vitamin D is added to some foods, such as margarines, vegetable fat spreads as well as supplemented plant-based drinks and products used like yoghurt. If use of these products increase intake to the recommended level, a vitamin D supplement is required (see National Nutrition Council recommendations for vitamin D intake and vitamin D preparations: https://www.ruokavirasto.fi/en/foodstuffs/healthy-diet/nutrients/vitamin-d/.

A vegan diet should be supplemented with a food supplement containing B_{12} and other necessary food supplements – often vitamin D and iodine – on an individual basis. In addition, the need for calcium, vitamin B_2, iron and zinc should be assessed individually by a nutritionist. Counselling on the use of food supplements takes into account the intake obtained from nutrition, including the frequency and amount of supplemented food items.

Activities in food services

The vegetarian menu is adapted for a vegan diet. Its implementation as a balanced diet that meets the nutritional recommendations requires the availability of standard recipes for the dishes. Planning of the vegan menu is always based on nutritional content calculations. The prerequisite for good implementation is the development of nutritionally-balanced and tasty vegan recipes that provide a sufficient amount of energy, protein and nutrients in order to ensure that nutritional content meets the recommendation, the versatile use of sufficient vegan protein sources and sufficient energy supply must be ensured. An important factor when planning vegan snacks is to consider the diet as a whole in order to ensure, for example, adequate energy and protein intake. A balanced meal is always prepared using a plant protein source, raw and cooked vegetables, a cereal side dish or potatoes, with each element accounting for approximately one third of the portion.

TIPS FOR IMPLEMENTING A VEGAN DIET

Cereal products

- wholegrain cereal products should be favoured and used in ample amounts, because they are the foundation of a vegan diet
- non-organic cereals should be favoured

Vegetables

- plenty of vegetables in raw and cooked form should be served in a balanced manner at every meal

Replacing milk in food preparation

- soya, oat, nut, almond and millet beverages are suitable for serving with meals
- oat, rice and soya drinks are suitable as baking liquids
- rice drinks should not be used for breastfed babies and should not be used as the only beverage (e.g. with meals) in children under 6 years of age. The nutritional content of rice drinks does not meet a child's needs and its heavy metal content can also be high (inorganic arsenic).

Replacing cream in foods

- a soya or oat product can replace ordinary cream in food preparation
- whipped cream can be replaced by a whippable oat or soya product

Replacing egg

- soya flour can be used in porridges and baking
- soya flour is a good replacement for eggs in food preparation

Sources of soft fat and essential fatty acids

- plant-based, dairy-free margarine is used as fat on bread
- rapeseed oil, canola oil, camelina oil and vegetable margarines produced from them
- linseed oil, hemp seed oil, soya oil, wheat germ oil, walnut oil and walnuts

Products and additives of animal origin

Many vegans want to avoid using food preparation products and additives of animal origin in their diet. These include whey, casein, caseinates, lactose (milk sugar), rennet, honey, gelatin, albumin and egg powder. Ingredients of animal origin may be present in a wide variety of products, such as egg in spaghetti, honey in muesli bars, anchovy in salad dressing, additives of animal origin in sweets, and milk powder in muesli milk. Additives of animal origin include E120 carmines, cochineal, carmine acid and E1105 lysozyme (see https://www.ruokavirasto.fi/elintarvikkeet/elintarvikeala/ainesosat-ja-sisalto/lisaaineet-aromit-ja-entsyymit/lisaaineet/elainperaiset-valmistus--ja-lisaaineet/).

Children, pregnant and breastfeeding women

Pregnant and breastfeeding women as well as children and young people can also follow a carefully planned vegan diet. However, the long-term impacts on growth and development are not known yet. A vegan needs 5–6 balanced meals a day to ensure sufficient intake of energy, protein and other nutrients. A vitamin D preparation should be taken during pregnancy and breastfeeding and given to babies starting at the age of two weeks in accordance with the National Nutrition Council recommendations (https://www.ruokavirasto.fi/en/foodstuffs/healthy-diet/nutrients/vitamin-d/). A vegan diet should also include a food supplement containing vitamin B_{12} and other necessary food supplements – often vitamin D and iodine – on an individual basis.

Exclusive breastfeeding until the age of 4 to 6 months is recommended for a vegan child and partial breastfeeding in addition to solid foods until the age of one year. There is no baby formula suitable for a vegan diet on the Finnish market, so when the child is no longer being breastfed it is impossible to follow a vegan diet under the age of one. In this case, a cow's milk-based baby formula or follow-on formula should be used according to the child's age.

Solid foods should be started according to the principles of food recommendation for babies. For children over one year of age, a soya or oat drink supplemented with calcium, vitamin D and B_{12} and preferably also with iodine and vitamin B_2 is recommended with meals. Excessive iodine intake should be avoided: as a result, the simultaneous use of iodine-supplemented plant-based drinks and food supplements containing iodine is not recommended in children. Rice drinks should not be used in children under the age of 6. Oil plant seeds (for example, flax, pine nut, chia, hemp, sesame, pumpkin, poppy and sunflower seeds) are not suitable as such, ground or soaked during pregnancy or breastfeeding or for breastfed babies. Small quantities of oil plant seeds in other products, such as bread, are not harmful. Preschool children may consume a maximum of 1 tablespoon per day (6–8 g) of varied oil plant seeds. (see the up-to-date version of the Finnish Food Authority's General instructions on safe use of food https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/).

Implementation in the ward

The arrival discussion clarifies what kind of vegan diet the patient follows, such as the type of drinks served with meals. Vitamin (for example, vitamins D and B_{12}) and mineral (for example, calcium, iodine and iron) supplements for patients following a vegan diet are handled according to individual needs and a nutritionist's instructions. The adequacy of food intake in cases of acute illness should be regularly assessed by monitoring food use.

Nutrition counselling

A person following a vegan diet should be given the possibility to meet a nutritionist in order to assess the nutritional adequacy of the diet and ensure a balanced structure. A nutritionist's expertise is particularly important for acutely ill people, children, young people and pregnant and breastfeeding women, because planning a nutritionally sufficient vegan diet requires the use of nutritional supplements and enriched foods as well as diverse plant protein sources.

Medicines and food supplements that require special attention

Medicines and food supplements may contain additives like gelatin, milk powder, lactose or other ingredients of animal origin that a person following a vegan diet wants to avoid.

The range of non-dairy enteral nutrition products and oral nutritional supplements also include options for vegans. The suitability of the enteral nutrition product and oral nutritional supplement product for vegans should always be checked.

SOURCES p. 351

Consideration of multiculturalism in meals and nutritional care

- Eating habits are an important part of a person's identity.
- Patient-oriented meals take cultural and religious aspects into account.
- Information on ingredients/foods avoided for cultural or religious reasons communicated during the arrival discussion are taken into account in the patient's food order whenever possible.
- Compliance with religious food restrictions varies on an individual basis. Religious fasting rules do not apply to sick people, pregnant or breastfeeding women, children or older adults.

The aim of nutritional care is to maintain or achieve a good nutritional status while respecting the patient's ethnic background, food culture and religion. Eating habits are linked to maintaining identity. Living in a new home country usually reinforces a person's own food culture. Food cultures differ in terms of how ingredients and foods are combined, supplemented and seasoned and with regard to their cooking methods and texture.

Religions specify which foods are considered edible, for example, with regard to food preparation and animal slaughtering methods, the combination of ingredients and fasting rules. In the Islamic religion, foods that are allowed are called 'halal' and those that are forbidden are called 'haram' foods. In the Jewish religion, kosher foods are permitted. Adventists follow a lactovegetarian diet. Jehovah's Witnesses refuse to eat food containing blood and blood transfusions are forbidden. Today, the dietary restrictions of religions are observed on an individual basis, which makes it important to clarify this matter for the purpose of ordering food and nutritional care for the patient.

In terms of hospital diets, vegetarian (lactovegetarian or lacto-ovovegetarian), vegetarian-fish (pescovegetarian) and a vegan or a basic diet containing no pork are suitable for most people from diverse cultural or religious backgrounds (see Appendix 16 p. 314).

Implementation in food services

Foods services plans the food for immigrants and people who observe the food restrictions of different religions planned according to the order from the unit, for example in the following way:

- A pork-free alternative is selected as the main dish, and no milk or dairy products are used during its preparation.
- Milk and dairy-free meat are served at different meals.
- Food containing pork and ingredients of pork origin are not served.
- No food containing beef is served.

- Alternatives are served: cheeses instead of cold cuts, eggs and marmalade, sour milk products – such as yoghurt and quark – and rice as an side dish alternative to potatoes.

Food additives may be based on pork products, and therefore their origin must be checked with the importer or manufacturer if necessary. Similarly, the origin of the fat used in bread and pastry should be checked to determine if it contains pork fat. Information about products and additives of animal origin is available on the Finnish Food Authority website: https://www.ruokavirasto.fi/elintarvikkeet/elintarvikeala/ainesosat-ja-sisalto/lisaaineet-aromit-ja-entsyymit/lisaaineet/elainperaiset-valmistus--ja-lisaaineet/

Implementation in the ward

The arrival discussion with an immigrant clarifies the impacts of the patient's cultural background and religion on meals:

- suitability and observation of a vegetarian diet: when implemented as a lactovegetarian, lacto-ovovegetarian or vegan diet or supplemented with fish and chicken, this is suitable for many immigrants.
- core foods in the diet: bread, rice, cereals (for example, buckwheat, teff, millet, couscous), corn products, plant protein products (for example, tofu, tempeh, oats), porridge, meat, fish, poultry foods, dairy products (sour milk products), beverages (tea)
- combining sweet and salty foods at the same meal
- following food rules related to religion: for example, use of meat and meat products and eating meat and dairy products at the same meal
- the possibility and selection of "food gifts" brought by the patient's visitors.
- food supplements, such as vitamin D and iron, are utilised according to individual needs.

Nutrition counselling

The food culture of immigrant patients taken into account in their nutritional care. The health perceptions of immigrants may differ from those of Finns, so it is important to thoroughly justify the need for nutritional care. In terms of nutrition for immigrants, the main challenges are similar to those of the native population: excessive use of sugar and energy-rich drinks to quench thirst – especially in children and families – and high intake of hard fat and salt. Use of vegetables and fruit may also be low, even if a diet in accordance with an ethnic food culture contains a lot of them. Studies show that intake and serum concentrations of vitamin D in people of Somali and Kurdish background are often lower and anaemia more common than in the general population.

Medicines and food supplements that require special attention

A 20 microgram/day vitamin D supplement is recommended all year round in order to ensure adequate vitamin D intake for adults (18–74 years old) who spend very little time outdoors, dress in clothes that cover most of their body, or have dark skin. Other age groups follow their own recommendations on vitamin D supplementation.

SOURCES p. 351

Food process

The food process for patient meals is seamless cooperation between several actors (Figure 10). It involves food services, nursing staff, institutional maintenance and logistics. The patient meal card is an important source of information and should be kept on the tray all the time, from food distribution to serving until the patient has finished their meal.

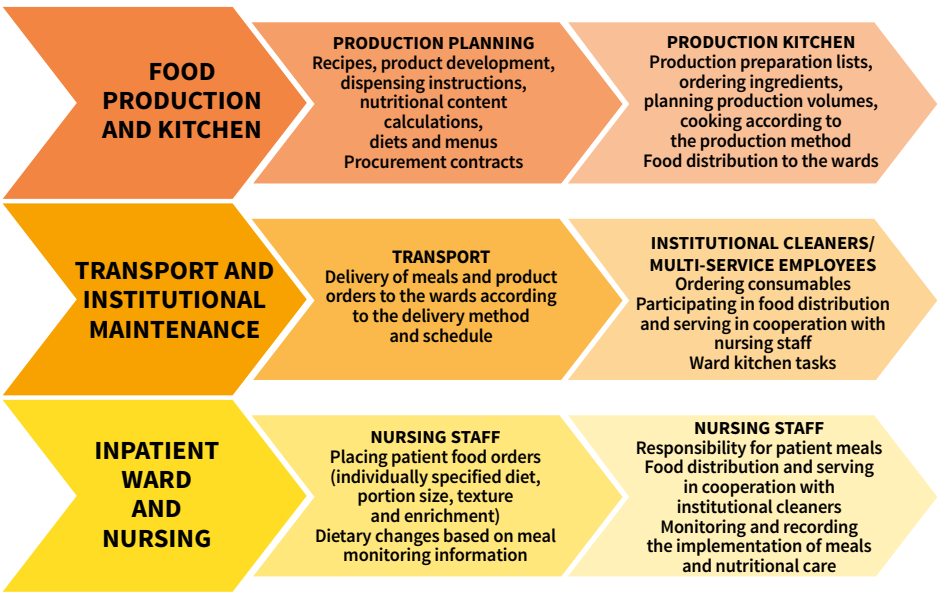


Figure 10. An example of the food process in the work of different actors

Food procurement

- The foundation is the suitability of ingredients, nutritional and organoleptic quality, suitability for a health-promoting diet and, whenever possible, ecological sustainability.
- In terms of food procurement, nutritional quality is realised in the basic diet by using products that meet Heart Symbol criteria and the minimum quality requirements for meal parts outlined in this guideline.
- Suitable ingredients and special products for the nutritional care of diseases, such as an enriched and gluten-free diet and nutritional care for kidney diseases, and food allergies are also taken into account when selecting foods.
- The food procurement team always includes a food services representative and a nutritional expert/nutritionist.

The minimum quality requirement for food procurement is the nutritional quality requirements set for fat, saturated fat, salt, fibre and sugar (Table 14 a–c p. 93–95). Heart Symbol products as such are also recommended as meal parts, even when their criteria differ from the meal part-specific criteria in some products. The differences are due to the fact that criteria for Heart Symbol products are based on a "better choice" comparison of the products available for sale in each product group. If only one meal option is available each day, it is acceptable that the majority of meals on the basic diet menu (at least 80%) comply with the recommendation. When more meals are served (breakfast, lunch, snack, dinner, evening snack), meal planning should take the meal entity for the entire day into account and the objective should be achieved.

Sick people, especially children and the elderly, often have a poor appetite and eat very small amounts of food. As a result, it is important to take sensory quality into consideration and, whenever possible, the client's requests as well. Things like using seasonal products, such as fresh berries in the summer, and the variety in bread and cold cuts are particularly important for long-term patients. It is also important to include local foods on the list, according to the season and especially during holidays.

Food preparation in a production kitchen requires special products for texture-modified and other special diets. These products include starch products and cook cold thickeners, which are used as thickening agents. Their use requires tested recipes. The production also requires protein powders. As a rule, oral nutritional supplements available at pharmacies are used. The functionality, safety and uniform quality of products must be ensured. (see Oral nutritional supplements p. 145).

Menu planning

The starting point for menu planning is the diversity, healthiness, taste and variety of meals as well as patient needs. Menu preparation is also affected by key food production factors, such as the cooking equipment being used and the food distribution system. The cycles for menus for adults and children in an acute hospital are usually 3–5-weeks and at least 5 weeks in long-term care. A shorter menu cycle is justified when several options are available. Fish is served 2–3 times a week. Vegetarian diets should be offered as alternatives to the basic diet based on meal orders. A menu must be planned for them. The nutritional quality of local and traditional foods served on holidays may differ from the nutritional objectives of health-promoting food.

The food services development group plans and develops the menu on a regular basis, also taking customer feedback into account. Meals are planned so that the taste, texture and colour of the dishes and ingredients complement each other and create an attractive entity. When possible, two main dish options should be planned and the patients so that patients can make a choice in advance. Another option is to offer patients who with a poor appetite who eat very little the opportunity to order preferred foods and snacks.

In the basic diet, it is important to give patients the chance to choose the type of bread, fat spread, drink and salad dressing. The choice may be more limited in a special diet. If necessary, the patient should be guided to make choices suitable for the dietary requirements set by the patient's illness.

Food preparation

Food preparation is based on tested, standardised recipes. All ingredients, particularly salt, spices and broth products that contain salt, are weighed for the food being prepared. The recipe also provides instructions on using the appliances, the selection of cooking methods and the cooking temperature. Continuous development of recipes and compliance with them ensure the sensory and nutritional quality of food. Vegetable oil, spreadable margarine, vegetable fat blends, liquid vegetable oil products and fresh cheese that contains soft fat (which meets the Heart Symbol criteria) are used in cooking and baking.

Iodised salt for food preparation and foods.

The following actions promote realisation of the recommended salt intake (5 g/day at the basic energy level, portion size M):

- observe the salt criteria provided for meals (Table 14 a–c p. 93–95)
- use standard recipes in which salt content has been optimised
- peppers, herbs and other salt-free spices add flavour to food and replace salt
- use vegetables, lemon and fruit juices to add flavour
- regularly measure the salt content of food with easy-to-use salt meters for dishes in which the meter can be reliably used, such as soups and sauces
- favour unseasoned meat and fish as ingredients
- salt may not be needed when using ingredients that already contain salt
- A maximum of 18 g of salt should be added to 1 kg of bread or bread roll dough, which means a salt content of approximately 0.8 g/100 g in the finished bread
- the amount of mineral salt added during cooking and baking is the same as the amount of ordinary salt. However, mineral salt is not suitable for kidney patients.

Food preparation method and activities in the ward

A variety of food preparation methods can be used in production kitchens:

- Cook and serve
- Cook and chill: cook, chill, heat (either in the production kitchen or service point) and serve
- Cook cold: prepare the food cold in advance (the day before), cook (in the production kitchen or service point) and serve.

Each production method requires a controlled food production process all the way from food procurement to production, serving the food, and to the patient's plate. Several professional groups are responsible for the parts of this process: a successful outcome requires that all actors are aware of and know their tasks. It is important to define the process as a cooperative effort based on the production method and distribution system functionality (see Table 16 p. 112. The strengths and challenges of centralised and decentralised food distribution systems). The production process and its critical points are described in the self-monitoring plan for food services. Implementation is monitored in electronic systems (in production and in the ward kitchen in institutional maintenance) or partially or entirely via using manual methods.

Table 16. The strengths and challenges of centralised and decentralised food distribution systems

	Centraliserad distribution	Decentraliserad distribution
Strengths	Distribution efficiency. Safety, which means the right food for the right patient.	Opportunity for patient choice (portion size, meal entity). Flexibility when patient turnover is high. Maintaining appropriate food and beverage temperature.
Challenges	Foods services staff required during distribution. Lack of flexibility (real-time nature of the ward information system and food services). Maintaining an appropriate food and beverage temperature in room-temperature transport carts.	Ward staff required during distribution. Requires nutrition expertise on the part of ward staff. The risk that a patient receives the wrong food.

Examples of snack options for the ward's product range

Snacks are important in the meals and nutritional care of hospital patients. A snack cannot be just a "sweet treat"; its energy and protein content are also important selection criteria. Snacks served outside normal meal times are a way of safeguarding sufficient nutrition, for example, in patients with a poor appetite and those who need more intense nutritional care as well as older patients, children and breastfeeding mothers. The product range in the wards should be planned to include a variety of products suitable for snacks while taking into account the nutritional care needs caused by illnesses. Snack products are mainly prepared by hand, but they can also be ready-to-use industrially manufactured products. Products that comply with Heart Symbol criteria should be favoured whenever possible. Products suitable for an enriched and high-protein diet are presented on page 142–143 (Table 26).

Examples of snack options

Berry and fruit-based snacks

- Fruit smoothie/berry smoothie
  Fruity snack drink (dairy-free)

Porridge, muesli, breakfast cereals

- Porridge flakes/single-serving instant porridge
- Berry and fruit porridge, for example, whipped porridge
- Rice porridge
- Semolina porridge
- Muesli, breakfast cereal, single-serving pouches

Dairy products and products used like dairy products

- Fruit or berry yoghurt, unflavoured
- Soya or oat product used like yoghurt
- Protein quark, protein drink
- Whipped quark
- Pudding
- Unflavoured curd milk, flavoured curd milk, layered curd milk
- Milkshake

Fruit and nuts

- Orange, banana, apple or seasonal fruit or fruit salad
- Single-serving nut pouches

Bread, bread rolls and pies

- Various breads, bread rolls, hamburgers (also gluten-free), local savoury pasties
- Margarine on bread vegetables (for example, lettuce/cucumber/tomato/pepper) and assorted cold cuts/cheeses/eggs/hummus
- Rice pasty/various pasties

Sweet snacks

- Cookie, filled/cake-style, waffle
- Ice cream, cone/cup/stick/ice lolly
- Coffee bread, loaf/bun
- Berry pie, muffin
- Jelly roll
- Snack cookie/bar

Coffee, tea or cocoa with a snack

Preparation of special diets

The basic menu should be used as the basis for planning special diets as much as possible (see Appendix 15 p. 307–313). However, the food type does not always have to be the same, as ingredients suitable for the diet may function differently in terms of production during cooking. Combining special diets due to production-related reasons should be avoided. The combination of special diets may not lead to the exclusion of ingredients that are suitable for the patient. Combining diets will cause decrease variety and lead to unnecessary simplification of the diet, particularly for long-term patients. Special diets that are in regular daily production should have menu plans and their own recipes as well as nutritional content calculations for them at the weekly level. Production management system software enables planning of individual special diets and nutritional content calculations on a daily basis.

Ready products ordered for special diets should also be productised. The suitability of products for different diets must be indicated in the product range. Special diets are prepared from ingredients selected by purchase agreements, just like other ingredients used in the kitchen. In addition to ingredients, convenience and ready-to-use foods, such as steaks and balls, are used. The need for certain special diet products (for example, gluten-free products) is taken into account in the tendering process. Whenever possible, the Heart Symbol criteria should also be used when selecting special diet products. The diet kitchen needs accurate and up-to-date product information about special diet products. The ward orders the food items needed for special diets using the food services ordering program.

Handling and storage of gluten-free products

Food services always offers a gluten-free diet as a diet that can include gluten-free oat products and foods containing gluten-free wheat starch.

Preparation of gluten-free pastries requires information on gluten-free ingredients and caution at different stages of the process. The absolute 'purity' of gluten-free ingredients is important for the health of people with coeliac disease. Gluten-free products can become contaminated through, for example, equipment, surfaces, employees' hands and clothing. Gluten-free ingredients should be stored in a well-protected manner sealed in their original packaging and in a separate storage space when possible. If a gluten-free ingredient is removed from its original packaging, the resealable container must be clearly marked.

Avoiding contamination during food preparation

When making gluten-free foods, all ingredients must be suitable for people with coeliac disease.

Contamination must be prevented by ensuring that preparation takes place at a different time or in a different place than other food preparation. Baking of gluten-free products is separated from other baking by either preparing the products at a different time or by physically separating the process from other baking and cooking. Surfaces must be wiped before baking and clean equipment and clothing used during gluten-free baking, as well as baking cloths to prevent contamination. If baking is only done at a different time, gluten-free products should always be baked first.

Products should be labelled immediately after preparation to avoid confusion. Serving dishes containing gluten-free products must be clearly marked. Gluten-free products are always served from their own serving dish and separately from similar ordinary products. The serving utensils must also be different.

Food hygiene in patient meals

Hospitals and care facilities must always follow the food safety regulations strictly in patient meals. Food services must ensure that its operations meet the requirements set for food operations in the food regulations. According to the Food Act, a food services operator must have a system that allows the operator to identify and manage food safety hazards and risks (p. 70). Self-monitoring may also be part of the operator's food safety system.

In their self-monitoring, food services and the ward kitchens define critical control points for food safety, such as the handling of perishable foods and temperature monitoring as well as other operational risk situations in terms of hygiene. The self-monitoring instructions for patient meals must be strictly followed. For example, a person must wash their hands thoroughly before handling and eating food.

More information about food safety is available on the Finnish Food Authority website. In addition to hygiene regulations, food services must always observe the Finnish Food Authority's instructions on safe use of food for different age and target groups.

Hospital patients may have weakened immunity due to illness or treatment. It is particularly important to ensure that the serving and storage temperature regulations and the time limits set for them are observed for individual meals required when treating diseases. In some patient groups, infection prevention may require stricter than normal instructions regarding the hygiene level. For example, patients who have received an allogeneic stem cell transplant or are undergoing intensive cytostatic therapy (see Oncological diseases p. 207), may require individual food restrictions. As a general rule, a basic diet is also suitable for these patients. If the patient's care situation requires individual food restrictions, they are always reported separately. A limit should always be set for individual food restrictions so that the patient's diet does not become too narrow for an unintentionally long period. A restricted diet may adversely affect appetite

and the intake of essential nutrients, and thus also have a negative impact on the body's resistance.

In hospitals that regularly treat patients receiving organ or stem cell transplants or intensive cytostatic therapy, an individual diet can be ordered by creating "food restrictions for weakened resistance" instructions in the ordering system. This type of ordering instructions can be compiled using the special guidelines in Appendix 19 (p. 320).

Food distribution and dispensing

The food is delivered to the purchaser according to a centralised or decentralised food distribution system. It is also possible to use both food distribution systems simultaneously. When implementing combinations of special diets, such as diets for food allergy and kidney patients, centralised distribution has proven to be a functional system. Decentralised food distribution works well for certain groups, such as cancer patients, psychiatric patients, child and long-term patients. In this case, the patient can serve their own food or participate in the dispensing process. Decentralised food distribution provides a teaching situation in the ward, for example, about the carbohydrate content of a meal for diabetics.

Centralised food distribution involves dispensing meals using model portions designed according to the energy content of the diet. Decentralised food distribution involves preparing dispensing instructions for the ward staff as volume measurements, slices or pieces, depending on the different portion sizes. Illustrated dispensing instructions are necessary for success in this system. The food should be dispensed in a tidy and beautiful manner according to the dispensing instructions. It should be possible to take extra portions.

Multi-service and competence needs

Multi-service means that food services and institutional maintenance are integrated into the same organisation. In this case, support services may include food, institutional maintenance and lobby services. Multi-service employees need training and induction regarding food services tasks, such as basic and special diets and food dispensing, product knowledge related to ready products, ordering and distributing those products, as well as food hygiene and self-monitoring skills. Multi-service employees also need competence in customer service and customer interface tasks. They must also complete hygiene passports if they will be handling unpackaged, perishable foods. Depending on the situation and needs, multi-service employees can work flexibly in different parts of the organisation.

Information systems and division of responsibilities

Integration of organisations' IT systems and programs into a functional entity requires their detailed description and specification of the tasks and responsibilities of different professional groups. Food services needs up-to-date information that includes as much detail as possible about the diets intended for nutritional care of diseases. Integration of the patient information system and food services should enable the smooth transfer of information from the ward to the food preparation kitchens. A decision also has to be made concerning which information is maintained in the patient information system and which in the production management systems and who is responsible for updating and maintaining that information. In the future, system development and new programs can give patients more opportunities to choose their own options, for example, allowing the patient to select the main dish, type of bread and beverages.

Internal auditing, self-monitoring and supervision of food services and institutional maintenance

Auditing examines whether the current activities and the related results correspond to expectations and plans. Quality auditing assesses, for example, management and personnel induction, competence, practical work and patient safety. The results obtained from auditing are utilised in the systematic evaluation and development of operational quality, making use of digitalisation for example.

Self-monitoring of food services and institutional maintenance refers to regular and continuous self-assessment and monitoring of functions and the related measures, such as quality monitoring, quality control visits and internal audits.

The service provider is required to provide instructions and site-specific descriptions of the activities. Further details regarding service provision and instructions may include instructions on ordering meals and products, portion size tables and instructions, and meal transport schedules. Basic matters that require observation in food production and the patient wards include the temperatures and freshness of food, temperature monitoring of any refrigeration equipment, and temperature monitoring of washing and rinsing water in dishwashers, as well as work, tool and facility hygiene.

Self-monitoring refers to the food business operator's own system according to which it seeks to ensure that the food premises and the activities carried out there meet the requirements set for them in food regulations. The operator must manage the risks of their operations by means of self-monitoring.

Documents generated from self-monitoring are part of quality audits, and they include surface cleanliness samples from food services and institutional maintenance, protein stain tests and visual quality assessments. Audits are management tools that also help in the development of operative activities. In addition to self-monitoring and

supervision of the quality of the service performed by the service provider, the quality of the activities is monitored by the purchaser or a party authorised by the purchaser. Quality monitoring is part of the service agreement between the purchaser and the service provider.

Food services must have a food safety or quality management system as required by law that enables the operator to identify and manage hazards related to its operations. The results of self-monitoring must be documented with sufficient precision so that the authorities can obtain information on matters relevant to the monitoring. The entire food production process and the nutritional quality of food and foodstuffs are monitored by means of a quality management system or food service program.

Activities in the ward

The wards must have their own system or plan for the implementation of self-monitoring. Hospital wards are subject to self-monitoring of production kitchens if the same operator runs the production kitchen and ward kitchen. The same operator means that both kitchens are the ward's own activities or both have been outsourced to the same service provider. If the hospital wards are not subject to self-monitoring of a production kitchen, a food premises notification is made for the ward kitchens and they fall within the scope of food monitoring performed separately from the production kitchen.

The Oivahymy report system

The Oivahymy system provides a way to inform consumers and clients about the control results of food services and food business operators. Oiva is a food control inspection information system coordinated by the Finnish Food Authority. Municipal food inspectors make visits to food control sites and use emoticons to assess the food safety of kitchens and other food industry companies. A smiling Oiva guarantees that things are being handled well at the premises. Companies must display the Oiva reports obtained from the visits near their entrances and they are also published on the internet. A separate feedback system is needed to assess customer service, the flavour of food and nutritional quality.

The Oivahymy report system

EXCELLENT

EXCELLENT: Operations are in line with the requirements.

GOOD

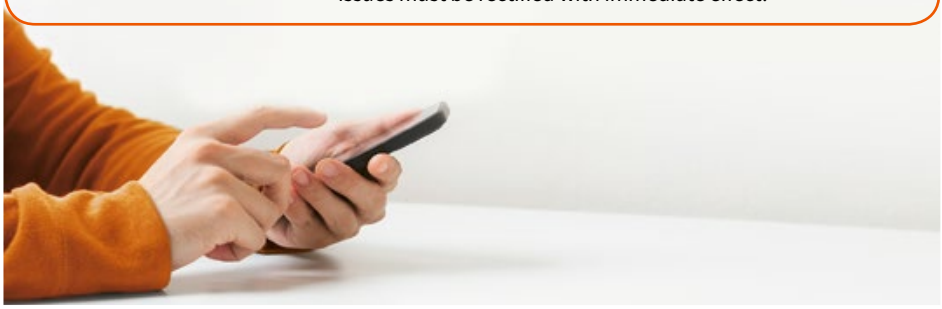
GOOD: There are small issues with the operations which do not impair food safety or mislead consumers.

TO BE CORRECTED

TO BE CORRECTED: There are issues with the operations which impair food safety or mislead consumers. These issues must be rectified within a set period of time.

POOR

POOR: There are issues with the operations which jeopardise food safety or considerably mislead consumers, or the operator has failed to comply with orders that have been issued. These issues must be rectified with immediate effect.



Measurement of customer satisfaction and quality

The service provider organises customer surveys on a regular basis and collects information on customer satisfaction and service quality. The results obtained from the indicators are utilised in service development. Customer panel members and experts by experience can be included and involved in[10] menu planning and product development[11]. The service provider monitors the nutritional quality of food regularly and takes the nutritional quality criteria into account in food procurements (see minimum requirements for nutritional quality, Table 14 a–c p. 93–95). Regular cooperation meetings between the service provider and the purchaser help to address possible deviations quickly.

10 **Customer panel** refers to a method of involving customers in the planning, evaluation and monitoring of services. this is a group of service users whose task is to provide feedback on the quality of services, make proposals for their improvement and bring ideas to the service planning and development process.

11 **Expert by experience** is a person who has personal experience of an illness or being a sick person's friend or family member. They are enthusiastic about developing services or helping others based on their own experience. Experts by experience may work as members of various working groups, steering groups and management groups, in service assessment, planning of new activities or facilities, development of care and service chains, group counselling as an expert by experience at customer meetings in partnership with a professional, or as an expert by experience during training days and in educational institutions.

Quality criteria for food services

Quality criteria for food services and patient meals are part of the hospital's quality work. The quality criteria are recorded in the nutrition manual, and monitoring actions and frequency of monitoring their realisation specified in the service agreement. These criteria are updated as necessary and communicated to the people taking part in nutritional care. For example, the food services quality manual describes the criteria presented in Table 17.

Table 17. An example of quality criteria for food services activities

Activities	Quality criteria
Food procurement	• Procurement is based on the nutritional and organoleptic quality of ingredients and overall economy.
Diets	• The selection of diets is determined on the basis of the patients. • Written instructions on the content of diets and dispensing are compiled and planned for at least three portion sizes. • If necessary, all diets are prepared in texture-modified form, such as soft, coarse purée, smooth purée and liquid.
Nutritional content	• The nutritional content of the basic diet is calculated or evaluated in accordance with the nutrition criteria, and it complies with the recommendations. • The nutritional content of other diets may only deviate from the recommendation when justified. • Upon request, food services must provide information on the nutritional content of meals.
Meal rhythm	• Food is divided between breakfast, lunch, dinner and evening snacks and 1–2 other snacks. • Meals are served at regular intervals during the day, with the evening snack served as late as possible.
Menu	• The opportunity to choose from two main dish options, at least for long-term patients. • Fish is served 2–3 times a week and sausage dishes no more than once a week. • The menu cycles for adults and children in an acute hospital are usually 3–5-weeks and at least 5 weeks in long-term care.
Communication	• The patients are informed of the daily menu in writing or via the care facility's electronic information channel. • The wards are regularly informed about food services activities.
Ordering and delivery of meals and products	• The service agreement specifies indicates how to order meals and products and describes the delivery process. • All special diets must correspond to the diet ordered. • Food services delivers the meals ordered to the ward within 15 minutes of the agreed times. • The service agreement contains provisions on the complaint practice, feedback processing, and communication.

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Activities	Quality criteria
Food production safety	• The temperature of food products and food prepared in food services complies with the requirements of food legislation and the self-monitoring plan. • Detailed ingredient information for meals and products is available on the electronic menu or from food services if necessary.
Cost-effectiveness	• Ingredient orders corresponds to the need. • Food preparation corresponds to the daily order. • Waste is monitored for ingredients and prepared food and actions taken if necessary. Waste monitoring can be enhanced, for example, as part of the production management system or by utilising quality control systems.
Customer satisfaction	• The flavour of the food corresponds to patients' preferences. • It is easy for patients to provide continuous feedback on food and meals. • The satisfaction of patients and ward personnel is regularly assessed by means of a survey, for example, once a year. • The results are reported and the activities developed on the basis of those results.
Development and training	• Development work is continuous, either as part of the work or as separate projects. • Nutritional care working groups always include a member from food services. • ood services staff at university and central hospitals include a nutritionist or a nutritional specialist with a university education. • In small units, expertise is acquired as an outsourced service. • Food services personnel receive regular training.
Cooperation with wards	• Nutrition contact persons are appointed for the wards, and food services informs them of current issues. • Ward and food services representatives meet at least once a year to develop the activities. • Food services provides the wards with training according to the agreement. • When food services is outsourced, the wards and the food services provider's quality coordinators cooperate with each other.

6

FOOD TEXTURE MODIFICATIONS

- Texture-modified food is offered in a form that is easy to chew and swallow and served attractively on the plate.
- Texture-modified diets must be supplemented with high-energy and high-protein food items.
- A sufficient amount of energy and protein should be verified using nutrient calculations.
- Changing the texture of food detracts from the appearance and pleasure of food. Texture-modified diets are developed through multi-professional cooperation between food services, a nutritionist and speech therapist and the ward staff. In addition to nutritional content, special attention should be paid to the flavour, colour, structure and serving temperature of food when developing diets and compiling food preparation instructions.
- Oral nutritional supplements (ready-to-eat and powders) are an effective way of increasing the energy and nutrient content of food.
- Nutritionists provide guidance concerning the selection and use of oral nutritional supplements. A speech therapist should be consulted about suitable food texture in cases involving severe swallowing disorders (see Swallowing difficulties p. 185).

Texture-modified food is served to patients whose ability to bite or swallow has deteriorated or when food movement through the pharynx or oesophagus has become more difficult. Factors that can interfere with the ability to bite and swallow include poor condition of the teeth, dentures or oral mucous membranes, oral, pharyngeal and oesophageal diseases and their treatments, and neurological diseases (for example, stroke, ALS, MS and Parkinson's disease), intellectual disabilities and ageing (see Swallowing difficulties p. 185).

Selection of the right texture-modified diet depends on the patient's individual needs, such as their ability to bite and swallow. Each patient undergoes an individual texture need assessment (see evaluation methods, sources Nursing Research Foundation recommendation and multi-level ISSDI Framework). Eating food that is too solid for the patient's needs may be painful or dangerous. Food that is too fine-grained detracts from the appearance and enjoyment of food. (see Table 18).

Table 18. Texture-modified diets

Diets	Description	Need
Soft	The different foods in a soft diet must be soft enough that the diner can mash them with a fork and the food is easy to chew in the mouth.	Mild bite problems, poor teeth and sensitive, dry mouth. Learning to eat.
Coarse purée	A coarse purée diet is good for practising oral motor skills and use of biting muscles. All the foods and ingredients are mashed, but there is some variation in texture. A sufficient amount of coarseness in the food is important for the diner. It is not necessary to take the liquid released from food into account during food preparation.	Biting ability is not sufficient to chew soft food. Missing teeth, poorly fitted dentures. Severe pain and dryness in the mouth and pharynx area. Older adults and patients who are practising oral motor skills. Served after digestive tract surgery during the rehabilitation phase. Parts of this diet can be adapted for gastroparesis patients.

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Diets	Description	Need
Smooth purée (dysphagia)	The foods are thick and does not release any liquid. All foods and ingredients are completely smooth. The food is crumbly and thickened with a thickening powder from the pharmacy that resists amylase in the saliva and makes the food slippery, facilitating the flow of food from the mouth to the pharynx. Ready-to-eat timbales and purées of suitable texture can be used in food preparation. An even texture is essential because the correct food texture prevents food from entering the trachea (aspiration risk). The food texture may change during transport and heating, which means that the food texture must be checked before the serving it to the patient.	When swallowing has become slower or more difficult for neurological or other reasons, such as ALS, MS, Parkinson's disease, cancer treatment complications.
Liquid	This diet is intended for short-term use. The food must be thin enough to drink from a mug. The daily meals are divided between several meals and snacks. A single meal can include approximately 5–7 dl of liquid food. The food is completely smooth, runny and liquid. A liquid diet should be supplemented with oral nutritional supplements.	Narrowing or a tumour in the oesophagus, swelling in the mouth and pharynx area. After oral and digestive tract surgery, usually during the first days.
Liquid, cold	A liquid diet that is served cold. Implementation and texture are otherwise the same as a liquid diet.	On the first few days after certain types of surgery, for example, oral surgery.

Implementation

Texture-modified diets have their own standardised recipes and menus. Simply mashing basic food does not produce a satisfactory result in terms of nutritional content, texture and taste. Realisation of nutritional values should be monitored according to the weekly average obtained using a food calculation program. Texture-modified diets do not always meet fibre intake recommendations. Fibre intake decreases when bread is left out of the diet, and this must be taken into account when planning and implementing the diet, for example, by offering wholegrain porridge and adding fibre supplements (bran, sugar beet fibre, Stimulance fibre supplement) to foods.

Portion images and the menu can be used to inform the patient of the ingredients used to prepare the meal.

In order to make the food appetising and recognisable, the different components of a texture-modified meal should be arranged separately on the plate.

Soft diet

A soft diet mainly includes the same foods and ingredients as a basic health-promoting diet. Vegetables are cooked well and fresh vegetables served in finely grated form. Fresh cucumbers and peeled tomatoes may be offered in thin slices, grated or cubed. Berries with a soft skin, such as strawberries, blueberries and raspberries, can be served as such. Soft fruits like bananas and melons should be selected. Whole meat can be replaced by foods containing sliced or minced meat. Fish dishes are usually suitable as such. Ready-to-eat timbales and purées can be used in food preparation. Serving sauces at meals makes it easier to eat the food. Sufficient fibre intake is ensured by serving soft bread.

A soft diet can be implemented individually by considering things like the patient's ability to bite when selecting bread and pastries.

Coarse purée diet

A coarse purée diet can be based on a basic health-promoting diet if the patient is able to eat bread and cold cuts and selects dairy products or similar products as beverages. In other cases, a coarse purée diet is implemented based on an enriched diet. The meal components are mashed individually using a hand blender so that the patient can taste them separately. Coarse purée food does not need to have an even texture. Ready-to-eat timbales and purées of suitable texture can be used in food preparation. The decrease in energy and nutrient density and diluted flavour caused by adding liquids should be taken into account when mashing the foods. Protein intake can be increased by serving extra snacks, quark, cottage cheese, eggs, plant protein sources and oral nutritional supplements (powders, drinks). Special attention should be paid to the flavour and colours of food. See Appendix 20 p. 322.

Smooth purée (dysphagia) diet

A smooth purée diet is implemented based on an enriched diet. Using an enriched diet keeps the portion size smaller than in the basic diet while simultaneously increasing energy and nutrient density. Small portions motivate patients with swallowing disorders to eat. A smooth purée is obtained by using a grinder to mash the meal components separately. The correct thickness is obtained and excess fluid removed by using an amylase-resistant thickening powder (Nutilis Clear, Thicken Up Clear, Thick & Easy Clear). Ready-to-eat purées can be used to help with thickening during food preparation. The meal components are dispensed separately onto the plate as individual groups. Special attention should be paid to the flavour, appearance and colours of food. Any unfavourable changes in the texture of the food and possible hardening occurring after food distribution, transport and reheating should also be prevented.

Liquid diet

A liquid diet can easily be inadequate in terms of energy and nutritional content. Separate food preparation instructions and menu are planned for a liquid diet. The food is completely smooth, runny and liquid. Ready-to-eat purées of suitable texture can be used in food preparation. Oral nutritional supplements are essential if a patient requires a liquid diet for more than 3–4 days.

More detailed information on implementing texture-modified diets is available in Table 19 p. 130 and a summary of texture-modified diet implementation is provided in Table 20 a–d p. 131–132).

Table 19. Examples of suitable foods

Soft	Coarse purée	Smooth purée	Liquid
Dishes containing minced or thinly sliced meat, fish, eggs, cold cuts sauces cooked vegetables, finely grated vegetables soft berries and fruit soft bread and pastries dairy products	Dishes containing minced beef, pork and chicken, served as a coarse purée hummus, soft tofu, cooked legumes (also in ground or powder form) omelette potato and vegetable purée kissel porridge flakes, softened bread* most dairy products soya yoghurt/quark	Meat and fish as smooth purées or timbales, hummus, soft tofu, mashed potato and vegetable as smooth purées or timbales, fruit and berry purée with an even texture, flour porridges, pudding, curd milk, smooth yoghurt, quark and smoothie, milkshake, soya yoghurt/quark	Meat, fish or vegetable purée soup, juice soup, thin smooth kissel, 100% fruit juice supplemented flour gruel milk, buttermilk, smooth yoghurt, milkshake, smoothie, ice cream

* Softened bread, which has been softened with e.g. thickened liquid broth.

Activities in the ward

The patient's drinks and fluids are thickened in the ward if necessary. For example, individual choices regarding bread, cold cuts, fresh vegetables and fruit are agreed with the patient.

A patient with a smooth purée diet is monitored daily and weighed 2–3 times a week. A nutritionist should be consulted if the patient does not eat enough or loses weight.

Thickening food and beverages for patients who have difficulty swallowing and dysphagia patients

Thickening of liquids, broths and soups is often necessary in connection with swallowing problems. Thickened food and drink are safer to swallow and the risk of aspiration (inhaling) is much lower.

The composition of liquids can be changed with powder-like thickening agents available at pharmacies. The powder can be added to cold and hot drinks, soups and oral nutritional supplements (see Appendix 21 p. 323). Thickening of liquids). The composition should be selected according to each patient's needs. Consultation with a speech therapist can be requested if necessary (see Swallowing difficulties p. 185).

Table 20 a. Implementing a soft diet in the ward

Meal	Implementation
Breakfast	Soft bread, fat spread, porridge (pat of margarine) and the cheese/cold cuts listed on the menu or a plant-protein based spread. Soft tomato slices are usually suitable on bread. 100% fruit juice and juice soup are suitable as such.
Lunch	Soft bread and fat spread in addition to the lunch meal. Bread ensures sufficient fibre intake for the patient. Sauce with discreet food items.
Snack	The snacks included in the basic diet are usually suitable.
Dinner	Soft bread and fat spread in addition to the dinner meal. Bread ensures sufficient fibre intake for the patient.
Evening snack	Soft bread, fat spread and the cheese/cold cuts listed on the menu or hummus or some other plant-protein based spread. If the patient is unable to eat cucum-ber or tomato, they can be replaced with juice soup.

Table 20 b. Implementing a coarse purée diet in the ward

Meal	Implementation
Breakfast	In addition to morning porridge, curd milk, yoghurt or a plant protein-based product as well as softened bread, fat spread. 100% fruit juice and juice soup are suitable as such.
Lunch	In addition to the lunch meal, softened bread if this suits the patient's individual needs Some desserts from the patient menu are suitable as such, for example, kissels, yoghurts and quarks.
Snack	Some snacks from the patient menu are suitable as such, for example, kissels and yoghurts.
Dinner	Softened bread in addition to the dinner meal. Some desserts from the patient menu are suitable as such, for example, kissels, yoghurts and quarks.
Evening snack	Curd milk, yoghurt or plant protein-based product, juice and juice soup and softened bread and bread fat.

Table 20 c. Implementing a smooth purée (dysphagia) diet in the ward

Meal	Implementation
Breakfast	Porridge with a smooth texture and a pad of margarine Smooth curd milk, yo-ghurt or a plant protein-based product served in addition to the porridge. Liquid beverages are thickened with products from a pharmacy. No bread.
Lunch	The drink served with the lunch meal is thickened with a pharmacy product. No bread. Smooth puréed dessert.
Snack	Smooth puréed snack.
Dinner	The drink served with the dinner meal is thickened with a pharmacy product. No bread. Smooth puréed dessert
Evening snack	Smooth curd milk, yoghurt or a plant protein-based product, juice and juice soup. Liquids and beverages are thickened with a pharmacy product. No bread.

Table 20 d. Implementing a liquid diet in the ward

Meal	Implementation
Breakfast	Gruel, margarine. Also a yoghurt drink or plant protein-based product. 100% fruit juice and juice soup are suitable as such.
Lunch	In addition to soup, preferably milk, buttermilk or a plant-based drink as well as gruel.
Dessert till lunchen/ mellanmål	A liquid snack or oral nutritional supplement.
Dinner	In addition to soup, preferably milk, buttermilk or a plant-based drink as well as gruel.
Evening snack	A yoghurt drink or a plant protein-based product, juice and juice soup.
Late evening snack	An oral nutritional supplement

Nutrition counselling

If the patient needs a coarse or smooth purée or liquid diet for a long time, their nutritional status must be monitored regularly. The physician and nurses in the care unit must provide patients with advice and counselling about implementing a nutritionally sufficiently texture-modified diet at home, the related risk of malnutrition and its prevention. Patients with progressive or severe neurological swallowing difficulty, patients with a long-term need for a liquid diet, and patients at risk of malnutrition should be referred to a nutritionist (see Instructions – Ward patient p. 41).

Medicines and food supplements that require special attention

The thickness of food supplements must be taken into account in a texture-modified diet. Medicines should be given to the patient in a suitable form and structure as instructed by a pharmacist.

SOURCES p. 352

7

ENRICHING NUTRIENT INTAKE

A patient found to be at risk of malnutrition during screening (NRS 2002 ≥ 3 in an adult) or who is diagnosed with malnutrition as a result of nutritional status assessment requires enhanced nutritional care, an individual plan and individual nutrition counselling. Enhanced nutritional care can be implemented in several ways (Table 21), and different forms of treatment can be used in parallel based on the patient's clinical condition.

Table 21. Methods for enhancing nutritional care

- Enriched diet
- Preferred foods, extra snacks
- Oral nutritional supplements
- Enteral nutrition
- Intravenous nutrition
- Special preparations for babies

The risk of refeeding syndrome in the early stages of care should be taken into account when enriching nutrition among people who have severe malnutrition. In these patients, increasing energy intake gradually towards the target, providing electrolyte and nutrient supplements, and close monitoring of the patient's condition – including blood tests – are necessary to prevent refeeding syndrome (see Refeeding syndrome p. 156). The risk of refeeding syndrome is usually low when the patient's nutrition is enriched orally.

Enriched diet

- An enriched diet is intended to prevent and treat malnutrition and for patients with a poor appetite.
- An enriched diet involved increasing the energy and protein density of the food, which reduces portion size.
- If necessary, an enhanced diet is prepared in a texture-modified form or as a special diet.

Main dishes are supplemented with soft fat sources, such as vegetable oils and vegetable fat products (fat spreads, liquid margarines) and plant-based products used like cream. The amount of dairy products may be higher than in the basic diet. The amount of fish, meat and vegetable protein sources is higher per portion than in the basic diet. Vegetables contain very little energy, so plenty of salad dressing should be added to salads and, for example, flavoured oil or vegetable fat spread added to hot vegetables. Quark and yoghurt-based desserts should be favoured. Foods can be supplemented with maltodextrin powders (Fantomalt, Resource Energy), protein powder (Protifar) and balanced powders (Nutrison and Resource Complete).

An enriched diet is based on the basic diet portion sizes. The portion size is ½–⅔ of the basic diet portion so that it is also possible for a patient with a poor appetite to eat the entire meal. In practice, this means that the S portion size contains the same amount of energy and protein as the M portion size. Good flavour is extremely important in the diet, as only food that is eaten can improve nutrition and promote healing and recovery. If desired, the patient can season their food using the selection of spices available in the ward. See Energy levels of an enriched diet in comparison with the basic diet (Table 22 p. 136).

An enriched diet contains more fat than a basic diet, which makes it possible to reduce portion size without affecting the energy content. In addition to the above-mentioned sources of soft fat, products such as fish, nuts, seeds, tofu and oil-based salad dressings contain soft fat. Sources of hard fat, such as butter, cream and fatty cheeses, can only be used occasionally because hard fat has an unfavourable effect on glucose metabolism, low-grade inflammation, liver metabolism and preserving muscle mass. An enriched diet should also take sufficient protein intake into account. The amount of protein should be 15–20 E%. The main meals (lunch and dinner) must provide approximately 25 g/meal. The evening snack should contain protein.

In order to improve nutrition intake, preferred meals (menu of favourite foods p. 136) should also be offered. The night-time fast (the time between the evening snack and breakfast) should not exceed 10–11 hours.

Example of the menu of favourite foods

Table 22. The energy levels and protein content of basic, high-protein and enriched diets at different energy levels for menu planning

Diet	Energy levels and protein content		
	(S) 1,400–1,600 kcal/day	(M) 1,800–2,000 kcal/day	(L) 2,200–2,400 kcal/day
Basic* g/day	60–70	80–90	100–110
High-protein ** g/day	80–90 (70)	100–115 (90)	125–140 (110)

Diet	Energy levels and protein content		
Enriched* g/day	(S) 1,800–2,000 kcal/day	(M) 2,200–2,400 kcal/day	(L) 2,600–2,800 kcal/day
	80–90 (75)	100–110 (95)	120–130 (115)

* Protein in the basic and enriched diet is 15–20 E% (average 18 E% during menu planning).
** Protein in the basic and enriched diet is 20–25 E% (average 23 E% during menu planning).
The figures presented in brackets are the minimum objectives for protein content in food services. If the target cannot be achieved, protein intake should be enhanced with an oral nutritional supplement.

Food services

An enriched diet can the applicable elements of the basic diet. Separate recipes designed for an enriched diet should include plenty of soft dietary fats, foods with high protein content and oral nutritional supplements to ensure that small portions have sufficient energy and nutrient density and are also tasty. Fibre content in an enriched diet should be kept as close as possible to the amount of fibre in the basic diet, for example, by using fibre supplements and an oral nutritional supplement (Stimulance) in food preparation. An enriched diet follows the basic diet recommendation regarding quality of fat. Nutrient content sufficiency is checked by calculations at a weekly level. Food choices for an enriched diet are presented in Table 23 p. 138.

Table 23. Food choices for an enriched diet

Food group	Recommended foods and ingredients
Milk and dairy products; and products used in the same way	High-protein milk. The fat content of milk and buttermilk should be selected according to the patient's eating habits. Dairy products (yoghurts, curd milk and quark, fat ≤ 1%). High-protein non-dairy snack products. Vegetable fat products and plant-based products used like cream for food preparation. Plant-based beverages (e.g. soya, oat drinks). In terms of plant-based products, soya products contain the most protein. Yoghurt and quark-type products. Cheese, cottage cheese, home-made cheese and bread cheese.
Meat, poultry, fish, eggs and plant-based protein sources	An enriched diet can also include the same cuts of meat and cold cuts as the basic diet. The amounts can be higher than in the basic diet. Fish can be used in the same way as in the basic diet. Fatty fish are recommended. Eggs can be used as such and as a protein product. Soya products, products containing mushroom protein and egg (e.g. Quorn®), oat and bean products, strips and mince.
Cereal products	Cereal products are used in the same way as in a basic diet. Pastries can be served more often than in the basic diet.
Potato	Potatoes should preferably be served as mash and enriched with vegetable margarine, liquid margarine and vegetable fat products used like cream.
Vegetables, fruit, berries and nuts	As in the basic diet, but fruit and berry kissels should be enriched with maltodextrin. Nuts, almonds and seeds are rich in energy. They can be added as a powder, for example, also in an enriched vegetarian diet.
Sugar and sugary products	As in the basic diet. With a few exceptions (e.g. ice cream), desserts should be served in enriched form (see Appendix 20 p. 322)
Spices and sauces	An enriched diet includes more salad dressing (vegetable oil-based) than the basic diet. If necessary, sauces should be supplemented with suitable food items or oral nutritional supplements.
Fats	Use of vegetable oils, vegetable fat spreads and liquid margarine is more than normal.
Others	Ready-to-eat oral nutritional supplements as snacks as needed.

Activities in the ward

The patient should eat every 2–3 hours. Based on their preferences, the patient should be offered snacks containing a lot of energy and protein (see Table 26 p. 142–143). The quantities of food eaten should be monitored using a monitoring form (see Appendix 14 p. 306). Portion size is changed if necessary. Dental care should be enhanced due to the extra snacks. Oral nutritional supplements effectively increase the amount of energy and protein in the diet. They are served as snacks and are a convenient way of shortening the night-time fast. (see Table 24)

The patient should be weighed 2–3 times a week. Methods for improving nutrient intake should be increased if the patient loses weight.

Table 24. Methods for implementing an enriched diet in the ward

Meal	Implementation
Breakfast	Add a pat of fat or jam to porridge, milk or buttermilk or high-protein milk*, double portion of cold cuts/cheese. Also take into account other diets related to an enriched diet, such as a vegetarian diet. In this case, serve hummus/peanut butter/vegan cheese-type product/seed spread. Also serve eggs/protein cut (egg white).
Lunch and dinner	More fat spread than normally, primarily a vegetable fat spread. Cold cuts on bread. Serve high-protein milk or other dairy products, and an oil-based salad dressing with salad. Order the patient's preferred meal if necessary.
Snack	Order extra portions of the patient's favourite snacks if necessary. An oral nutritional supplement drink or pudding. Nuts and snack cookies.
Evening snack	Milk, buttermilk or high-protein milk, egg/protein cut (egg white), double portion of cold cuts/cheese or hummus/peanut butter/ vegan cheese-type product /seed spread.
Late evening snack	If necessary to achieve sufficiently short night-time fast (no more than 10–11 hours). For example, an oral nutritional supplement drink or pudding.

* For example, Plus™ milk contains more milk protein than regular milk and also has added calcium, magnesium and vitamin D.

Nutrition counselling

Patients at risk of malnutrition (NRS 2002 ≥ 3) need individual counselling and diet enrichment (see Instructions – Ward patient p. 41). Individual counselling provided by a nutritionist is particularly important for patients who have a risk of severe malnutrition (NRS 2002 ≥ 5) or also need other special diets in addition to an enriched diet. The continuity of nutritional care must be ensured at the further treatment location and at home (see Enriching nutrient intake p. 134). Nutrition counselling is provided to the patient and their family if necessary.

Enriched food portion

Mashed potatoes 1 dl with vegetable fat supplement, pork roast sauce 120 g, containing more meat than the basic sauce as well as a carbohydrate and vegetable oil supplement, baby carrots 0.5 dl, mandarin-iceberg lettuce salad 1dl, with rapeseed oil 5 g + salad dressing 2 tsp, fat-free milk 1 dl, berry quark dessert 1 dl with a protein supplement. The enriched meal contains approximately 580 kcal and 27 g of protein (19 E%).

SOURCES p. 352

High-protein diet

- A high-protein diet contains a lot of protein, and energy according to the patient's individual needs. For example, it is suitable for acutely ill overweight or obese patients and older adults.
- A high-protein diet contains more food and ingredients that are good sources of protein than a normal diet.
- If necessary, a high-protein diet is prepared as a texture-modified or special diet.

A high protein diet is needed in situations where the patient's need for protein has increased but their energy requirement is moderate. These cases can involve overweight or obese patients, wound patients with a low level of physical activity, or older patients recovering from major surgery. The diet is not suitable for people with advanced renal failure.

Implementation

The meal is supplemented with high-protein products. Meals can be supplemented with various dairy products, cottage cheese and egg/egg white. The amount of fish, meat and vegetable protein sources is higher per portion than in the basic diet. The amounts of cold cuts and cheese served in morning and evening snacks can be higher than in the basic diet. Milk-based products are good sources of protein and are used more than in a basic diet. The protein content in the diet is usually significantly lower if these are replaced by plant-based products. In terms of plant protein, soya products are the best sources of protein.

If necessary, the patient's preferred foods and a menu of favourite foods can be utilised to improve nutrient intake.

Food services

A high-protein diet follows a basic health-promoting diet in all ways except for the amount of protein (see Table 25 p. 142). Separate food preparation instructions and menu are planned for a high-protein diet utilising the recipes for an enriched diet. Nutrient content sufficiency is checked by calculations at a weekly level. The wards must be aware of the average energy and protein content of meals (see Table 22 p. 136 on energy levels and protein content compared to the basic diet) and have a description of how to implement the diet in practice (see Table 27 p. 144).

Table 25. Energy and nutritional content in a high-protein diet

Nutrient	Recommendation
Energi, kcal/day	1,800–2,400, portion sizes: M, L
Protein, E%	20–25
Fat, E%	30–35
• Saturated fatty acids, E%	< 10
• Monounsaturated fatty acids, E%	10–20
• Polyunsaturated fatty acids, of which n-3 fatty acids, E%	5–10 at least 1
Carbohydrates, E%	40–45
• Sugar, E%	< 10
Dietary fibre, g/day	3 g/MJ (13 g/1000 kcal)
Vitamins	National Nutrition Council recommendation (Appendix 17 a. p. 315)
Minerals	National Nutrition Council recommendation (Appendix 17 b. p. 316)
Salt, g/day	< 5 for portion size M

Adapted from the National Nutrition Council's Finnish nutrition recommendations (2014) and the recommendation of the ESS Group (2003). https://doi.org/10.1016/j.clnu.2021.09.039.

Table 26. Protein-rich products for an enriched and high-protein diet. Protein amounts are averages

Breakfast porridges	Protein/ serving
Porridge made with water, e.g. oatmeal (200 g)	4 g
Porridge with powdered milk, e.g. oatmeal (200 g)	10 g
Porridge with milk, e.g. oatmeal (150 g)	7 g
Bread	**Protein/ serving**
Karelian pasty (1 pce)	3 g
Rye bread (1 slice)	2,5 g
Wheat bread (1 slice)	2 g

Yoghurts, curd milks, snacks	Protein/ serving
Ice cream (cone 60 g)	2 g
Chocolate pudding (125 g)	4 g
Yoghurt (150 g)	6 g
Soya-based snack product (alternative to yoghurt) (150 g)	5,5 g
Oat-based snack product (alternative to yoghurt) (125 g)	1,5 g
Whipped quark (100 g)	5,5 g
Fruit quark (200 g)	14 g
Curd milk (200 g)	6 g

High-protein snacks	Protein/ serving
Protein yoghurt (175 g)	15 g
Dairy quark (200 g)	20 g
Protein drink (2.5 dl)	20 g
Protein pudding (180 g)	20 g
High-protein soya product (150 g)	12 g
High-protein oat snack (200 g)	10 g
Nut pouch (40 g)	9 g
Cold cuts, cheeses, eggs	**Protein/ serving**
Egg butter (2 tbsp)	3 g
Egg white (50 g)	10 g
Ham sausage (2 slices)	3 g
Turkey cold cut or cured ham (2 slices)	4 g
Egg (1 pce)	7 g
Cheese slice (2 slices)	6 g
Cheese slice, vegan	0.2 g
Omelette (150 g)	15 g
Cottage cheese (100 g)	13 g
Hummus (2 tbsp)	2 g
Plant-based paté (2 tbsp)	2 g
Tofu, solid (2 tbsp)	5 g
Nut paté (1 tbsp)	4 g

Energy-rich side dishes	Protein/ serving
Mashed potato, basic (150 g)	2 g
Mashed potato, with vegetable fat cream and milk powder (150 g)	4 g
Scalloped potatoes (120 g)	2 g
Cheese scalloped potatoes (120 g)	4 g
Rice, cooked (120 g)	3 g
Wholegrain pasta, cooked (120 g)	6 g
Beverages	**Protein/ serving**
Milk (1.5 dl)	5 g
Buttermilk (1.5 dl)	5 g
High-protein milk (1.5 dl)	7,5 g
Soya drink (1.5 dl)	5 g
Oat drink (1.5 dl)	1,8 g
Soya product similar to quark (1.5 dl)	7,5 g

Activities in the ward

The special features of a high-protein diet in comparison to the basic diet are presented in Table 27 p. 144.

The patient is encouraged to choose milk, buttermilk or soya drinks with their food. The patient can be served protein-rich snacks (for example, quarks, milkshakes, puddings, yoghurts, with consideration to allergies and other special dietary needs). The patient's food use should be monitored, as an adequate energy intake is a prerequisite for protein utilisation in the body. Food use is monitored using a food use monitoring form (see Appendix 14 p. 306), and the diet modified if necessary to ensure sufficient protein intake. Oral nutritional supplements effectively increase the amount of protein in the diet.

Table 27. Special features of a high-protein diet in comparison to the basic diet

Meal	Add to the meal
Breakfast and evening snack	Milk, buttermilk, protein-rich milk*, double portion of cold cuts/ cheese/plant-based paté* */hummus/peanut butter/seed spread. Egg/protein cut (egg white). Take other diets, such as a vegetarian diet, into account.
Lunch and dinner	Milk, buttermilk, high-protein milk. The patient's preferred meal if necessary. Cold cuts or another source of protein on bread (see breakfast and even-ing snack).
Snack	The patient's favourite snacks if necessary. Nuts and snack cookies are easy to serve between meals.
Late evening snack	In order to ensure a sufficiently short night-time fast (no more than 10–11 hours). A source of protein, such as an oral nutritional supplement drink or pudding, yoghurt, curd milk or quark or a plant protein product used in the same way.

* For example, Plus milk™ contains more milk protein than regular milk and also has added calcium, magnesium and vitamin D.
** For example, Tartex™ paté spread is made from dietary yeast, liquid vegetable fats, herbs, spices and vegetables.



Nutrition counselling

Nutritional care for patients who need a high-protein diet is implemented in cooperation with a multi-professional care team. A nutritionist should be consulted if recovery does not progress or the patient is not eating the food. Individual counselling provided by a nutritionist is particularly important for patients who also need other special diets in addition to a high-protein diet. The continuity of nutritional care must be ensured at the further treatment location and at home.

SOURCES p. 352

Oral nutritional supplements

In addition to foods (see Enriched diet p. 135), nutrient intake can be improved by means of oral nutritional supplements. Thorough and concrete instructions regarding oral nutritional supplements and their use are necessary. The nursing staff must be familiar with the products.

The indications for use of oral nutritional supplements are:

- insufficient nutrient intake
- poor appetite
- increased need for nutrition
- eating difficulties
- absorption disturbances

Oral nutritional supplements can be divided as follows:

- powdered products
- balanced, ready-to-eat products (beverages, pudding-type products)
- fat supplements.

Food thickening is discussed in the section that deals with difficulties related to swallowing (see Swallowing difficulties p. 185).

1 package of high-energy oral nutritional supplement drink contains the same amount of energy and protein as the average S lunch portion (approximately 400 kcal and 18–28 g protein)

Ready-to-eat oral nutritional supplements

The majority of ready-to-eat oral nutritional supplements are beverages. The energy content of the products is displayed in kilocalories/ml, for example, 1.5, 2.0 or 2.5. The maximum energy content is currently 3.2 kcal/ml. Package sizes range from 125 to 200 ml and the energy content is 250–480 kcal/package. The protein content is 8–29 g/package.

The protein content in high-protein products is 18–28 g/package. These products are used when the need for protein is particularly high or sufficient intake is difficult to achieve, protein intake from other nutrition is too low, or the patient has protein loss. For the majority of people who need these products, the option containing a normal amount of protein is suitable. Inappropriate use of a high-protein product, especially in overly large single servings, may in the worst case reduce nutrient intake by causing the patient to feel very full.

The majority of the products are similar to milkshakes. Some of them contain fibre. Clear, juice-like products may be more suitable than milkshake-type products if the client suffers from nausea, mucous or has difficulty swallowing. Juice-like products usually contain less protein than milkshake products and they do not contain any fibre. Their carbohydrate content is higher than milkshake products, which should be taken into account with diabetics in particular.

Some milkshake-style products have a similar nutritional content to enteral nutrition products, which makes them suitable as the only source of nutrition if necessary. Very high-energy products are suitable when the patient needs a lot of energy, is on restricted fluids or has difficulty meeting the energy need with other products.

Some ready-to-eat oral nutritional supplements are designed to supplement the nutrient intake of certain patient groups: diabetics, predialysis and dialysis patients, obstructive pulmonary disease patients and older adults. With the exception of predialysis and dialysis patients, so-called ordinary products are also suitable for these special groups. A product containing fibre should be selected for diabetics. The product designed to treat early-onset Alzheimer's disease differs from other products in terms of energy and protein content. Attention should be paid to sufficient energy and protein intake when using it. The product in question should not be used with other patient groups.

The majority of products intended for adults are suitable for children aged 3 or 6. As a result, there are only a few milkshake and smoothie-type products and a pudding-like product on the market that are intended for children.

The number of products used should be planned according to the situation. A nutritionist plans product use in relation to the patient's nutrient intake and with consideration to their special needs. They are usually served as snacks, but also as the primary or even the only source of nutrition if necessary.

The flavour options are sweet or neutral. Neutral options are often more suitable than sweet flavours for patients who have changes in sense of taste.

Serving temperature has an important impact on flavour. A cold product is often the preferred choice. The products can be used to make ice cubes, parfaits, ice cream, mixed with products like mineral water, or they can be used as a base for milkshakes.

Neutral- flavoured products can also be added to savoury food or seasoned with, for example, broth preparations.

Pudding-type products eaten with a spoon are particularly suitable for patients who have difficulty swallowing. They also provide variation in the diet, especially if the need to use oral nutritional supplements continues for a long time.

Fat supplements

Fat supplements are used to increase energy intake in situations where food amounts are small or a patient has a strict fluid restriction or has difficulty getting enough energy. Some of the products require absorption of normal fats. Others are suitable for patients with disturbances in fat absorption. An example portion of these products is 3 x 30–40 ml/day. The products leave a fatty feeling in the mouth, which is why it is usually best to take them in conjunction with a meal. Some fat supplements contain a small amount of protein and carbohydrates as well as some vitamins and minerals. A fat supplement containing no phosphorus or potassium should be selected for kidney patients.

Powdered oral nutritional supplements

The range of powdered products on the market includes

- products containing only energy (maltodextrin))
- a product containing nearly only proteins (appr. 90%)
- products containing a variety of nutrients
- a protein-free product containing fats and carbohydrates
- a fibre supplement.

The products are mixed with other food. Maltodextrin has no flavour and does not colour the food, so it offers a wide range of uses. Protein products have a mild egg-like aftertaste and they make the food light-coloured. They are best suited for gruels, porridge, milkshakes and dairy products like yoghurt, mashed potatoes, sauces and other light-coloured foods. The fibre supplement feels grainy in the mouth, so it is best suited for coarser foods.

Food services may use powdered products to ensure that the food has sufficient nutritional content. Oral nutritional supplement drinks and/or fat supplements that are served in the ward are often used with them.

Eligibility for reimbursement

The use of oral nutritional supplements often has to be continued at the further treatment location or after the patient has been discharged. Some of the products are eligible for reimbursement by Kela according to certain criteria. Products under reimbursement code 601 (Severe malabsorption of nutrients, mainly fats) are reimbursed in the following situations: complete gastrectomy; exocrine pancreatic insufficiency caused by chronic inflammation of the pancreas or pancreatomy; malabsorption

of fats or fat soluble vitamins associated with chronic liver or bile duct diseases; inflammation associated with malabsorption of fats and bile acids due to extensive resection of the small intestine or extensive inflammation of the small intestine, such as Crohn's disease. Products under reimbursement code 503 (Inborn metabolic disorders) are also reimbursable. In addition, reimbursement code 602 Children's severe malnutrition is also in use for children. Malnutrition in adults is not covered by KELA reimbursement. A physician provides a prescription for the products and a medical certificate B indicating the appropriate reimbursement code.

Enteral nutrition

Enteral nutrition should be used if eating orally is not possible or safe (Table 28), but the patient has a functional digestive tract. Supplementary enteral nutrition is also needed in patients who have malnutrition or are at risk of malnutrition and in some patients recovering from surgery when nutrient intake is inadequate (Table 29 p. 149). Enteral nutrition is always the primary nutrition route in comparison to intravenous nutrition: enteral nutrition is more physiological, less expensive and safer than intravenous nutrition.

Table 28. Diseases and conditions that may involve the need for enteral nutrition

- Cancers – especially in the head, neck and oesophagus – and the related treatments that prevent oral eating
- Neurological diseases and conditions that cause difficulty swallowing or eating (e.g. CP disability, post-stroke condition, brain tumours, ALS, Parkinson's disease)
- Gastrointestinal diseases (e.g. Crohn's disease, gastroparesis, short-bowel syndrome, congenital malformations of the oesophagus)
- Children's eating difficulties (e.g. due to prematurity)
- Intellectual disability and various hereditary syndromes leading to intellectual disability
- Lack of appetite due to illness or the required treatments
- Post-surgical status (e.g. surgery in the neck and upper digestive tract)
- Prolonged intensive care requiring sedation
- Hypermetabolism caused by illness (e.g. extensive burn, multiple injury patient)
- Life-threatening malnutrition (e.g. in patients with anorexia nervosa)
- Chronic fatigue syndrome ME/CFS

Table 29. Timing the start of enteral nutrition in adults

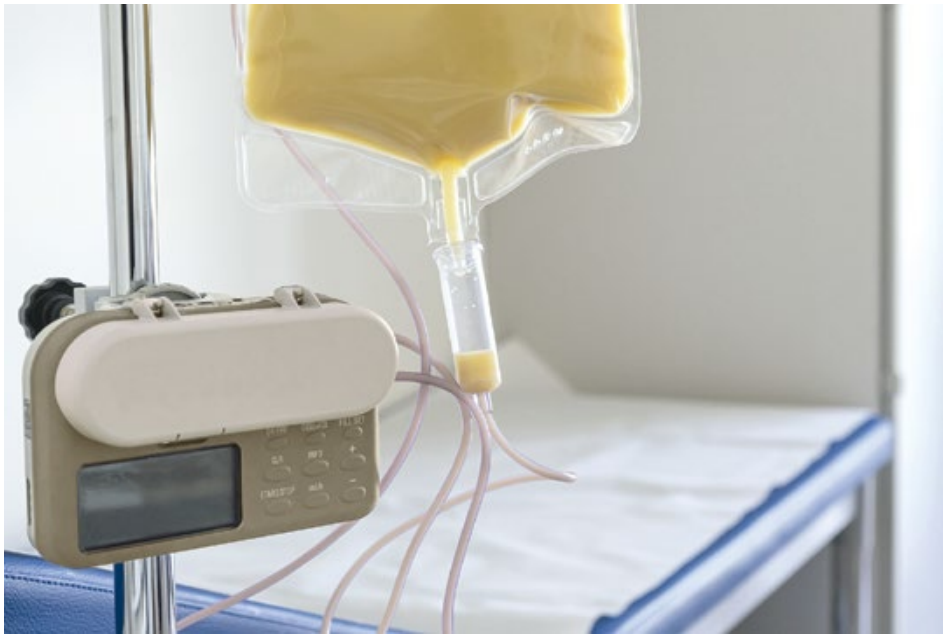
Nutrient intake	Patient condition	When to start?
Nutrient intake is not possible orally or remains insufficient (less than 75% of need)	Good nutritional status, clinically stable	After 5–7 days
	Risk of malnutrition (NRS 2002 3–4)	In 3–5 days
	Risk of severe malnutrition (NRS 2002 5–7)	Immediately

The expected duration of enteral nutrition influences the route of administration. A nasogastric tube is used for short-term (less than 4 weeks) enteral nutrition. If there is no need for stomach drainage, a thin and soft tube intended for nutrition purposes is recommended (8–10 CH for adults and children over 5 years of age, 8 CH for preschool-aged children, 6 CH for breastfeeding babies, 4 CH for premature infants and 5 CH for other newborns). Once the tube has been inserted through the nostrils into the digestive tract, it must be switched to the other nostril every two weeks to prevent pressure damage. A gastrostomy (PEG) or jejunostomy should be considered for long-term (more than 4 weeks) enteral nutrition: in this case, the tube is inserted through the abdominal wall into the digestive tract by means of endoscopy or surgery.

Enteral nutrition is typically implemented using a tube inserted into the stomach. A delivery tube inserted into the small intestine is used if the patient has problems with emptying the stomach (e.g. gastroparesis) and the patient has a high risk of aspiration, the stomach has been partially or completely removed, or if there is a desire to protect the anastomosis area located high in the digestive tract. There are also dual-purpose tubes on the market, in which one canal is used for jejunal feeding and the other to empty the contents of the stomach.

Reasons for enteral nutrition in children include inability to eat at all or insufficient nutrient intake with only oral eating. In practice, the transition to tubing nutrition is considered on a case-by-case basis when oral nutrition is not sufficient to safeguard the child's normal growth and development, or when malnutrition is considered an immediate threat to health. If the estimated need for enteral nutrition is several weeks, a gastrostomy should be considered because it does not interfere with the child's own eating as much as a nasogastric tube. Enteral nutrition for a child with malnutrition should be started with caution by gradually increasing the amount while taking into account sufficient fluid intake at all times.

The benefits of nutritional care must be greater than the adverse effects, and the care must maintain or improve the patient's nutritional status, quality of life and functional capacity. For these reasons, long-term enteral nutrition is not justified in, for example, patients with advanced memory disorders even if their nutritional status has deteriorated. In situations where the patient's life expectancy is short (less than one month), improving the effectiveness of nutritional care by means of enteral nutrition is not justified either (see Palliative care p. 260).



Implementation of enteral nutrition

Enteral nutrition is always started slowly to prevent gastrointestinal and metabolic problems (see Appendix 22 p. 325). The risk of refeeding syndrome should also be assessed (see Refeeding syndrome p. 156) when starting enteral nutrition. The sicker a patient is and the longer the digestive tract has been unused, the slower the start should be. The dosage is gradually increased towards the target specified for the patient in accordance with the patient's tolerance. An adequate energy supply is usually achieved within a few days in clinically stable patients.

The patient needs an individual plan for enteral nutrition that is prepared by a nutritionist. The plan must be updated regularly – at least once a year in long-term patients, every six months for paediatric patients and whenever the situation changes – in order to correspond to the patient's clinical situation, nutritional status and age-appropriate needs. Planning of dosage selection and delivery route in long-term enteral nutrition should always involve choosing the most pleasant option for the patient on the basis of their lifestyle and requests. The enteral nutrition plan must be appropriately recorded in the patient information system, and its transfer to the further treatment location, home care or residential service unit ensured. The weight and nutritional status of patients receiving enteral nutrition should be monitored at least weekly in their care unit. The patient's weight is also monitored at home. Regular monitoring of growth and development is essential for paediatric patients. If necessary, the enteral nutrition plan is changed immediately.

Using a nutrition delivery pump facilitates the implementation of enteral nutrition. The pump steadily and slowly dispenses the enteral nutrition at the set pace. The enteral nutrition product can be administered in single doses (for example, according to normal meal times; this requires placement of the tube end in the stomach). A single dose should be dispensed over a period of least 20 minutes. The size of a single dose should not exceed 300–400 ml. Whenever possible, an age-appropriate meal rhythm is also the objective when dispensing enteral nutrition for children.

An 8-hour break in enteral nutrition should be taken at night. Enteral nutrition can also be administered as an intermittent (for example, to supplement nutrient intake at night) or continuous feed, even for 24 hours per day (if the patient can only tolerate very slow administration). Single doses delivered into the small intestine are not possible, so a continuous feed is always administered using an enteral nutrition pump. In this case, 80–100 ml/h is the highest tolerated rate for most patients.

The enteral nutrition products and water dispensed into the tube must be at room temperature. If possible, the patient should be seated or in a semi-reclining position during enteral nutrition and for 30–45 minutes after administration.

Only industrial, nutritionally balanced and hygienic enteral nutrition products may be used. The enteral nutrition product is selected for each patient based on their clinical condition and nutritional needs (see Figure 11 p. 152).

- A whole protein-based basic product containing fibre (1 kcal/ml) is suitable for many patients when starting enteral nutrition. Fibre promotes bowel function and helps to maintain the microbiota of the digestive tract.
- A high-energy product (1.5–2 kcal/ml) is required if the patient's energy needs have increased, if the patient has a fluid restriction, or if the patient can only tolerates a limited amount of enteral nutrition product.
- A disease-specific preparation may be necessary in the case of nutrient intolerance (e.g. milk protein) or absorption disorders (e.g. fat absorption disorder due to exocrine pancreatic insufficiency).

The patient's need for food and fluid should be assessed in the manner presented in section 3 (see p. 45). Enteral nutrition products contain approximately 80% water, so the patient almost always needs additional fluids via the tube, orally or intravenously. Good quality tap water can be added to the tube either in single doses or as a continuous drip.

The attending physician provides the patient with a prescription for enteral nutrition products and a medical certificate B for Kela reimbursement (code 504: Conditions requiring daily forced enteral nutrition).

The patient receives the care supplies needed to implement enteral nutrition from the medical supplies distribution point in their home municipality, and the patient also receives a medical supplies certificate for this purpose.

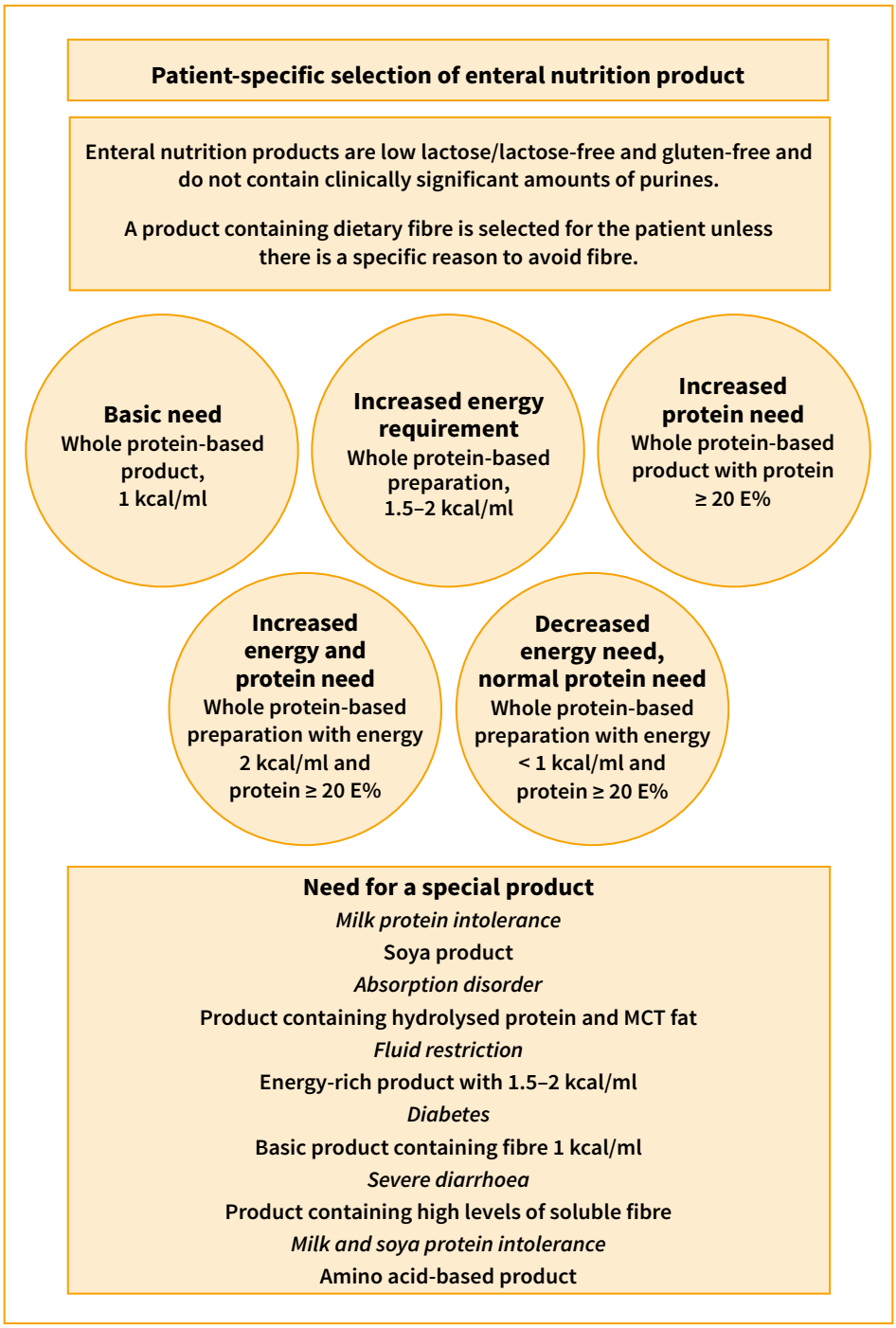


Figure 11. Selecting an enteral nutrition product

Nutrition counselling

A physician discusses the need for enteral nutrition with the patient and family, makes a decision on starting enteral nutrition and the most suitable delivery route, and provides a prescription for enteral nutrition products and the delivery route according to the patient's individual plan or based on the care unit protocol if an individual plan is not available. The nursing staff implements enteral nutrition in practice: they dispenses the enteral nutrition product and water into the tube according to the plan and ensure that the tube and possible stoma canal are in good condition. The nursing staff provide the patient and, if necessary, their family with guidance concerning practical implementation of enteral nutrition. A PEG nurse or stoma nurse participates in the guidance and care of PEG enteral nutrition patients. It would be important for each care unit to have a nurse familiar with PEG treatment.

A nutritionist prepares an individual enteral nutrition plan for patients who receive enteral nutrition in an inpatient ward for more than 3 days and for patients who are discharged or moved to a further treatment or rehabilitation unit while still using enteral nutrition. The nutritionist participates in monitoring adult patients with long-term enteral nutrition at least annually and paediatric patients at least every six months. The unit responsible for monitoring enteral nutrition must be designated in the patient's care plan.

▶ SOURCES p. 353

Parenteral (intravenous) nutrition

Intravenous (parenteral) nutritional care (PN) is needed in situations where the patient has or is at risk of malnutrition and the patient's digestive tract cannot be used as the nutrition delivery route (Table 30). If necessary, PN can be used in parallel with other methods of enhancing nutritional care, for example, if enteral nutrition (EN) is inadequate despite enhancing the treatment and optimising tube position, or if (severe) insufficiency of the bowel makes it impossible to improve nutritional status using enteral nutrition. There is no need to start intravenous nutrition if the patient's nutritional status is good and the estimated need for intravenous nutrition is less than 5 days. Hospital patients often have to fast for long periods while waiting for an examination or procedure, and intravenous nutrition can be used to minimise the energy deficit in such cases.

Table 30. Starting intravenous nutritional care in adults

Nutrient intake	Patient condition	When to start?
Nutrient intake is not possible orally or using enteral nutrition or it remains insufficient (less than 75% of need)	Good nutritional status, clinically stable	After 5–7 days
	Risk of malnutrition (NRS 2002 3–4)	In 3–5 days
	Risk of severe malnutrition (NRS 2002 5–7)	Immediately

The digestive tract should always be used as a primary nutrition route whenever possible, because intravenous nutrition bypasses bowel and liver regulation in an non-physiological manner. Intravenous nutritional care also involves higher risks compared to enteral nutrition: patients are more susceptible to metabolic problems, overnutrition and overhydration. Implementing intravenous nutrition through central venous access always involves the risk of catheter-related (positive blood culture) infection. Intravenous nutrition is also significantly more expensive than enteral nutrition.

The patient needs an appropriate vascular access for intravenous nutrition. Short-term care (less than 7–14 days) can be carried out using a peripheral venous catheter, especially if the patient only needs a small amount of energy intravenously. Only products with low osmolality (less than 850 mOsm/L) are administered via a peripheral venous catheter. Long-term intravenous nutrition is implemented via a central venous catheter or PICC catheter, allowing the patient to be given stronger nutritional solutions. The patient needs a tunnelled central venous catheter or venous access port for long-term intravenous nutrition implemented at home.

Intravenous nutrition utilises ready-to-use commercial nutrition solutions that are packaged in multi-chamber bags. Two-chamber bags contain water, electrolytes, glucose and amino acids, while three-chamber bags contain fat in addition to those elements listed earlier. Vitamins and minerals must be added to multi-chamber bags as separate products on a daily basis if the patient does not receive these nutrients in some other way. An infusion pump must be used to administer the nutrition.

The patient's need for food and fluids is assessed according to page 48. It is particularly important to assess the basic need, intake and loss of fluid, because in addition to the intravenous nutrition solution the patient often receives fluids intravenously with medication and may need a separate fluid therapy program to compensate for abnormal losses. For a hospital patient, the appropriate amount of glucose in intravenous nutrition is 3–5 g/kg/day and 0.7–1.3 g/kg/day for lipids. Planning should take into account the maximum allowed infusion rate for two-chamber and three-chamber bags. Intravenous nutrition is typically administered as a continuous infusion, but the recommendation when implementing long-term (over 1 month) intravenous nutritional care is to administer the nutrient solution in cycles so that infusion includes a break of at least 8 h/day.

Intravenous nutrition starts with an amount corresponding to approximately half of the energy need calculated for the patient. If the patient tolerates the treatment well, the nutrition is increased to the full dose within 2–3 days. The start of intravenous nutrition should be slower for patients who are at risk of refeeding syndrome (see Refeeding syndrome p. 156). The patient must be closely monitored at the beginning of intravenous nutritional care (Table 31). The possibility of switching at least partially to enteral nutrition should be assessed on a daily basis.

Table 31. Monitoring intravenous nutritional care in the ward

- Clinical condition, daily
- Weight, daily
- Fluid balance, daily
- Blood sugar, initially 2–6 times/day or individually according to the patient's clinical situation, and daily once the situation has stabilised.
- Basic blood count, Na, K, Creatinine initially 1–2 times/day, and 2–3 times/week once the situation has stabilised
- ALAT, ALP, Trigly, Mg, Pi, Ca-Ion, Urea, Prealb, at the start of care, and then once/week after that

SOURCES p. 353

Refeeding syndrome

Refeeding syndrome is a possible but rare complication associated with the start of nutritional care in patients with long-term or severe malnutrition. The syndrome can be described as a drop in potassium, phosphorus and/or magnesium levels within five days of starting nutritional care or a significant increase in energy intake. In serious cases, the syndrome is also associated with organ malfunction due to electrolyte disturbance, thiamine (vitamin B_1) deficiency or both.

Administration of glucose plays a key role in development of the syndrome, because it increases insulin secretion. Insulin causes the movement of glucose and several electrolytes (potassium, phosphorus, magnesium) from outside to inside the cells. A decrease in electrolyte levels can cause symptoms like muscle weakness, respiratory deficiency, or arrhythmia, which may be severe. Patients may also develop a thiamine deficiency due to increased need for this vitamin.

Key elements in treating refeeding syndrome involve identifying high-risk patients (see Table 32 a and 32 b p. 157), preventing the condition by starting nutrition gradually (see Table 32 c p. 158), and early detection of electrolyte disturbances before symptoms appear. Prophylactic administration of thiamine is recommended for patients, and electrolyte supplements can also be administered prophylactically. In risk patients, electrolyte levels must be determined before initiating nutritional care. Depending on the severity of the deficiency, orally or intravenously administered products are used to correct electrolyte deficiencies (see Table 32 d p. 159). Nutritional care should only be started or the amount of energy the patient receives increased after electrolyte disorders have been corrected and the patient's clinical condition is stable. Nutritional care for patients with eating disorders is discussed on p. 251.

Table 32 a. Classification of the risk of refeeding syndrome in adults, adapted from the ASPEN consensus criteria (daSilva et al. 2020)

Degree of risk	Moderate: 2 risk factors	High: 1 risk factor
BMI, kg/m^2	16–18.5	<16
Weight loss	5%/month	7,5% / 3 months or ≥10% / 6 months
Energy intake	Almost nothing over 5–7 days or <75% of estimated need over 7 days in connection with acute illness or <75% of estimated need for 1 month	Almost nothing >7 days or <50 % of estimated need over 5 days in connection with acute illness or <50 % of estimated need for 1 month
Abnormal electrolyte levels (K, P, Mg) before starting nutrition	Slightly decreased levels or recently observed low level that has normalised with a one-off or low-dose correction	Moderately/significantly decreased levels or Slightly decreased/normal level, but low level has recently been corrected with a single significant dose or several doses
Disease or condition that increases risk (see Table 32 b)	Moderately severe illness	Severe illness

Table 32 b. Diseases, clinical conditions and situations associated with a risk of refeeding syndrome

- Alcohol and other substance use
- Difficulty swallowing and oesophageal motility disorders
- Eating disorders (e.g. anorexia nervosa)
- Hyperemesis gravidarum or other protracted vomiting
- Extended fasting in connection with a severe illness or major surgical procedures
- Conditions causing absorption disorders (e.g. short-bowel syndrome, pancreatic insufficiency)
- Cancer
- Post-bariatric surgery
- Advanced neurologic impairment or general inability to communicate needs
- Decreased nutrient intake for social reasons, such as homelessness

Table c presents a model for initiating nutritional care and the related monitoring in patients at risk of refeeding syndrome. The frequency of monitoring and increases in energy should always take place in relation to the patient's clinical condition regardless of the number of care days. All possible energy sources should be taken into account regardless of the route, such as intravenous fluids containing glucose and all food and beverages consumed orally.

Table 32 c. Initiation of nutritional care in adult patients at high risk of refeeding syndrome

Timing	Actions
Before starting nutritional care	Measure K, Pi, Mg • Correct low values or, if concentrations are within reference limits, consider prophylactic supplementation with a dose corresponding to at least the basic daily need (see Table 32 d) Give the patient 200–300 mg of thiamine Check the patient's current weight
Days 1–3	Energy 10–15 kcal/kg*/day; very high risk** patients start with 5 kcal/kg*/day (Carbohydrates 50–60%, fats 30–40%, protein 15–20% of energy) Fluids 20–25 ml/kg*, take fluid deficit and losses into account, the goal is fluid balance Ensure the basic daily need for electrolytes and correct any low values (see Table 32 d) Monitoring • Measure electrolyte concentrations (Na, K, Pi, Mg) 4–6 hours after starting nutritional care and then daily laboratory analysis: Na, K, Pi, Mg, Ca-ion, Glucose, Urea, Crea • Monitor blood pressure, heart rate, oxygen saturation, cardiovascular and respiratory functions on a daily basis • Check ECG if Pi is less than 0.32 mmol/L, K less than 2.5 mmol/L or Mg less than 0.5 mmol/L • Measure weight and monitor fluid balance and swelling on a daily basis
Days 4–6	Energy 10–20 kcal/kg/day (Carbohydrates 50–60%, fats 30–40%, protein 15–20% of energy) Fluids 25–30 ml/kg*, taking fluid deficit and losses into account Ensure the basic daily need for electrolytes and correct any low values (see Table 32 d) Monitoring: • Measure electrolyte concentrations (K, Pi, Mg) every 2 days • Correct low electrolyte levels (see Table 32 d) • Monitor blood pressure, heart rate, oxygen saturation, cardiovascular and respiratory functions on a daily basis • Measure weight and monitor fluid balance and swelling on a daily basis

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Timing	Actions
Days 7–10	Energy 20–30 kcal/kg/day (Carbohydrates 50–60%, fats 30–40%, protein 15–20% of energy) Fluids 30–35 ml/kg*, taking fluid deficit and losses into account Ensure the basic daily need for electrolytes and correct any low values (see Table 32 d) Monitoring • Clinical assessment on a daily basis • Laboratory analyses twice a week • Measure weight twice a week
Days > 10	Energy according to individual needs (Carbohydrates 50–60%, fats 30–40%, protein 15–20% of energy)
Sodium	Limit <1 mmol/kg/day (days 1–7)
Thiamine (vitamin B_1)	200–300 mg/day (days 1–3, longer if necessary)
Other vitamins and minerals	Double the amount of vitamins in comparison to the basic need Meet the basic daily need for minerals (days 1–10)
Iron	Supplement only after day 7, even if the patient has iron deficiency

* per kilogram of current weight
** BMI < 14, weight loss > 20%, starvation > 15 days

Table 32 d. Correction of low electrolyte concentrations in refeeding syndrome

Electrolyte and basic daily need	Measured concentration, mmol/l	Correction of low concentration
Phosphorus 0.3–0.6 mmol/kg/day	0.5–0.8	Pi 1–3 g (80–110 mmol)/day orally
	Under 0.5	Pi 20 mmol intravenously over 12–24 hours
Potassium 1–1.5 mmol/kg/day	Under 3.5	KCl 2–6 g (25–80 mmol)/day orally
	Under 3.0	KCl 20–40 mmol intravenously over 4–8 hours (maximum of 40 mmol/24 h into a peripheral blood vessel)
Magnesium 0.2–0.4 mmol/kg/day	0.5–0.7	Mg 240–960 mg (10–40 mmol)/day orally
	Under 0.5	Mg sulphate 6 g (24 mmol Mg) intravenously over 3–6 hours After this, 5 g (20 mmol) intravenously over 12–24 hours

SOURCES p. 353

8

NUTRITIONAL CARE IN VARIOUS DISEASES AND SPECIAL SITUATIONS

The patient should be offered a basic hospital diet if their illness or clinical situation does not involve special needs. The basic diet provides a model of a health-promoting diet for all patients. This is important in terms of public health, because nearly all Finns receive hospital care at some point in their lives. When implemented according to these guidelines, the basic hospital diet is also suitable for patients with dyslipidemia, coronary artery disease, elevated blood pressure, diabetes, gout, osteoporosis, rheumatoid arthritis, or cholelithiasis. The diets for diseases and special situations presented in this section are also planned based on the basic diet and according to the nutritional quality requirements set for it when this is possible in light of the special diet characteristics required by the patient's clinical situation. If necessary, the texture of the food should be modified to meet patient needs (see Food texture modifications p. 123). Obesity is treated in accordance with the Current Care Guidelines (see Current Care Guideline for Obesity in children, adolescents and adults → Table 9 and the section Treating obesity in adults). The basic diet provides a good foundation for successful nutritional care related to obesity.

The food served to pregnant and breastfeeding women takes the nutrition recommendations for the target group into account (see Eating together – food recommendations for families with children) and the Finnish Food Authority's instructions on the safe use of foodstuffs for this target group (https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/). The carbohydrate content of meals should be taken into account when treating diabetes with insulin. Appendix 23 p. 327 presents an estimate of the carbohydrate amounts in foods for the purposes of determining meal-specific rapid insulin doses.

Nutritional care for rarer diseases is outside the scope of these guidelines. In these diseases, nutritional care is planned and implemented according to the Nutrition Care Manual and Pediatric Nutrition Care Manual databases (https://www.nutritioncaremanual.org). These databases must be available in all hospitals.

Lactose intolerance

- **A low-lactose diet is intended for patients who have lactose intolerance but can tolerate small amounts of lactose. A low-lactose diet contains a maximum of 2 g of lactose per day.**
- **A lactose-free diet is intended for patients who cannot tolerate any lactose.**

Lactose intolerance is a lactose (milk sugar) absorption disorder caused by low levels or the absence of lactase enzyme in the mucosa of the small intestine. The symptoms are individual and can be alleviated by means of diet. The majority of patients can tolerate a certain amount of lactose. Other food eaten at the same time as dairy products often improves lactose tolerance. Typical symptoms include flatulence, bloating, diarrhoea and abdominal pain. Sometimes it may be a secondary – or transient – condition that improves once the bowel has recovered from another illness.

Sources of lactose are milk, buttermilk and other dairy products, such as yoghurt, curd milk, cottage cheese, quark, cream, sour cream, fresh cheese, ice cream, milk powder and whey as well as foods and pastries containing them. If necessary, a lactose-free diet can also be used in cases of temporary lactose intolerance, such as early treatment of coeliac disease, inflammatory bowel diseases, diarrhoea and gastrointestinal surgery.

Lactose intolerance and milk allergy are different things. A lactose-free diet is not suitable for treating milk allergy.

Implementation in the ward

Low-lactose or lactose-free milk drinks or buttermilk or plant-based drinks supplemented with calcium, vitamin D and iodine are served as meal-time beverages. Other dairy products are replaced by low-lactose or lactose-free products or by an oat, soya or other

item used like dairy products. Low-lactose or lactose-free fat spread should be used on bread.

A lactase enzyme product facilitates the breakdown of lactose in the bowel and using it in conjunction with a meal containing lactose may relieve symptoms.

The primary means of ensuring calcium intake in low-lactose and lactose-free diets is the use of low-lactose or lactose-free dairy products and cheeses. Products supplemented with calcium, such as plant-based products used like dairy products are another option. A calcium product can be used if calcium intake from the diet is insufficient.

Nutrition counselling

Nurses are responsible for nutrition counselling. A nutritionist is needed if there are problems related to implementing the diet, the diet is limited or the patient has other diseases requiring nutritional care.

Food allergies and intolerances

- The strictness of avoidance depends on the severity of the symptoms.
- A food item that causes symptoms is used as permitted by the symptoms.
- Foods causing severe symptoms should be strictly avoided and the risk of contamination minimised.
- Ingredients that must be avoided are replaced by products that are similar in terms of taste, appearance and nutritional content.

A food allergy or hypersensitivity means that an ingredient causes symptoms in the digestive tract, skin and/or respiratory tract when consumed, touched or inhaled. Symptoms range from mild symptoms to life-threatening anaphylactic reactions. The symptoms can begin immediately after eating or in a delayed manner hours or days later.

An allergic reaction is caused by proteins, while food intolerances are usually the result of other mechanisms, such as a lactose absorption disturbance in the case of lactose intolerance or symptoms caused by biogenic amines.

The most common food allergies in children are milk and egg allergies. In adults, allergic symptoms are most typically caused by milk, eggs, wheat, soya and peanuts from the legume family, nuts, fish, shellfish and molluscs. Some fresh vegetables, fruits and spices may cause symptoms in people with pollen allergies (cross-allergy) during the pollen season. Additives very rarely cause allergy or hypersensitivity symptoms. Examples of additive intolerances are symptoms caused by sulphites (E-codes 220–228) or benzoic acid (E-codes 210–219).

An ingredient that causes symptoms should be avoided according to the severity of symptoms. Very strict avoidance is necessary when severe symptoms occur quickly after even small amounts of a food. In this case, products marked “may contain” may not be used. On the other hand, strict avoidance is not required when a food item causes

mild symptoms or only causes symptoms when larger amounts are consumed. Instead, a food like this may be used within the limits permitted by the symptoms. The arrival discussion (see p. 73) carefully surveys the foods causing allergy and hypersensitivity symptoms and the strictness of avoidance, for example, causes symptoms "only in large quantities", "when served fresh", "only during pollen season".

Basic foods that cause symptoms, such as milk and cereals, are replaced with nutritionally equivalent food items to ensure sufficient energy and nutrient intake. It may also be necessary to supplement the diet with food supplements.

According to the Regulation on Provision of Food Information to Consumers (EU nr 1169/2011), food package labelling must indicate the presence of even small quantities of milk or dairy products, wheat, barley, rye, oats, spelt, kamut or products containing these cereals, eggs, shellfish, molluscs, soya, peanuts, nuts, almonds, celery, mustard, sesame seeds, lupin, sulphur dioxide or sulphites.

Activities in the ward

The arrival discussion involves clarifying and recording any ingredients that cause significant symptoms for the patient, and separating diagnosed food allergies from food dislikes. Further questions can include

- Does the patient completely avoid an ingredient or can they eat it in some form, for example, is processed tomato suitable when fresh tomato causes symptoms?
- What kind of symptoms has the food caused? Does even a small amount cause severe symptoms?
- In the case of milk allergy, ensure that it is actually a milk allergy and not lactose intolerance.
- For patients following a gluten-free diet, check whether they have a wheat-barley-rye allergy or coeliac disease.
- A person who is allergic to vegetables and fruits should be asked if these food items also cause symptoms when processed,
  for example, when cooked or served as juices and outside the pollen season.

People with multiple allergies may have a very restricted diet. In this case, ordering food can be facilitated by using a Suitable ingredients form during the arrival discussion (Appendix 24, form a Children p. 328 and form b Adults p. 329).

The correctness of food and oral nutritional products must be carefully checked before they are served to the patient. It is important to ensure that no contamination occurs during dispensing in the ward.

The need for vitamin and mineral products is assessed individually.

- An anaphylactic reaction and its cause are always recorded in the patient information and food ordering system.
- In order to guarantee food safety, all parts of the food preparation and distribution process must be aware of the restrictions.

Nutrition counselling

Patients need counselling provided by a nutritionist in the following cases:

- multiple allergies
- food allergies in patients with a restricted diet
- babies and small children with wheat-barley-rye allergies
- children following an avoidance diet who are growing poorly
- food allergy patients who have difficulty implementing their diet.

Milk allergy

The diet is intended for patients who experience symptoms caused by milk protein. The diet includes no milk, milk powder, sour milk products, cream, ice cream (also vegetable fat ice cream), cheese, condensed milk, butter or margarines containing butter and milk. Food items containing milk protein, whey, whey protein, casein, caseinate or lactalbumin are also excluded. The replacement of dairy products in infants and patients aged 1 or over is presented in Table p. 165.

Table 33. Replacing dairy products in different age groups

Age	Milk substitute
Under 1 year	If necessary, a special infant formula in addition to or instead of breast milk. • primarily a product containing hydrolysed milk protein • a special amino acid-based product based if hydrolysed products are not suitable. Recommendations for use of vitamin D products https://www.ruokavirasto.fi/en/foodstuffs/healthy-diet/nutrients/vitamin-d/ A breastfeeding mother can usually follow her normal diet.
1 year and over	A special infant formula can be replaced by a supplemented plant-based drink. Rice drinks are not recommended for regular use in children under 6 years of age. Use of a special product can be continued for the second year if the diet is restricted and expands slowly, the child is growing slowly or has eating problems. There are some rare diseases that may justify their use also over the age of 2. The need for a calcium product is assessed individually (see Current Care Guideline, Food Allergy (children), 2019, in Finnish). Dairy-free, plant-based dairy products (products used like yoghurt, quark, cream, ice cream and cheese) A vitamin D product should be used according to the National Nutrition Council recommendation (see link above). A breastfeeding mother can usually follow her normal diet.

Wheat-barley-rye allergy

The diet is intended for patients who experience symptoms caused by wheat, barley and rye. One of these cereals may be suitable, and in that case it can be used. Durum, spelt, semolina, bulgur, kamut and couscous are wheat products. Triticale contains both wheat and rye proteins. Products such as mustards, spice mixes, broth preparations and sauces may also contain wheat.

Barley is found in, for example, groat and blood sausages, beer and home-made beer. Products containing wheat and barley starch and cereals containing barley malt extract should not be used because they may cause symptoms in very sensitive allergy patients. Some gluten-free and very low-gluten flour mixtures and products may contain wheat starch, in which case they are not suitable for very sensitive wheat allergy patients. Starch syrup, glucose-fructose syrup, maltodextrin and products containing modified starch should only be avoided if they cause symptoms in the patient.

Cereals that cause symptoms should be replaced by suitable cereals on an individual basis: oat, rice, corn, buckwheat, millet, quinoa, amaranth, teff. Products without gluten contamination should be selected for patients who are very sensitive. The diet should contain a diverse range of breads, groats, flakes, flour, pasta, pastries and cereals containing the substitute cereals.

Egg allergy

The diet for patients with an egg allergy involves avoiding eggs produced by chickens and other birds, as well as foods containing eggs, dried egg powder, egg white or albumin that comes from eggs. The egg-based additive lysozyme (E1105) used in the production of ripened cheeses and wines may cause symptoms for people with severe allergies, but rarely in others.

Soya allergy

The diet for people with a soya allergy does not include soybeans, tofu, miso, tempeh, soya flour, groats and protein, soya drinks, soya-based products used like yoghurt, pudding, cream and ice cream, as well as soy, teriyaki and Worchestershire sauces. Soya belongs to the pea family, so peas, beans, linseed, peanuts, lupin, clover and liquorice can also cause symptoms in the most sensitive people.

Only very sensitive soya-allergic people experience symptoms from soya lecithin (E322) or thickening agents and emulsifiers made of legumes or their seeds (E410, E412, E413, E414, E417), so avoiding these is not usually necessary.

Fish, shellfish and mollusc allergies

A person with a fish allergy can develop symptoms by simply smelling fish or when it is processed in the same space. A person with a fish allergy may only be allergic to certain fish, so different types of fish can be used as suitable. Roe, roe paste, as well as liver paté and pasties or caesar salad dressing containing anchovy should not be served.

Allergies to shellfish and molluscs may occur regardless of whether fish causes symptoms.

If the ward has a patient who experiences severe symptoms from simply smelling fish, a separate room or a separate space for meals must be arranged for this person because the beneficial effects of fish mean that there is no reason to restrict the use of fish for other patients.

Nuts and almonds

A person with a nut or almond allergy can only develop symptoms from some nuts and almonds, so the type of nut or almond should be used according to suitability (hazelnut, walnut, pecan, Brazil nut, macadamia nut, cashew, pistachio, almond). Nuts and almonds are used in pastries, sweets, cereals and pesto sauce. Nutmeg is not a nut, so it is usually suitable. Peanut belongs to pea family and it may cause a cross reaction with soya or birch pollen. In the same way as nuts and almonds, peanuts also cause specific allergies that may be more severe.

Cross-allergy

The most common cross-allergy is associated with birch pollen, but it can also occur between other pollen types and natural rubber. The foods that cause symptoms vary individually and they should only be excluded from the diet in the form – such as raw – that causes symptoms. Seasons often affect the occurrence of symptoms; and some people only have symptoms during pollen season.

The suitability of foods is usually increased by processing, such as cooking, pasteurisation, freezing or drying. Pasteurised juices, fruit purées and jams, canned fruit, pickled items, frozen vegetables and frozen grated root vegetables are suitable for most people. Cooking does not decrease the allergic properties of celery, nuts, almonds and spices.

LTP allergy

LTP (lipid transport protein) allergy is rare in Finland. The symptoms are similar to those of pollen cross-allergies and are mostly oral in nature, but LTP allergy has also caused severe reactions, such as anaphylaxis. The symptoms are typically caused by berries and fruits, such as peaches, cherries, fresh apricots, plums, apples, pears, rose hips, strawberries, grapes, oranges and lemons. However, almonds, hazelnuts, peanuts, asparagus, corn, barley, wheat, rice, onion, celery, tomato, white cabbage, eggplant, lettuce, soya and cauliflower can also cause symptoms. Processing the food, for example, by heating, preserving or freezing it does not destroy allergen.

Hypersensitivity to benzoic acid

The additives E210–E219 as well as cloudberry, lingonberry and cranberry, which are rich in benzoic acid should be eliminated from the diet of a person who develops symptoms from benzoic acid. The following products contain moderate amounts of benzoic acid: sour milk products, oranges, grapefruit, raspberries and dried apricots. They should be avoided on an individual basis. Products containing small quantities of benzoic acid include apricots, clementines, cherries, plums, blueberries, wild strawberries, potatoes, mushrooms, chanterelle mushrooms, milk, honey, liquorice, sunflower seeds, anis, curry, allspice, oregano, salvia and thyme. They should only be avoided when necessary. In addition to avoiding benzoic acid, avoidance of cinnamon, cinnamon compounds and chocolate can be tried when treating orofacial granulomatosis (OFG). Some patients benefit from avoiding chocolate.

Hypersensitivity to sulphites

Sulphites cause symptoms for asthmatics in particular. They are used as additives in grape-based drinks, wines, dried fruit, mashed potato flakes and ciders. The additives E220–E228 should be eliminated from the diet of people who develop symptoms from sulphur compounds.

Hypersensitivity to biogenic amines

Biogenic amines are formed from food proteins in connection with manufacturing and storage. They occur in smoked fish, canned fish, cured meat sausages, mature cheeses, wines, nuts and chocolate. These items should be avoided as required by the symptoms.

SOURCES p. 353

Coeliac disease

- A gluten-free diet is the only treatment for coeliac disease.
- The gluten-free diet is lifelong and unconditional for people with coeliac disease and skin manifestations of coeliac disease (dermatitis herpetiformis). Even a single deviation may cause an inflammatory reaction in the bowel or on the skin.
- Gluten is present in wheat, rye and barley and in products containing them. Gluten is also added to food to improve its structure. Substitute cereals include gluten-free oat, rice, buckwheat, corn, teff, quinoa and millet.

Nutritional care is implemented according to the Current Care Guideline for Coeliac Disease (in Finnish). A gluten-free diet is essential for coeliac disease and dermatitis herpetiformis patients and for people with a wheat-barley-rye allergy whose symptoms require strict avoidance. In coeliac disease, the gluten in wheat, barley and rye causes damages the mucous membrane in the small intestine and reduces nutrient absorption. In dermatitis herpetiformis, gluten causes an itchy blistering rash.

Coeliac disease symptoms usually disappear within a few months after starting nutritional care. Failing to treat coeliac disease may lead to the development of lactose intolerance. In most cases, tolerance for lactose is restored within a few months as the membrane damage in the small intestine corrects itself.

Implementation

Patients with coeliac disease can use gluten-free and very low gluten foods. It is important to read the list of ingredients on the packaging thoroughly. If the product is labelled "may contain gluten", it may not be used. A basic health-promoting diet should be followed in all other respects.

Activities in the ward

To ensure the absence of gluten, separate cutting boards, knives, dispensing equipment and fat spread containers must be used when handling breads and pastries. Gluten-free and ordinary bread may never be sliced on the same cutting board. A separate spread is always reserved for bread served to patients with coeliac disease. A toasting bag should be used when toasting bread, or the bread should be heated on a clean plate in a microwave oven just before serving.

For example, preparation of breakfast in the ward kitchen should start with gluten-free and allergic diets before moving on to ordinary products.

A type 1 diabetic who has coeliac disease needs to pay attention to the amount of carbohydrates in gluten-free bread and pastries, which are usually higher per slice or piece than in conventional products.

Nutrition counselling

Nutrition counselling provided by a nutritionist is always arranged for people who require a gluten-free diet within one month of receiving a diagnosis and a second time 3–6 months after the diagnosis. In addition, an appointment with a nutritionist should be arranged if necessary if there are problems implementing the diet or the desired treatment response is not achieved.

Medicines and food supplements that require special attention

Medicines and oral nutritional products are gluten-free.

SOURCES p. 354

Constipation

- Bed rest, low fluid intake and a low-fibre diet as well as certain diseases and medications are risk factors in terms of developing constipation.
- When treating constipation, it is essential to ensure adequate fluid and fibre intake as well as regular meals.
- Physical activity and regular bowel emptying habits promote bowel function.

Constipation is a malfunctioning of the bowel in which a person passes stools less than twice a week or the stools are small and hard. Bed rest increases the risk of constipation. The tendency to develop constipation increases with age and it is particularly common among those in institutional care. The causes of constipation are often a low fibre diet, low fluid intake, lack of exercise and irregular bowel movements. Constipation can also be associated with some diseases, such as hypothyroidism. Medications that increase the risk of constipation include levodopa, opiates, some antipsychotics, iron supplements, tricyclic antidepressants, verapamil and diltiazem.

When treating constipation, it is essential to ensure adequate fluid and fibre intake. The recommended amount of fibre in the diet is approximately 3 g/MJ (13 g/1,000 kcal). Good sources of fibre include wholegrain cereals, vegetables, legumes, berries, fruit, nuts, almonds and seeds. The amount of fibre should be gradually increased if the fibre content in food has been low. A total of 2–3 litres of fluids should be offered each day unless there is a need to restrict fluid intake. A suitable quantity of dairy products and plant-based products used in the same way is 5–6 dl of liquid dairy products and 2–3 slices of cheese. Any more than this can increase constipation.

Regular meals promote normal bowel function, as does being out of bed and moving around, and regular bowel emptying habits. Laxative ingredients and foods (dried, soaked plums, plum juice, linseed, Pajala porridge) can be tried to treat constipation. Plums are not recommended on a daily basis because this can decrease their laxative effect. Laxatives can be used to treat constipation if necessary.

Irritable bowel syndrome

- Irritant bowel syndrome is a functional disorder in which the patient suffers from recurring bowel disturbances, abdominal pain, bloating, and flatulence problems.
- Regular and unhurried meals, individual diet restrictions and stress management help keep the symptoms under control.
- An individual restriction of FODMAP carbohydrates tailored by a nutritionist can be of benefit to people whose most difficult symptoms are bloating in the stomach, flatulence, abdominal pain and diarrhoea, and for whom a lactose-free diet and avoiding foods that generally cause flatulence has not provided sufficient help.

Irritable bowel syndrome (IBS) is a common functional disorder in which the patient suffers from recurrent abdominal pain with bowel dysfunction, such as constipation (see Constipation p. 170) or diarrhoea or both, abdomen bloating and flatulence. Despite the existence of other abdominal disorders, these guidelines only deal with irritable bowel syndrome in more detail. A functional syndrome means that the symptoms are caused by digestive tract activity and are not the result of an organic disease, such as inflammation or a tumour. The symptoms usually involve variation between symptomatic and asymptomatic periods and periods when symptoms are mild.

Certain ingredients can worsen the symptoms, so IBS patients may benefit from diet modification. Only ingredients that cause symptoms need to be avoided. In addition to diet, the functioning of the digestive system is influenced by many other factors, such as stress, sleep, physical activity and smoking, so managing IBS symptoms often requires other lifestyle changes.

The diet is compiled individually and should avoid unnecessary restrictions. Regular meals, small portion sizes and avoiding fatty foods, insoluble fibre, strong spices, caffeine and alcohol can often alleviate IBS symptoms. People who suffer from flatulence and bloating of the stomach should avoid foods that cause gas, such as cabbages, peas, beans, onions and apples. Poorly absorbed sugar alcohols like sorbitol and xylitol, as well as fructose (fruit sugar), can aggravate the symptoms. Coffee often exacerbates abdominal symptoms and may also increase constipation due to its diuretic effect.

Avoiding FODMAP (= fermentable oligosaccharides, disaccharides, monosaccharides and polyols) carbohydrates can be tried as a treatment for irritable bowel syndrome, but strict restriction is not recommended for children, pregnant women, people with inflammatory bowel disease, or patients who have a poor nutritional status or food restrictions for other reasons. These poorly absorbed fermentable carbohydrates cause gas formation in the colon by means of bacterial fermentation, and some of them increase the amount of water in the lower part of the small intestine. Greater organ sensitivity increases the feeling of abdominal pain and bloating caused by stretching of the intestine. Restricting FODMAP carbohydrates seems to be the most effective method for patients whose most difficult IBS symptoms include bloating in the stomach, flatulence, abdominal pain and diarrhoea. A 4–6 week diet trial during which

FODMAP carbohydrates are avoided (Table 34) is recommended for these IBS patients if a lactose-free diet and avoiding foods that generally cause flatulence has not provided sufficient help.

After the avoidance period, the diet should be extended as permitted by the symptoms. Some patients can tolerate foods with high levels of FODMAP carbohydrates when eating a single, small portion of that food. In addition, the FODMAP carbohydrates that cause symptoms are unique to each person.

There is no information on the long-term effects of restricting FODMAP carbohydrates. It appears that limiting FODMAP carbohydrates decreases the amount of beneficial bifidobacteria in the bowel in conjunction with reduced fibre intake resulting from consuming fewer cereal products.

Table 34. Examples of foods that are rich in FODMAP carbohydrates

Food	
Cereal products	Rye, barley and wheat
Fruit and vegetables	Brussels sprouts, broccoli, cauliflower, onion, garlic, plum, apple, pear, mango, nectarine, apricot, peach, asparagus, watermelon, mushrooms
Legumes	Peas, beans and lentils
Dairy products	Dairy products containing lactose
Sweeteners	Xylitol, mannitol, maltitol, sorbitol, lactitol, isomalt, erythritol, fructose, honey
Prebiotics	Inulin, fructo-oligosaccharides (FOS), galacto-oligosaccharides (GOS)



Some patients find that a gluten-free diet relieves their symptoms. In this case, it is unclear whether the symptoms are caused by gluten or the presence of FODMAP carbohydrates in cereal products. Some patients benefit from avoiding oats, even though it is gluten-free by nature.

Probiotic products, peppermint oil capsules or psyllium fibre can be tried when treating IBS symptoms. Probiotics may be helpful for abdominal bloating or flatulence and peppermint oil capsules for abdominal pain. Psyllium can alleviate constipation and help to balance bowel function.

Implementation in the ward

The arrival discussion clarifies which ingredients are unsuitable for the patient. If there are many unsuitable ingredients, a list of suitable foods should be drawn up for food services.

Nutrition counselling

Nutrition counselling for IBS patients is tailored based on individual needs. Safeguarding the growth of children and young people is important, especially if they have to avoid several foods in their diet. The possible restriction of FODMAP carbohydrates and the expansion of the diet must be carried out under a nutritionist's guidance, which also ensures that the diet remains sufficiently extensive and balanced.

SOURCES p. 354

Inflammatory bowel diseases

- There is no dietary cure for inflammatory bowel diseases, but nutrition plays a key role in achieving and maintaining good nutritional status.
- A suitable diet is individual, and planning should take into account possible intestinal obstructions and surgeries, the activity of the disease as well as individual foods that aggravate symptoms.
- Relapse stages involve an increased risk of malnutrition.
- Full (or partial) enteral nutrition can be used as induction therapy or during the relapse stage of Crohn's disease. This is implemented either orally using oral nutritional supplements or as enteral nutrition. Medication is required for maintenance treatment.
- Nutrient deficiencies (such as lack of iron or vitamin B_{12}) are possible for reasons that include intestinal surgery, malabsorption, increased nutrient losses and an inadequate diet. The need for nutritional supplements is assessed individually.

Inflammatory bowel diseases (ulcerative colitis, Crohn's disease, microscopic colitis) are chronic diseases that can occur at any age. Both diseases are characterised by alternation between worsening (relapse) and asymptomatic (remission) stages. Common symptoms include diarrhoea and abdominal pain, bloody stools (especially in ulcerative colitis), as well as fatigue, weight loss and fever during relapse stages.

Nutritional care is a key support treatment for inflammatory bowel diseases, and it varies depending on the activity of the disease. Malnutrition is a common finding, especially in connection with the relapse stage. The need for energy and protein increases during the relapse stage. Absorption disorders and nutrient deficiencies have also been associated with inflammatory bowel diseases, especially in connection with severe and extensive cases of the disease and situations following bowel surgery. On the other hand, overweight and obesity are currently the most common nutritional disorders in people with inflammatory bowel disease, and treatment of these problems can be implemented during calm phases of the disease. Individual assessment of nutritional status is a prerequisite for successful nutritional care.

The majority of people with an inflammatory bowel disease need surgical treatment at some point. Perioperative nutritional care improves the results of surgical treatment in patients with inflammatory bowel disease. The surgical procedures performed, such as stoma or partial resection of the intestine, must be taken into account in nutrition counselling.

Crohn's disease can cause intestinal obstructions and adhesions may develop in the abdominal cavity after intestinal surgery, which can lead to intestinal motility problems and the related symptoms. In these situations, a low-fibre diet should be used, in texture-modified form. In addition to inflammatory bowel disease, the patient may have functional abdominal problems, meaning that bowel symptoms occur even when the disease is in remission. Dietary treatment can often alleviate functional bowel symptoms.

Many people with inflammatory bowel disease feel that certain foods increase their symptoms and worsen the disease. It is also common to seek help by trying different diets and other alternative treatments. So far, no avoidance diets have been shown to cure or permanently eliminate the symptoms of inflammatory bowel disease. For this reason, dietary restrictions are not automatically recommended for all patients who have inflammatory bowel disease. Instead, suitable and inappropriate foods are assessed during discussions with the patient.

Implementation in the ward

The arrival discussion clarifies which ingredients and food texture are suitable for the patient. The basic diet is suitable for many people with inflammatory bowel disease, but an enriched diet for gastrointestinal patients – in low-fibre and texture-modified form if necessary – may be required, especially in connection with relapse stages. Depending on the situation, oral supplemental nutritional products, enteral nutrition and intravenous nutrition are used to improve the effectiveness of nutritional care. So-called bowel rest should not be used during the relapse stage of the disease. In the case of severe diarrhoea, electrolytic carbohydrate solutions consumed orally (see p. 236) and, if necessary, intravenous hydration can be used to maintain fluid and salt balance.

Nutrition counselling

Trained IBD nurses and, if necessary, stoma nurses play a key role in patient guidance and counselling.

A person who has inflammatory bowel disease needs individual nutrition counselling provided by a nutritionist if they have

- malnutrition, especially before a surgical procedure
- slow growth and poor weight development
- severe absorption disorders or short-bowel syndrome
- in addition to the bowel disease, one or more other diseases in which diet is a key form of treatment (for example, diabetes, severe obesity, chronic renal failure)
- eating disorder or disordered eating behaviour
- restricted diet
- functional abdominal problems even when the bowel disease is in remission

Medicines and food supplements that require special attention

Sufficient calcium and vitamin D intake must be ensured during corticosteroid therapy. A folic acid supplement is needed when a patient is taking methotrexate and sulphaslazine. Biological drug treatment weakens resistance, so care must be taken to ensure good food hygiene.

The individual condition of a person with inflammatory bowel disease should be monitored regularly, taking into account the concentrations of protective nutrients (for example, iron, vitamin D, folate, vitamin B_{12}). Diagnosed deficiencies should be treated with a food supplement, and intravenous or injected products may also be needed.

SOURCES p. 354

Gastroparesis

- **Gastroparesis is a condition in which the stomach empties at a slower pace than normal without any mechanical obstruction.**
- **Gastroparesis often develops without a known cause.**

Symptoms of gastroparesis can be an premature feeling of fullness after a meal, nausea, vomiting, bloating and pain in the upper abdomen. The symptoms and their intensity vary, and the disease may lead to insufficient nutrition, weight loss and, at worst, recurring periods of hospitalisation. These symptoms make a person susceptible to malnutrition.

Although the cause of gastroparesis is often unknown, it may be the result of diabetes, a vagus nerve injury following upper abdominal surgery or a neurological disease (for example, Parkinson's disease or muscular dystrophy). Transient gastroparesis may also be caused by medication (especially opioids).

Diabetic gastroparesis is a manifestation of autonomic neuropathy. It may also occur as only a glucose balance disorder without any other symptoms. Hyperglycaemia slows and hypoglycaemia accelerates emptying of the stomach, so a good glucose balance is also important with regard to emptying the stomach. If the patient is using GLP-1 analogue medication, discontinuation of that medication should be considered before starting any other treatment.

The aim of nutritional care is to accelerate emptying of the stomach, reduce stomach symptoms, prevent malnutrition or improve nutritional status, and improve blood sugar balance in cases of diabetic gastroparesis.

Meals should be small with a fine texture and contain low levels of fat (less than 40 g/day). A fine-textured meal leaves the stomach faster than a meal with normal structure. This type of food is soft or purée. For this reason, thorough chewing of food and sufficient intake during a meal is important. A suitable meal frequency is 4–6 meals a day. The diet should contain fibre to prevent constipation, but fibre supplements are not recommended. Carbonated beverages are not recommended. If necessary, nutrition should be enriched with oral nutritional supplements. A prone positions should be avoided when eating and for 1–2 hours after the meal. Light physical activity, such as walking after a meal, can help to empty the stomach.

Metoclopramide and, in some cases, erythromycin or domperidone can be tried as prokinetic medication for gastroparesis. Antiemetic medicines can also be tried.

Although treatment is primarily based on oral nutrition, in difficult cases it may be necessary to resort to enteral nutrition using a tube inserted into the small intestine (see Enteral nutrition p. 148). Gastric neurostimulation is another possible form of treatment. Any disturbances in fluid balance should be corrected before starting other types of treatment.

Implementation in the ward

- The arrival discussion clarifies what kind of food is suitable for the patient and a low-fat soft or mashed diet for gastrointestinal patients should be ordered in enriched form if necessary.
- Extra snacks can be served according to individual needs.
- The patient should be reminded to chew their food thoroughly.
- Nutrient and fluid intake is actively monitored, and nutrition is enriched if necessary using oral nutritional supplements.
- Cold food slows emptying of the stomach, which and therefore cold food should be served at room temperature.
- Fibre supplements should not be used.
- Meal-specific blood sugar monitoring and carbohydrate assessment should be done actively.

Nutrition counselling

Counselling and monitoring provided by a nutritionist are necessary to ensure adequate nutrition for all patients, with consideration to the appropriate diet texture, small meals and possible insulin treatment.

Medications

All medications that delay emptying of the stomach should be discontinued.

SOURCES p. 355

Neurological patients

Stroke

- Stroke is associated with an increased risk of malnutrition.
- Swallowing difficulties are common after a stroke.
- Swallowing ability should be assessed before testing the ability to eat and drink orally and as rehabilitation progresses.
- Enteral nutrition should be initiated if the patient is unable to eat and drink enough or it is not safe to do so.

The aim of nutritional care is to ensure sufficient nutrition in order to promote recovery and rehabilitation. Malnutrition weakens the long-term prognosis for stroke patients. However, the risk of malnutrition should be assessed within two days of the acute phase and nutritional care enriched if necessary (see Instructions for utilising the results of malnutrition risk screening p. 41). Nutritional status must also be assessed regularly in further care. The patient should be weighed at least once a week.

Swallowing difficulties are common in the early stage. Enteral nutrition should be initiated via a nasogastric tube if the patient is unable to eat and drink enough or it is not safe to do so. Most patients regain the ability to swallow within two weeks. Enteral nutrition can be reduced once swallowing has improved and oral eating has increased. Adequate nutrition must be ensured at all stages. The difficulty swallowing may be permanent in some patients, thus posing a risk to sufficient nutrient intake. In these patients, sufficient nutrient intake is ensured by means of enteral nutrition via a percutaneous endoscopic gastrostoma (PEG).

The patient's ability to swallow is first assessed by the nursing staff (Manifestations of swallowing difficulty, Table 35 p. 186). The texture of safe beverages and food is assessed by a speech therapist or a physician familiar with swallowing difficulties before testing the ability to eat and drink orally and as rehabilitation of swallowing progresses. Appropriate beverage and food choices reduce the risk of aspiration and promote sufficient fluid and nutrient intake.

In addition to difficulty swallowing, oral eating may also decrease due to a reduced sense of touch, changed motor skills, heavy saliva secretion, increased mucous production, food falling out of the mouth, disorders related to voluntary movements and visual problems Speech production and comprehension disorders make it more difficult to express hunger and thirst. Depression and constipation can also have a negative impact on appetite.

Implementation in the ward

Depending on the patient's situation, smooth purée, coarse purée, soft or normal food is ordered. The patient should be served drinks with a suitable composition, such as buttermilk, juice soup or thickened drinks instead of thin liquids. The patient is assisted with eating when needed.

An enriched diet should be ordered if necessary, with consideration to the appropriate food texture. Suitable oral nutritional supplements, such as products that can be eaten with a spoon and thickened beverages, should be served on an individual basis.

The patient's nutrient and fluid intake is actively monitored (Appendix 14 p. 306) and enriched immediately if necessary.

Nutrition counselling

After the acute phase of a stroke, the nursing staff will talk to the patient and their relatives and explain the importance of nutrition in preventing the recurrence of a stroke. A diet that complies with the nutrition recommendations provides a good foundation for preventing and treating obesity, dyslipidemia and hypertension. Nutrition counselling should already start in specialised medical care. It then continues at the further treatment location and in primary health care.

The ability to swallow should be monitored and the patient referred to a speech therapist for assessment if necessary. An occupational therapist's assessment is needed if the patient has problems cutting their food or getting food and drink into their mouth.

Nutrition counselling is provided by a physician, the nursing staff and a nutritionist in accordance with their job descriptions.

Counselling provided by a nutritionist is needed in the following cases:

- a patient with malnutrition or who is at serious risk of malnutrition
- a patient who needs individual counselling, for example, related to implementing a texture-modified diet
- an enteral nutrition patient
- a patient who has stroke risk factors that are either not under control or have not been treated, such as hypertension, dyslipidemia, or an obese patient who has had a stroke in the past
- a patient with another disease that requires dietary treatment.

Parkinson's disease

- The diet of a person with Parkinson's disease focuses particularly on appropriate energy intake and sufficient fibre and fluid intake, aids that facilitate eating and, in the case of swallowing disorders, suitable food and drink texture.
- In order to ensure the optimal effect of Parkinson's medication, it is important to consider the timing of medication administration, meals, and also protein intake in some cases.
- Weight should be monitored regularly and food intake enriched when necessary in order to prevent malnutrition.

The aim of nutritional care is to maintain the nutritional status, optimise the effect of medication and ensure adequate fibre and fluid intake. In terms of vitamins, special attention should be paid to the adequate intake of vitamins D and B_{12} and folate. Intake can be supplemented if necessary. The serum concentrations of the vitamins mentioned above should be monitored regularly, for example, on an annual basis.

Parkinson's disease and its medication are associated with several symptoms that affect eating, appetite and maintenance of nutritional status. These symptoms include muscle rigidity, difficulty swallowing, involuntary movements and constipation. The patient should be weighed at least once a week. The aim with an obese patient is to achieve well-controlled weight loss (Assessing the need for nutrients and fluids p. 45). Fermented milk products containing probiotics and prebiotics may alleviate constipation (see Constipation p. 170).

In cases of swallowing difficulties, a speech therapist should assess the texture of safe food and drink. As the disease progresses and symptoms that affect eating become more difficult, the majority of patients need more effective nutrition, which can be achieved via oral nutritional supplements and an enriched diet. If necessary, sufficient nutrient intake is ensured by means of enteral nutrition via a percutaneous endoscopic gastrostoma (PEG).

In order to optimise the effect of levodopa therapy, it is essential that the medicine is taken ½–1 hour before or at least one hour after the meal. In particular, high protein intake at a meal may weaken the effect of the medication. If the medication does not produce the desired effect, consumption of the most protein-rich foods should be scheduled primarily in the early afternoon and evening, making it possible to maximise the effect of the medication and provide the best functional capacity during the day. The optimal protein intake for Parkinson's patients is approximately 1 g/kg body weight, which is in line with the general recommendation.

Implementation in the ward

According to individual needs, normal, soft, coarse purée or smooth purée food is ordered for the patient. The patient should be served wholegrain porridge, bread that is rich in fibre that is softened or gelatinised if necessary, vegetables, fruit and berries that

are puréed if necessary, and fibre supplements such as sugar beet fibre if needed. The patient is assisted with eating when needed.

The patient should be served drinks with a suitable composition, such as buttermilk, juice soup and thickened drinks. An enriched diet with a suitable texture should be ordered for people with a poor appetite and those who have malnutrition or are at risk of malnutrition. Oral nutritional supplements should also be offered. The times for administering medication and serving meals should always be optimised in relation to each other. This also applies to snacks.

The patient's nutrient and fluid intake is actively monitored (Appendix 14 p. 306) and enriched immediately if necessary.

Nutrition counselling

A physician and the nursing staff should provide Parkinson's disease patients with information about the importance of preventing malnutrition in the early stages of the disease. If the patient is found to be at risk of malnutrition as the disease progresses, they must receive counselling from a physician and nurse regarding the need and methods for diet enrichment. The ability to swallow should be monitored and the patient referred to a speech therapist for assessment if necessary. An occupational therapist's assessment is needed if the patient has problems cutting their food or getting food and drink into their mouth.

Individual assessment and counselling provided by a nutritionist is needed if

- the desired effect of the medication is not achieved and counselling on reconciling protein intake and medication
- the aim is to achieve controlled weight loss
- the patient is at risk of malnutrition (NRS 2002 ≥ 3), development of malnutrition cannot be reversed or the patient has malnutrition
- the patient develops swallowing difficulties that affect nutrient intake
- enteral nutrition is started.

Amyotrophic lateral sclerosis (ALS)

- All patients should be screened for the risk of malnutrition is screened and assessed with regard to swallowing function in connection with the diagnosis and every three months.
- In terms of diet, particular attention should be paid to maintaining nutritional status and sufficient fibre and fluid intake as well as ensuring a suitable texture for food and drink. If necessary, aids that facilitate eating should be used.
- Enteral nutrition should be initiated if the patient is unable to eat and drink enough.

The aim of nutritional care is to maintain the nutritional status. Swallowing problems and constipation are common. The ability to swallow should be monitored. In cases of swallowing difficulties, a speech therapist should assess the texture of safe food and drink. As the disease progresses, patients will need more effective nutrient intake. The principles of palliative care must be taken into account when planning nutritional care for patients with ALS. The patient should be weighed once a week in the ward.

Diet enrichment should start immediately for a patient who is losing weight or at risk of malnutrition. Enhancement can start with moral nutritional supplements and an enriched diet. If swallowing becomes more difficult, adequate nutrient and fluid intake can be ensured by means of enteral nutrition. Placement of a PEG tube should be discussed with the patient well in advance so that it can be placed safely. The attending physician for bringing up this matter. Prior to making a decision on PEG tube placement, the patient should also be given the opportunity to talk with a nutritionist about the methods of ensuring sufficient fluid intake and nutrition and the practical implementation of enteral nutrition.

Implementation in the ward

The patient should be weighed once a week in the ward. According to individual needs, normal, soft, coarse purée or smooth purée food is ordered for the patient. Attention should be paid to ensuring sufficient fibre and fluid intake. The patient should be served drinks with a suitable composition, such as buttermilk, juice soup and thickened drinks. An enriched diet with a suitable texture should be ordered for people who have malnutrition or are at risk of malnutrition. Oral nutritional supplements should also be used. The patient should receive assistance with eating if necessary. The patient's nutrient and fluid intake is actively monitored (Appendix 14 p. 306) and enriched immediately if necessary.

Nutrition counselling

ALS patients are at risk of malnutrition, and regular monitoring by a nutritionist is an essential part of patient care. The frequency of monitoring required by the patient depends on their clinical situation.

If the patient is in an advanced stage of the disease, the appropriateness of nutritional care should be considered on a case-by-case basis.

Examples of smooth pureed foods and thickened drinks.

Multiple sclerosis (MS)

▶ **All patients should be screened for the risk of malnutrition is screened and assessed with regard to swallowing function, with repetition according to the clinical situation.**

People with MS are a very heterogeneous patient group. The disease can involve many different symptoms and the its course varies greatly. Symptoms that interfere with eating, such as digestive tract problems, put patients at risk of malnutrition. Some patients need support with weight management or weight loss.

A diet that complies with the nutrition recommendations provides the foundation for nutritional care. Fish oil products (omega-3 fatty acid preparations) are not recommended. However, omega-6 fatty acids may reduce the number and severity of relapses. There is no clinical evidence regarding the benefits of higher than recommended vitamin D intake on the progress of the disease. Vitamin D deficiency should be treated with sufficient vitamin D supplements. Nutrient intake in patients at risk of malnutrition must be enriched immediately. If necessary, oral nutritional supplements can be used to ensure adequate nutrient intake.

Implementation in the ward

According to individual needs, normal, soft, coarse or smooth purée food is ordered for the patient. Thin liquids should be thickened if necessary. An enriched diet with a suitable texture should be ordered for those who have malnutrition or are at risk of malnutrition and oral nutritional supplements should also be offered if necessary.

Nutrition counselling

Individual assessment and counselling provided by a nutritionist is needed if

- the patient has many problems related to eating and nutrition, such as stomach disorders,
  constipation, weight gain and obesity
- the patient is at risk of malnutrition, development of malnutrition cannot be reversed or the patient has malnutrition
- the patient develops swallowing difficulties that affect nutrient intake
- enteral nutrition is started.

▶ **SOURCES** p. 355

Swallowing difficulties

- Swallowing difficulties, also known as dysphagia, exist if a person has difficulty swallowing saliva, food, drink or medication.
- Difficulty in swallowing may impair the chewing of food, oral food transport, timing of swallowing, the activity of airway protection mechanisms, pharyngeal emptying when swallowing, and progress of food through the oesophagus.
- Even moderate difficulty in swallowing can lead to insufficient or malnutrition.
- Severe swallowing difficulties can cause aspiration of food or drink, meaning that it enters the trachea and lungs. Aspiration is a significant risk factor in the development of pneumonia.
- If the difficulty of swallowing leads to insufficient nutrient and fluid intake, the patient should be started on enteral nutrition in good time, either to supplement or as the only means of nutrient intake.

There can be many reasons for difficulty of swallowing in children and adults: problems in the oral, pharyngeal and oesophageal areas (including tumours, surgery, radiotherapy, infections, structural abnormalities and functional disorders), neurological causes (cerebrovascular disorders, brain injury and progressive neurological diseases), intellectual disability, age-related slowing of motor functions, sarcopenia in the muscles of the mouth and pharynx, inflammatory connective tissue disorders (such as polymyositis, schleroderma). Difficulty in swallowing may also be caused by psychological or functional reasons.

Swallowing can be divided into the oral phase, the pharyngeal phase and the oesophageal phase. Each phase involves voluntary and involuntary stages. Swallowing problems are manifest in different ways depending on the reason behind the problem.

Principles

If the patient's illness can cause difficulty in swallowing, their nutritional status must be monitored and they must be regularly screened for the risk of malnutrition. Evidence-based screening tests, which can be widely used in different patient groups, are used to identify swallowing difficulties (see the Nursing Research Foundation (NRF) recommendation). The care unit selects the screening tests, and speech therapists train the staff in their use. Signs related to manifestations of swallowing difficulties that appear during screening are summarised in Table 35 p. 186. Based on the observations made during screening, the care unit determines whether it is safe for the patient to start consuming food and beverages orally and whether there is a need for a more detailed clinical assessment of swallowing. If necessary, the patient should be referred for a more detailed assessment performed by a speech therapist and/or a phoniatrist or an ear-nose and throat specialist. The speech therapist assesses the nature of the swallowing problem

and the safety of oral eating. If necessary, the speech therapist determines the safest food and drink texture for the patient and instructs the patient and/or staff on compensatory strategies for swallowing. If swallowing difficulties are suspected in a child, the child should be referred to a speech therapist for examinations.

Promoting safe eating

- a calm dining situation
- a stable eating position (see Appendix 26 p. 332. Issues to consider when feeding a patient)
- eating aids as needed (see Appendix 25 p. 330)
- small bites/mouthfuls
- sufficient time for eating
- if necessary, ensuring eating safety by supervising and providing verbal instructions
- at least a semi-reclining position for approximately half an hour after eating.

Table 35. Swallowing difficulties and their manifestations and consequences

Difficulty handling food in the mouth	• Food or saliva drips from the mouth • Food remains in the mouth or cheeks • Eating has slowed considerably • Several partial swallows are needed to empty the mouth
Problems in the reflex phase of swallowing	• The feeling that food is going down the wrong way • Has to swallow the same mouthful several times • Coughing or gagging during or immediately after eating or drinking • Food gets into the nose • The voice becomes watery (gargly) during or after drinking/eating
Silent aspiration	• Due to lack of sensation in the pharyngeal area, the patient does not notice that food is trickling into the trachea, and the cough reflex is not triggered normally. The symptoms include: – a watery voice – watering eyes – excess mucous in the throat and mouth/ increased mucous production – small decrease in oxygen fraction
Severe untreated swallowing disorder	• Recurring cases of pneumonia
Insufficient nutrient intake	• Unintentional weight loss • Deterioration in nutritional status • Malnutrition

Implementation

Patients with severe or progressive difficulty in swallowing should be regularly screened for risk of malnutrition at 3–6 month intervals. The most suitable and safe food texture should be selected for patients with difficulty swallowing, and liquids served in thickened form if necessary (see Texture-modified diets p. 124–125 Table 18). The diet is selected with consideration to the patient's other nutritional needs. An enriched diet with a suitable texture variant should be selected for patients at risk of malnutrition. If the patient cannot maintain sufficient nutrition by eating orally or if swallowing is not safe, enteral nutrition should be started immediately. A PEG tube should be placed as soon as possible to facilitate long-term enteral nutrition, with consideration to the expected duration of swallowing difficulties. When administering enteral nutrition products into the stomach, a sufficiently slow drip rate and at least a semi-reclining position should be ensured in order to reduce the risk of aspiration (see Enteral nutrition p. 148).

Activities in the ward

In the ward, attention should focus on identifying signs of potential difficulty in swallowing (see Table 35 p. 186). If these occur, the patient should undergo a screening test for swallowing difficulties (see the Nursing Research Foundation recommendation) and the situation investigated in more detail. The sufficiency of food eaten orally should be monitored every 3–5 days in the ward. Food with a suitable texture is ordered for the patient and fluids are only served in thickened form. Thinner oral nutritional supplement drinks should also be thickened to a suitable texture (see Appendix 21 p. 323–324). It is important to ensure that the medicines and food supplements required by the patient are prescribed in a suitable form and that the patient knows which medicines can be ground up and, if necessary, administered via the enteral nutrition tube.

Thickening agents

Thickening agents are used to thicken thin liquids so that patients with difficulty swallowing or broken mucous membrane in their mouth can swallow safely and without pain (see Appendix 21 p. 323–324). The degree of thickening can be adapted flexibly. Thickening agents do not change the taste of the food and are suitable for use in both cold and warm liquids. So-called clear products blend very easily and do not form clumps. It is important to only use the amount of thickening agent needed to allow safe swallowing, because excessive thickening can make consumption of the liquid unappealing.

A thickener intended for infants and children under 3 years of age should be used when appropriate. It can be added to the milk and/or food consumed by the child.

Nutrition counselling

Patients need counselling and monitoring provided by a nutritionist in the following cases:

- all adult and child patients who have malnutrition or are at risk of malnutrition, even if they only have slight difficulty swallowing
- patients with severe or progressive difficulty swallowing
- patients who receive enteral nutrition.

Medicines and food supplements that require special attention

Patients who have difficulty swallowing should receive medicines and food supplements in a form that they can safely swallow or that can be administered through an enteral nutrition tube. A pharmacy professional should be consulted if necessary.

SOURCES p. 355

Disabilities

- Good nutritional status and a pleasant mealtime improves the quality of life.
- The nutritional needs of people with intellectual disabilities vary greatly.
- Nutritional status can easily deteriorate because of eating problems.
- Due to a lower than normal level of physical activity, a mild intellectual disability may increase susceptibility to obesity.
- Involuntary movements and rigidity consume energy and increase the risk of being underweight and developing malnutrition.
- If a person loses weight or clearly has an increased energy need, a nutritionist should be contacted at an early stage.

The objective of nutritional care is good nutritional status and quality of life

An intellectual disability refers to difficulty in learning and understanding new things. It can be mild, moderate, severe or profound. The likelihood of nutrition problems corresponds to the severity of the disability or the number of associated diseases or injuries. These include vision impairment, speech impairment and communication difficulties, CP disability, epilepsy, autism, psychological symptoms and diseases.

The energy and nutrient need for people with intellectual disabilities varies according to the syndrome and individual size. The need for energy increases, for example, in CP patients with involuntary movements. In contrast, the need for energy is considerably less in the case of Down and Prader-Willi syndromes.

Long-term medication may affect appetite and metabolism. Some anti-epileptic and anti-psychotic medications increase appetite, while others cause loss of appetite and weight loss. Anti-epileptics may also interfere with vitamin D and calcium metabolism. Some psychiatric medications may cause dry mouth, which makes eating more difficult and increases the risk of dental cavities.

Bowel activity should be monitored on a daily basis, as constipation is a common problem that may be caused by low fibre and fluid intake, inactivity, drooling, slow bowel motility or medication. Pharmacotherapy is also used if nutritional care and exercise are not sufficient to treat constipation. The best effect is achieved through regular use (see Constipation p. 170). Nutrition problems can also be caused by dental occlusion (bite) problems, sensory sensitivities, swallowing difficulties, gastroesophageal reflux disease (GERD), vomiting and stomach problems, and poor care.

Nutritional status as well as the balanced nature and quality of the diet are assessed (see p. 71–72) at least every six months, and more frequently if necessary. If the diet is restricted, its expansion should be supported by means of multi-professional cooperation.

Activities in the ward

The eating ability and eating problems of a person with intellectual disabilities are assessed at the start of treatment. Meal arrangements take into account the importance of meals as a social event.

Methods that improve eating and nutrition include:

- Selecting food texture on an individual basis (see Texture-modified diets p. 123).
- An enriched diet should be ordered for patients identified during screening as having malnutrition or being at risk of malnutrition, and oral nutritional supplements products are also used (see Enriched diet p. 135 and Oral nutritional supplements p. 145).
- The daily diet includes a balanced variety of foods from all the food groups regardless of selectiveness.
- A balanced, health-promoting diet
- Meal situations should be as pleasant and calm as possible.
- Sufficient time is reserved for eating.
- A suitable eating position and feeding technique if the patient needs to be fed (See Appendix 26 p. 332–333).
- The need for meal aids
- Water as a drink to quench thirst
- Ensuring that vitamin D intake complies with the recommendations, using a supplement if necessary.
- The night-time fast may not exceed 10–11 hours.
- Treating problems related to constipation and eating (see Constipation p. 170).
- In long-term care, weight is monitored regularly, at least once a month.

Nutrition counselling

A nutritionist, physician and the nursing staff participate in nutrition counselling/guidance for persons with intellectual disabilities. In order to ensure sufficient nutrition, a social worker, speech and occupational therapists and food services personnel also take part in the team work. Counselling is adapted to the patient's comprehension level and provided in part or entirely to their personal assistants and family members.

The expertise of a nutritionist is needed in the following cases when treating persons with intellectual disabilities:

- those with malnutrition or who are at risk of malnutrition
- significant obesity or overweight is harmful in adults
- children who are growing poorly or are overweight
- an unbalanced diet, for example, due to sensory sensitivity
- enteral nutrition
- other diseases requiring nutritional care.

SOURCES p. 356

Renal failure

- **Impaired renal function significantly alters protein metabolism, fluid and electrolyte balance, calcium and phosphorus metabolism and increases susceptibility to malnutrition.**
- **It is essential that the diet contains appropriate amounts of energy, protein, phosphorus, potassium, salt and fluid in accordance with the phase of renal failure.**
- **An attractive appearance and the flavour of food are important.**

Chronic renal failure is a progressive disease that causes metabolic disorders and changes in fluid balance as it advances. There is deterioration in the ability of the kidneys to eliminate the end products of protein metabolism – urea and creatinine – as well as phosphorus and potassium. Dietary care is an important part of treatment, and diet changes are necessary at different stages of the disease (see Table 36 p. 193). The aim of providing suitable, adequate and tasty food and beverages is to ensure good nutritional status, slow the progress of the disease, prevent nutritional disorders and the related organ complications, improve quality of life and – in the case of children – safeguard normal growth.

Dialysis treatment often starts when kidney disease has progressed to the final stage. Dialysis treatment involves removing the excess fluid and waste that accumulates in the body because of renal failure. The treatment can be implemented as haemodialysis (HD) or as peritoneal dialysis (PD). End-stage kidney disease can also be treated with a kidney transplant or conservatively without dialysis, in which case optimisation of medication and a suitable diet play a key role.

Patients who have renal failure are a heterogeneous group, as the situation of each individual patient is affected by factors such as the stage of kidney disease, the causes of renal failure, possible other diseases, age and functional capacity. As a result, the diet is also individual.

A patient with kidney disease often has malnutrition. The factors exposing a patient to malnutrition include food restrictions, poor appetite associated with uremia, poor condition, changes in the digestive tract, and loss of protein compounds and water-soluble vitamins during dialysis. Adult kidney patients are screened for the risk of malnutrition using the NRS 2002 method, and the 7-step Subjective Global Assessment (SGA) is available for assessing the nutritional status of haemodialysis patients. The majority of patients are over 60 and have a higher than normal risk of muscle loss, sarcopenia and protein-energy malnutrition. Unintentional weight loss as well as slow growth and weight gain in children should always be addressed.

Table 36. Degree of renal failure based on estimated glomerular filtration rate (eGFR).

Stage	Description	GFR (ml/min/1.73 m²)
1	Kidney damage or anatomical abnormality, but normal or elevated GFR	≥90
2	Mild renal failure	60–89
3	Moderate renal failure	30–59
4	Severe renal failure	15–29
5	End-stage renal failure (often requires dialysis treatment)	<15

Adapted from Kylliäinen and Kastarinen 2021

Implementation

A healthy-promoting diet is recommended in the early stage of chronic renal failure (stages 1–2). There are separate recommendations for daily energy and protein intake for children in stages 2–5 of renal failure and during dialysis treatment.

Starting from the moderate renal failure stage, it is often necessary to reduce the amount of protein in food and keep it at a moderate level (0.8 to 1.0 g/kg) until the start of dialysis treatments, because large amounts of protein increase the accumulation of uremic toxins in the body and cause a worsening in the patient's condition. Protein intake is not restricted if the patient is acutely ill. When a child needs protein restriction, the nutritionist prepares an individual meal plan. The need for protein increases after dialysis begins. Both animal and plant sources can provide protein with good nutritional quality.

Limiting the phosphorus intake in the diet is necessary starting with moderate renal failure. The need for protein increases after dialysis begins, and because protein and phosphorus are often present in the same foods – such as dairy products, fish, poultry and meat, and legumes – it often becomes more difficult to limit phosphorus intake. A low-phosphorus protein supplement (Renapro) can be used if necessary.

A potassium restriction is often needed only during moderate to severe renal failure. The attending physician prescribes the potassium restriction and a nutritionist provides guidance if the potassium concentration in the plasma is too high. Consumption of foods with high potassium content, such as vegetables, berries and fruit, should not be restricted as long as the plasma potassium concentration remains normal. On the contrary, plentiful consumption of these products should be encouraged. Likewise, instead of reducing the amount of vegetables, berries and fruit consumed when potassium is restricted, the primary objective is to select options containing less potassium and more fibre from these food groups and process root vegetables in ways that reduce potassium content. The potassium restriction may be less strict during peritoneal dialysis.

The aim is to maintain good fibre content in the diet despite restrictions on phosphorus and potassium. In addition to low-fibre cereal products, the diet should also contain unleavened wholegrain breads and porridges. Nutrition that is high in fibre helps to control the harmful effects of uremic toxins in the digestive tract.

Plentiful use of fat spread, vegetable oil and oil-based salad dressing that comply with the Heart Symbol product criteria helps to ensure energy intake, as does consuming energy-rich snacks (for example, oil-enriched soya yoghurt or bread, plenty of fat and suitable cold cuts).

Salt increases blood pressure and reduces the effectiveness of antihypertensive medications. High blood pressure causes more damage to the kidneys, which is why good treatment of high blood pressure is essential at all stages of renal failure. Following a low-salt diet helps to implement the fluid restriction during dialysis and conservative treatment. Mineral salt is not used in a diet with restricted potassium because of its high potassium content. In children, a sodium supplement may be necessary in some situations, and in these cases the attending physician assesses the need for a supplement.

Plentiful fluid intake in stages 1–4 of renal failure is usually beneficial. In the end stage of the disease, the ability of the kidneys to eliminate fluid decreases, which means that the permitted fluid intake may be very low A patient's fluid restriction is individual and depends on the amount of urine eliminated. If no urine is produced, the permitted amount of fluid is approximately 800 ml/day for an adult. In children, depending on the form of dialysis, it is typically 50–70% of the need for fluid according to Holliday-Segar (see Need for fluids p. 48).

Diet prior to dialysis

The diet is intended for patients with renal failure in stages 3–5 who are not undergoing dialysis treatment. The diet always restricts phosphorous intake and, if necessary, also potassium intake. The diet is low in salt and the fat quality complies with general nutrition recommendations.

Activities in the ward (before dialysis)

- The diet for kidney patients is ordered for the patient in most cases. This often means restricted phosphorous and, if necessary, also a restricted potassium and a portion size according to the energy need. Basic food is suitable for a patient with mild renal failure.
- In most cases, a kidney patient with malnutrition can be served meals in accordance with an enriched diet. In this case, the physician increases the amount of phosphorus-binding medication as necessary.
- Juice, water or home-made beer are served with meals, if these are suitable in terms of phosphorus content.

- Children usually need a juice drink sweetened with sugar with their meals in order to ensure sufficient energy intake. In young children, infant formula or follow-on formula can be used longer than normal based on a nutritionist's assessment. If necessary, a special substitute planned specifically for kidney patients is consumed orally or administered via enteral nutrition.
- Oat and soya snack products with no added tricalcium phosphate (E341) are suitable alternatives to yoghurt and quark.
- Bread made without sourdough starter and containing no more than 0.9% salt should primarily be selected. However, bread containing even less salt – a maximum of 0.8% salt – is preferable.
- Suitable bread toppings for breakfast and evening snacks include whole meat cold cuts, home-made cheese, cottage cheese, fresh cheese, vegetables and sliced fruit. Jams and marmalades can be added if higher energy intake is required.
- In the case of a diet with restricted potassium, 100% fruit juices should not be served at all and 1.5 dl of coffee is permitted only once a day. Tea and mineral waters containing no sodium are suitable. Suitable fruits include apples, pears, oranges, satsumas and watermelon. In terms of berries, wild berries and blueberries are recommended.
- If the patient has a poor appetite, an oral nutritional supplement suitable for kidney patients can be served. These supplements contain very little phosphorus, potassium and vitamin A (see Oral nutritional supplements p. 145).
- Enteral nutrition should be started if the food and nutritional supplements consumed orally are not sufficient to ensure the child's growth. If the need for enteral nutrition is long-term, placement of a PEG tube is recommended. The need for a gastrostomy should be considered before starting peritoneal dialysis, because a gastrostomy performed during peritoneal dialysis increases the risk of peritonitis.

Dialysis diet

The diet is intended for haemodialysis and peritoneal dialysis patients. The dialysis diet restricts phosphorous, is low-salt and contains little fluids. A child's need for protein and fluids is always assessed on an individual basis.

Activities in the ward (during dialysis)

- A dialysis diet is ordered for the patient with a potassium restriction if necessary. Portion size is selected according to energy needs. A food order for a child is made according to individual protein and energy needs.
- All beverages, bread, bread toppings, yoghurt and fruit are selected in the same way as in the pre-dialysis diet.
- Implementation of the fluid restriction must be ensured. All drinks, kissel, juice and berry soup, children's puréed foods, soup broth, sauce, porridge, gruel, curd milk, yoghurt, jelly and ice cream are considered fluids. A strict fluid restriction also takes the liquid in fruit into account.
- An enriched diet is usually suitable for patients with malnutrition. Oral nutritional supplements are selected from the group of products that are suitable for dialysis patients. (Oral nutritional supplements p. 145).

Small children with renal failure often develop eating problems. During long periods of inpatient care, it is important to ensure that the child is served balanced meals that correspond to their preferences and eating skills so that they can eat with others and learn eating skills in an age-appropriate manner.

Nutrition counselling for patients with renal failure

A multi-professional team, including a physician, nutritionist, nurse and other health care professionals when necessary, participates in nutritional care during all stages of kidney disease. Kidney disease does not cause symptoms in its early stage, and a suitable diet for a kidney patient may cause some bewilderment regarding how it differs from general nutrition recommendations. For this and other reasons, several counselling sessions may be needed.

A patient with renal failure is often at risk of malnutrition. Inadequate eating, the catabolism in the body and protein loss (proteinuria, dialysis) make patients susceptible to malnutrition. A nutritionist's assessment performed at least every six months to check nutritional status and the implementation of a suitable diet is recommended from the moderate renal failure stage onwards and also for a patient who has received a kidney transplant. Children need regular monitoring by a nutritionist to ensure their growth.

Medicines and food supplements that require special attention

The medicines taken by patients who have chronic renal failure include phosphorus-binding drugs, such as calcium products (e.g. Calcichew, Kalcipos) that may contain vitamin D and/or calcium-free phosphorus-binding drugs (Renvela, Fosrenol, Velphoro) if necessary. Phosphorus binders are taken in connection with meals according to the instructions of a physician or nutritionist. Dialysis patients take a product containing water-soluble vitamins prescribed by a physician. A multivitamin-mineral product without vitamin A is usually necessary for adults and children, and the same applies to

a calcium preparation even if it is not needed to bind phosphorus. The patient should consult with the attending physician before starting to take their own vitamin and mineral products or any other food supplements.

SOURCES p. 356

Liver diseases

- Lifestyles play an essential role in preventing and treating liver diseases, because obesity and alcohol use are the most significant causes of liver diseases in Finland.
- Obesity is also the most significant cause of liver disease in children.
- Treating obesity is a key factor regardless of the aetiology and severity of the liver disease.
- The most important element when treating liver disease caused by alcohol is terminating alcohol consumption.
- Malnutrition and sarcopenia are common findings in patients with cirrhosis of the liver, especially in advanced cases.
- A cirrhosis patient with malnutrition benefits from a diet that is high in energy and protein as well as a regular meal rhythm that includes a late evening snack.

The most common liver diseases are listed in Table 37. Liver disease is often asymptomatic and found by accident in conjunction with other tests. The most typical symptoms associated with liver diseases are yellowish skin and itching, as well as general symptoms such as fatigue, poor appetite and fever.

Table 37. The most common liver diseases in Finland

Non-alcohol related	• Fatty liver disease • Liver infections caused by viruses • Auto-immune liver diseases
Alcohol-related	• Fatty liver • Liver infection (alcoholic hepatitis) • Cirrhosis of the liver

Patients with liver disease should be screened for the risk of malnutrition upon arrival at the hospital (see Nutritional care process p. 38) and in the future/later based on the clinical situation and care plan. Possible fluid accumulation and reduced protein synthesis in the liver (for example, albumin production) make it more difficult to assess the risk of malnutrition in patients with advanced liver disease. Measuring body composition and hand grip strength provides valuable additional information on the nutritional status of liver patients. Assessment of sarcopenia (see Appendix 28 p. 336), preferably using radiological methods, is a key part of assessing nutritional status in liver patients, because sarcopenia is a strong predictor of morbidity and mortality.

Fatty liver disease

Non-alcoholic fatty liver disease (NAFLD) covers a range of diseases ranging from fatty liver to steatohepatitis and cirrhosis. The special characteristics of nutritional care in liver disease that has progressed to the cirrhosis level are discussed later in this document.

Lifestyles play a key role in the development of fatty liver disease: obesity and inactivity as well as heavy use of rapidly absorbed carbohydrates and saturated fat increase the probability of fatty liver. As a result, lifestyle changes – especially improving the quality of diet carbohydrates and fat, weight loss and exercise – are the cornerstones of preventing and treating fatty liver disease. Even a moderate weight loss reduces the fat content of the liver. Conservative treatment options for obesity (such as a weight management group) are the primary choice for patients with fatty liver, however, pharmacotherapy and, in selected cases, bariatric surgery are also part of the treatment range.

A health-promoting diet that complies with nutrition recommendations is suitable for patients with fatty liver or liver inflammation (steatohepatitis). In terms of dietary factors, the quality of fat is particularly important and the emphasis should be on using products containing unsaturated fat. Consumption of low-fibre carbohydrate sources, sugar and sugary products should also be low. The use of products sweetened with fructose (fruit sugar), especially beverages, should be avoided. Complete abstinence from alcohol is recommended.

Cirrhosis of the liver

Any type of long-term liver disease can lead to cirrhosis of the liver. Cirrhosis involves a disturbance in the normal structure of the liver and an increase in the amount of scar tissue, which can increase pressure in the portal vein circulation. As liver cells are destroyed, the liver unable to sufficiently adequately manage its synthesis and secretion activities. Cirrhosis involves symptoms caused by elevated portal venous pressure (for example, ascites formation, enlarged oesophogeal veins) and symptoms resulting from deterioration in liver function (for example, brain symptoms such as hepatic encephalopathy, a decrease in coagulation factors). Insulin resistance is nearly always associated with cirrhosis, and some patients develop diabetes. Cirrhosis patients have

disturbances in the use of glucose and fats as energy and increased protein catabolism.

Malnutrition and reduced muscle mass are common findings in patients with cirrhosis of the liver, especially those with decompensated, advanced cirrhosis. When treating malnutrition, a diet that includes high levels of energy (30–35 kcal/kg/day) and protein (1.5 g/kg/day) is recommended (see Assessing the need for nutrition and fluids p. 45). The nutrition need for ascites patients is assessed according to dry weight. Acute complications or ascites formation that does not respond to treatment (refractory) also increase the need for energy.

Treatment of obesity through lifestyle changes is also essential in patients with cirrhosis of the liver, because in addition to its other beneficial effects, losing weight appears to reduce portal vein pressure. When treating obesity, guidance from a health care professional who is familiar with the special characteristics of nutritional care related to this patient group is necessary to ensure that weight loss does not lead to sarcopenia.

Vitamin and mineral deficiencies are possible in cirrhosis patients due to, for example, an inadequate diet or a fat absorption disorder related to bile secretion problems (cholestasis).

Implementation in the ward

A basic hospital diet is often suitable for liver patients, when the energy level and portion size are selected based on the patient's individual needs. Liver patients who have or are at risk of malnutrition need an enriched diet. Particular attention should be paid to nutritional status and food use in patients with cirrhosis of the liver, because they can have a poor appetite and the accumulation of ascites fluid in the abdominal cavity may keep food portions small. Oral nutritional supplements can increase the nutritional content of the diet.

The meal rhythm for a cirrhosis patient must be regular and the night-time fast kept as short as possible, no more than 10–11 hours. Cirrhosis patients should receive a late evening or night-time snack, which can consist of conventional foods or be offered as an oral nutritional supplement.

One form of treatment for the ascites formation associated with cirrhosis of the liver is a low-salt diet (maximum salt intake 5 g/day). This is usually achieved in a basic hospital diet that complies with the recommendation. Implementation of a low-salt diet at home requires individual counselling and commitment to the treatment on the part of the patient. Special attention should be paid to the feasibility of the diet to ensure that the recommendation for low-salt food does not further reduce the amount of food eaten by the patient.

Restrictions on the protein content in a liver patient's diet is very rarely justified. Protein intake can only be restricted in situations where the patient has severe hepatic encephalopathy (reduced level of consciousness) and high blood ammonia level. In such cases, protein can be limited to 40 g/day for a short period (24–48 h).

The indications for enteral nutrition and intravenous nutrition in liver patients are the same as for other patient groups (see Enteral nutrition p. 148). Oesophageal

varices in cirrhosis patients are not an absolute contraindication for placement of a nasogastric tube. The placement of a permanent percutaneous endoscopic gastrostoma (PEG) involves an increased risk of complication due to elevated portal vein pressure. The attending physician assesses the benefits and risks of tubing nutrition and the implementation method.

Nutrition counselling

Individual counselling provided by a nutritionist is necessary if the patient has

- chronic liver disease and obesity (group counselling and digital forms of treatment are also options), also in child patients
- cirrhosis of the liver and malnutrition
- cirrhosis of the liver and the patient has poor tolerance for dietary protein (symptoms of hepatic encephalopathy and increase in ammonia concentration)
- the need for a low-salt diet due to ascites formation.

Medicines and food supplements that require special attention

Diagnosed deficiencies should be corrected using separate vitamin-mineral supplements. The use of natural products is not recommended for liver patients.

Many medicines can cause liver problems, the severity of which varies greatly. As many medicines are metabolised in the liver, changes in their duration of action and concentrations may occur in advanced liver disease.

SOURCES p. 356

Pancreatitis

- **An increased risk of malnutrition is associated with both acute and chronic pancreatitis.**
- **Pancreatic enzyme replacement therapy in connection with meals is required if the patient has pancreatic exocrine insufficiency.**

Acute pancreatitis is a common disease in Finland. The disease is mild to moderate in most patients and they recover in 1–2 weeks. In the hospital, a patient with pancreatitis receives effective hydration and is monitored closely. In mild cases of acute pancreatitis, the objective is to start oral eating as early as possible. In practice, this means as soon as pain, nausea and vomiting become less severe. However, the symptoms often reduce the amount of food eaten during the hospitalisation period.

A severe case of acute pancreatitis causes a strong stress reaction and catabolism in the body, and an increase in the patient's energy needs and protein losses. If meals eaten orally are not sufficient, enteral nutrition is the primary means of supporting nutrition. It should be started early for patients with severe forms of the disease, within 24–72 hours of the beginning of hospital treatment. The route of delivery is a nasogastric tube or nasojejunal tube. If stomach emptying has slowed, a two-channel tube can be used: one channel delivers nutrition into the small intestine and the other eliminates retention. Tolerance for eating and enteral nutrition is closely monitored in patients with severe acute pancreatitis in order to avoid complications, such as intra-abdominal hypertension.

Pancreatitis patients who are treated surgically are offered food or enteral nutrition is initiated as early as possible after surgery according to the patient's clinical situation. Infected wet and pancreatic necrosis accumulation can be channelled into the stomach using an endoscopic ultrasound procedure. This procedure does not usually prevent oral nutrition in the patient.

Recurring inflammatory stages of chronic pancreatitis cause the replacement of pancreatic tissue with scar tissue. This gradually leads to endocrine and exocrine insufficiency of the pancreas, with the former causing diabetes that requires insulin treatment and the latter causing nutrient absorption disorders, especially fat. Symptoms of this disease include pain in the upper abdomen and feeling full, which may make eating more difficult. Exocrine pancreatic insufficiency is determined by measuring the amount of faecal elastase (f-Elast1). In cases of severe absorption disorder, the bowel is very active and fatty diarrhoea may occur. Nutrient absorption may be impaired regardless of whether the patient has fatty diarrhoea or not. For these reasons, malnutrition is common in patients with chronic pancreatitis. Regular assessment of nutritional status and, if necessary, repetition of the faecal elastase test should be part of patient monitoring.

Alcohol consumption is the most significant cause of acute and chronic pancreatitis in Finland. Acute pancreatitis may also be caused by, for example, cholelithiasis or severe hypertriglyceridemia. Patients with pancreatitis should avoid using alcohol to prevent the occurrence of new acute infections or the development of chronic infections into acute infections. The nutritional status of a patient who consumes a lot of alcohol has often deteriorated by the time they arrive at the hospital and they are at risk of refeeding syndrome (p. 156).

Implementation

In cases of acute pancreatitis, a diet for bowel patients is ordered with texture modification if necessary. If nutrition is only partially implemented orally, it should primarily be supplemented via an enteral route.

A patient with chronic pancreatitis may need an enriched diet. Patients with exocrine pancreatic insufficiency require pancreatic enzyme replacement therapy. When a sufficient dose of a pancreatic enzyme product is used in connection with meals, there is no need to restrict the amount of fat in the diet.

Oral nutritional supplements are important additions to the diet if the patient regularly eats less than 75% of the portion served. The use of MCT oil as an energy supplement can be considered if the patient has fatty diarrhoea despite the use of a pancreatic enzyme product.

If a pancreatitis patient needs enteral nutrition, the primary option is to select a basic enteral nutritional product. A person with exocrine pancreatic insufficiency should also receive a pancreatic enzyme product during enteral nutrition (see Appendix 27 p. 334–335). A second option is to try a hydrolysed product that contains mostly MCT fat.

Activities in the ward

The ward ensures that the patient receives a pancreatic enzyme product in connection with meals if necessary, and vitamin and mineral supplements according to individual needs. Food use is monitored and the amount of food eaten and hydration is recorded. Nutrition should be supplemented with oral nutritional supplements when necessary.

Nutrition counselling

Patients need counselling provided by a nutritionist in the following cases:

- patients with chronic pancreatitis and exocrine pancreatic insufficiency
- patients with acute pancreatitis whose recovery involves complications and prolonged hospitalisation
- patients in whom high serum triglyceride concentration is causing acute pancreatitis.

Medicines and food supplements that require special attention

Patients need counselling related to implementation of pancreatic enzyme replacement therapy: the timing of the medication in connection with meals and snacks and the size of an adequate dose in relation to the amount of fat in the meal. Very high-fibre food can reduce the effectiveness of pancreatic enzyme replacement therapy.

A person with chronic pancreatitis and exocrine pancreatic insufficiency should take a calcium-vitamin D supplement due to the elevated risk of osteoporosis. The need for other nutritional supplements (such as fat soluble vitamins) is assessed individually based on monitoring. Patients with exocrine pancreatic insufficiency are entitled to Kela reimbursement for oral nutritional supplements. In order to receive reimbursement, the patient needs a prescription for the products and a medical certificate B with reimbursement code 601.

Diabetes that has developed on the basis of pancreatitis requires insulin treatment. The patient needs in-depth counselling regarding the implementation of insulin treatment.

SOURCES p. 357

Pulmonary diseases

- **Good nutritional status maintains the muscle mass and lung function and speeds up recovery from respiratory tract infections.**
- **The need for energy and protein is higher during the relapse stage of pulmonary disease.**
- **Increased respiratory work increases the need for energy and makes patients susceptible to weight loss.**
- **Abdominal obesity has a negative impact in several pulmonary diseases.**

Pulmonary diseases are a very heterogeneous group of diseases: some are very common, such as sleep apnoea and chronic pulmonary obstructive disease (COPD), while others occur less often, such as pulmonary fibrosis, sarcoidosis and bronchiecstasis. The nutritional challenges of patients are affected by the diagnosis, severity and stage of the disease. Abdominal obesity has a negative impact in several pulmonary diseases, because the excess fat mass in the abdominal cavity pushes the diaphragm upwards and flattens the lungs, which reduces their respiratory volume.

The reasons for malnutrition in a patient with pulmonary disease are complex. Many respiratory diseases involve varying degrees of systemic inflammation, which accelerates the metabolism that destroys tissues. In addition, a person has less muscle tissue after a relapse stage of the disease than before it. As the respiratory capacity of the lungs decreases, the amount of respiratory work increases, which increases the need for energy and makes eating more difficult due to shortness of breath. Progressive pulmonary

diseases lead to severe pulmonary failure, the only treatment for which is a double-lung transplant (see Organ transplants p. 238).

Overweight is a common problem for people with pulmonary diseases, as weakened lung function reduces physical activity and tablet-like corticosteroid medication increases muscle loss. Muscle loss and simultaneous weight gain lead to sarcopenic obesity. Overweight and obese patients may have malnutrition, which is why attention should be paid to nutritional status and changes in it regardless of the starting weight.

Principles

Based on the objective, nutritional care can be divided into three groups (Table 38). The hospital's basic health-promoting diet is usually sufficient for a patient of normal weight with good nutritional status, whose respiratory work has not increased and who has a good treatment balance.

It is particularly important to ensure adequate protein intake in patients who are older, overweight, and receiving long-term corticosteroid treatment. Significant overweight, sarcopenia and low levels of physical activity reduce the need for energy in comparison to normal. Good treatment of constipation is important for all pulmonary patients (see Constipation p. 170). Avoiding an overly large amount of carbohydrates in the diet (over 50 E%) can facilitate lung function in cases of severe pulmonary failure (see COVID-19 infection p. 241). A balanced diet and sufficient use of fresh vegetables and fruit appear to be beneficial for lung function in cases of chronic obstructive pulmonary disease. These same factors that improve the diet seem to also reduce the risk of metabolic and cardiovascular diseases.

Table 38. Objectives and implementation of nutritional care in patients with pulmonary diseases

Objective	For whom	Objective	Implementation and diet
Maintaining good nutritional status - 30–35 kcal/kg - protein 1.1–1.3 g/kg, over 65 year-olds 1.2–1.4 g/kg	Normal weight Weight is stable No respiratory tract infections or relapse stage of pulmonary disease	To maintain health and normal body weight and composition To maintain good nutritional status in case of infections or relapse stages of illness To support the body's immune system through nutrient intake	A varied and balanced diet in accordance with nutrition recommendations Basic diet

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Objective	For whom	Objective	Implementation and diet
Moderate weight loss - 20–25 kcal/kg - protein 1.2–1.5 g/ kg	Obesity (BMI > 30 kg/m^2) Weight is rising No respiratory tract infections or relapse of pulmonary disease	To lose weight safely To support physical activity To maintain muscle mass and strength To promote lung function	Principles of a health-promoting diet Regular meal rhythm Reducing energy intake so that weight decreases A protein-rich diet if needed A very low calorie diet only with care
Nutrient intake enrichment - 35–45 kcal/kg - protein 1.5 g/kg	Malnutrition or at risk of malnutrition Respiratory tract infection and/or relapse of pulmonary disease or other catabolic condition Symptoms that interfere with eating, such as nausea, severe shortness of breath, changes in sense of taste	To ensure sufficient energy and protein intake to stop weight loss and possibly permit moderate weight gain To prevent muscle loss and possibly promote muscle synthesis To improve quality of life and accelerate recovery	Enriched diet 6–8 meals/snacks per day, every 2–3 hours, maximum night-time fast 10–11 hours If needed, oral nutritional supplements with high energy and protein content Individual nutritional care plan and monitoring of its implementation

Patients with malnutrition have an increased need for energy and protein due to the inflammatory situation, corticosteroid treatment and increased respiratory work. In addition to a diet rich in energy and protein, these patients need oral nutritional supplements on a daily basis. In most cases, weight loss can be stopped correcting the nutritional status is challenging. The meal portion size should be small, because the feeling of fullness and poor appetite restrict eating. Patients are usually able to eat better in the morning and before noon when they are most refreshed after the night. On the other hand, eating in the morning may be hampered by the mucous that accumulates in the bronchus and pharynx during the night. If the patient's respiratory function is very poor, it may not be possible to implement nutrition that corresponds to need before lung function improves.

Malnutrition increases the risk of acute respiratory deficiency and is a predictor of the need for respirator therapy. Patients in the end stage of the disease may be offered morphine to alleviate shortness of breath before meal situations. For patients receiving oxygen therapy, oxygen flow is increased to the same level as in other stressful situations.

Activities in the ward

A diet corresponding to the nutritional status is ordered for the patient, taking into account their need for nutrition. The hospital's basic diet is suitable for people with good nutritional status and for most people who require moderate weight loss, while a high-protein diet should be ordered for older adults. Patients in need of moderate weight loss should be offered an additional low-energy protein supplement (see High-protein diet p. 141) when the hospital's basic diet is in use. An enriched diet should be ordered for patients who have malnutrition or are at risk of malnutrition, as well as for patients whose pulmonary disease is in the relapse stage.

Nutrition counselling

A multi-professional team, including a physician, nutritionist, nurse and other health care professionals when necessary, participates in nutritional care during all stages of pulmonary disease.

Counselling provided by a nutritionist is needed by a pulmonary disease patient who has

- been diagnosed with severe malnutrition or severe risk of malnutrition (NRS 2002 screening scores 5–7)
- body mass index over 35 kg/m^2
- a lung transplant assessment
- several diseases or conditions affecting nutrition (for example, older patients with multiple diseases).

Medicines and food supplements that require special attention

Inhaled medications may cause changes in the sense of taste and dry mouth (see Consideration of oral health in nutritional care p. 84). Corticosteroid in tablet form causes bone and muscle loss and increases appetite, thus putting the patient at risk of weight gain. Some medications taken orally cause nausea and poor appetite as well as intestinal symptoms, especially diarrhoea.

SOURCES p. 357

Oncological diseases

- **Cancer and its treatment may can make patients susceptible to malnutrition. Nutritional status should be monitored regularly, taking the clinical situation into account.**
- **The patient must receive nutrition counselling in conjunction with a cancer diagnosis.**
- **The aim of nutritional care is to ensure sufficient nutrient and fluid intake.**
- **Good nutritional status promotes implementation of the treatment as planned and tolerance of side effects in addition to improving physical coping and quality of life.**
- **The nutritional status of a cancer patient should remain at a good level, and the patient should not lose weight unintentionally.**

Fatigue, depression, pain, swallowing problems, vomiting, diarrhoea and constipation can reduce appetite in cancer patients, make eating more difficult, hamper food absorption and increase nutrient loss. The treatments may cause poor appetite, changes in taste and smell, pain in the mouth and pharynx, constipation (see Constipation p. 170), the risk of obstruction in the digestive tract, and fatigue. Some types of cancer accelerate basic metabolism. Some cancers affect nutrient absorption. All of these things increase a patient's risk of malnutrition.

If energy consumption has not been measured, the recommended energy intake is 25–30 kcal/kg of body weight. The recommendation for protein intake is 1–1.5 g/kg body weight. General nutrition recommendations should be followed regarding vitamins and minerals. Nutritional supplements are not recommended unless the patient has been diagnosed with a deficiency. Special diets and food restrictions are not recommended without clinical grounds. For patients with malnutrition who have elevated blood glucose concentrations and insulin resistance, the proportion of fat in the diet is increased at the expense of carbohydrates in order to reduce the glycaemic load. If the patient's nutrient intake has been very inadequate for a longer period of time, nutritional care should start very slowly to avoid refeeding syndrome (see Refeeding syndrome p. 156).

The patient's nutritional care is tailored individually and implemented in a multi-professional manner. For example, the timing, composition, temperature, texture and size of meals and, if necessary, use of oral nutritional supplements are planned on an individual basis. Overweight and obese patients may also have or be at risk of malnutrition. Their nutritional status should be assessed and enhanced as actively as for patients of normal weight and slim patients.

Enteral nutrition – a nasogastric tube or gastrostomy (PEG) – can be used in patients who have a very sensitive mouth or pharynx, difficulties swallowing, or a condition that hinders the flow of food in the upper digestive tract, either to supplement nutrient intake or as the only source of nutrition. A PEG tube is primarily placed in patients receiving radiotherapy in the oral and pharyngeal area before the treatment starts, if it is expected

to affect food consumption. Special attention should be paid to moistening the mouth and oral care. Short-term nasogastric nutrition can be used if the patient's energy intake is insufficient for several days, for example due to a very poor appetite.

Nausea and vomiting associated with cytostatic therapy usually lasts for a few days. They may already occur before treatment for psychiatric reasons. Radiotherapy in the chest, abdominal or pelvic area may cause nausea. Radiotherapy targeting the abdominal or pelvic area may cause diarrhoea. Nausea and vomiting can usually be prevented and treated with medication. The patient's favourite food should not be served when nausea is expected. During treatment, the sense of taste may deteriorate or change (for example, a metallic flavour in food) or the patient may be sensitive to odours. If changes in the sense of taste occur, the aim is to find tasty foods and suitable seasoning methods through experimentation. The side effects associated with treatment usually correct themselves gradually after treatment.

Some patients receive oncology treatments before surgery that can last for months. Particular attention is paid to their nutritional status and preserving it in order to reduce the risk of surgical complications (see Figure 13 p. 226).

If the patient's disease is advanced and a patient in palliative care has lost a lot of weight, the effectiveness of nutritional care is often modest due to the body's increased systemic inflammatory response and catabolism. In this case, the appropriateness of nutritional care should be considered on a case-by-case basis.

Problems that occur during radiotherapy and cytostatic therapy and affect nutrition

Radiotherapy and cytostatic therapy may cause permanent problems, such as dry mouth, poor sense of taste, or adhesions in the intestinal area. If the patient has undergone extensive operations in the digestive tract area as part of cancer treatments, they may be left with permanent absorption problems. Surgery in the oral or pharyngeal area may leave the patient with a dry, numb and inflexible mouth, an incomplete set of teeth, loss of the sense of taste and/or swallowing problems. Special attention must be paid to the nutritional rehabilitation of these patients in order to safeguard their nutritional status and quality of life. In addition to specialist physicians, it is important to utilise the competence of a nutritionist and speech therapist.

Implementation in the ward

An enriched diet should be ordered for a patient who has malnutrition or is at risk of malnutrition. The diet texture and portion size are selected individually. Strongly seasoned foods can irritate the bowel. If necessary, a meal with little or no seasoning should be ordered. Spices are available in the ward so that the patient can season their food if desired. Favourite foods should be ordered for a patient who has a poor appetite. It is usually easier for the patient to eat foods that require only a little chewing (soft diet). Mild, odourless and cool foods can be tried for a patient who has nausea. The patient

may find salty food tastier than sweet food. Fluids are mainly consumed between meals. A wide range of oral nutritional supplements should be ordered for the ward. These and other snack supplies should be available for patients to use 24 hours a day. Nutritional supplements are actively offered to patients and care is taken that they are offered in refrigerated form, preferably as small single servings between meals. Beverages are only served at room temperature in exceptional cases.

The nutrient and fluid intake of patients who have malnutrition or are at risk of malnutrition is actively monitored (see Instructions – Outpatient clinic patient p. 41, Instructions – Ward patient p. 41 and Appendix 14 p. 306).

Nutrition counselling

The key element in nutrition counselling is to ensure an adequate and balanced diet. Nutrition counselling is provided by a physician, the nursing staff and a nutritionist in accordance with their job description. Counselling utilises patient guides prepared for this purpose, such as the Nutrition Guide for Cancer Patients (Association of Cancer Patients in Finland and the Association of Clinical and Public Health Nutritionists in Finland). This guide is only available in Finnish. Cancer patients should receive nutrition counselling without delay when malnutrition or the risk of malnutrition (NRS 2002 score is at least 3) has been detected. Nutrient intake should be enhanced even before the implementation of treatments, such as cancer surgery. Even a pre-operative enrichment period of 7–14 days is effective and improves the patient's postoperative recovery (see Surgical patients p. 225).

Counselling provided by a nutritionist is needed in the following cases:

- unintentional weight loss in a patient
- a patient with malnutrition or at serious risk of malnutrition (NRS 2002 minimum score is at least 5)
- an enteral nutrition patient
- a patient with eating problems, such as a sore mouth, difficulty swallowing, or persistent diarrhoea, severe constipation, or nausea
- a patient with problems maintaining or improving nutritional status during cancer treatments prior to surgery
- a very restricted diet.

Medicines and food supplements that require special attention

Finding the most effective pharmacotherapy possible is a key element in terms of implementing effective nutritional care for symptoms that hinder the patient's eating, such as nausea, pain and constipation.

Specific nutritional issues related to stem cell transplantation

Diarrhoea is common in connection with allogenic and autologous stem cell transplants It may be maintained or exacerbated by foods with high fat content and larger portions of raw vegetables and fruit. Transient lactose intolerance is also common. Diarrhoea symptoms can be alleviated by offering lactose-free or low-lactose dairy products. Excessive use of fat should be avoided and soft vegetable fats favoured when selecting the type of fat. Mildly flavoured fruit and vegetable options – such as pear, banana, watermelon and cucumber – that are washed well and peeled should be selected. All fruit, berries, vegetables and root vegetables can be served in cooked form. Canned fruit and berry and fruit purées can also be used. Acidic beverages, such as 100% juices, soft drinks and flavoured mineral waters, may irritate the oesophagus and intestinal system.

If the patient needs a vitamin-mineral product, one without iron should be selected in home care, because patients often accumulate iron in their body due to red blood cell transfusions. The need for vitamin D and calcium products is assessed individually, for example, in connection with corticosteroid therapy. Fish oil preparations should not be used due to the increased risk of haemorrhage associated with treatments. The nutritional supplements that are used should be agreed with a physician or nutritionist. There is no research evidence concerning the safety of natural products. Patients taking cyclosporine (for example, Sandimmun Neoral) should avoid grapefruit, lime, sweetie, tangelo, pomelo, ugli, carambola and pomegranate or juices made from them. Lime and grapefruit should also be avoided.

SOURCES p.358

Sarcopenia and cachexia

- Sarcopenia refers to the loss of muscle mass and muscle strength. The most effective treatment for it is a combination of muscle strength exercises and nutritional care.
- Cachexia refers to general tissue and weight loss associated with a severe underlying disease (cancer, heart failure, pulmonary disease, kidney disease).

Sarcopenia

Sarcopenia is a muscle disease or disorder caused by changes in skeletal muscles, and it involves a loss of muscle mass and muscle strength. The changes are primarily related to ageing (see Older adults p. 268) and secondarily to chronic and acute illnesses as well as overweight (see Acutely ill obese patients p. 219). In sarcopenia associated to a disease, muscle loss is faster than when it is related to ageing. Sarcopenia increases the risk of falls, fractures, weakened immune response and functional capacity, and death. Sarcopenia is underdiagnosed in older adults, and therefore the diagnosis, prevention and treatment of sarcopenia and sarcopenic obesity should be a routine part of clinical patient work. Screening can be performed using the SARC-F questionnaire (Appendix 28 p. 336).

The primary risk factors for sarcopenia include ageing, decreased physical activity, poor appetite and unintended weight loss of weight in older people, and hormonal changes (oestrogen, testosterone). Older women have a higher risk of sarcopenia than men due to decreased functional capacity. The reason for this is smaller muscle mass and also post-menopausal hormonal changes. The risk factors for disease-related sarcopenia include inflammation, reduced physical activity and low protein intake.

The principles of a health-promoting diet also appear to be beneficial in preventing sarcopenia. A study performed on people over the age of 85 found that a diet containing large amounts of hard fat sources and red meat was linked to the incidence of sarcopenia, even when protein intake was at a good level. Key factors in treating sarcopenia include muscle strength training and adequate protein intake (1–1.5 g/kg/day). In case of serious illness or injury and in proinflammatory/ catabolic conditions in general, a higher protein intake, up to 2 g/kg/day, is recommended.

Cachexia (wasting disease)

Cachexia refers to general tissue (not only muscle tissue) and weight loss associated with a severe underlying illness, such as cancer, heart failure, pulmonary disease, kidney disease. The mechanism is a complex metabolic and inflammatory physiological disorder that can be distinguished from sarcopenia and frailty by its causes (see Gerastenia p. 269). At least three of the following are associated with cachexia: anorexia, fatigue, reduced muscle strength, loss of muscle mass. Other characteristics of the disorder include abnormal laboratory findings, such as elevated inflammation indicators, low albumin level and anaemia (Appendix 29 Criteria for cachexia when the patient has a chronic disease, excluding cancer -table p. 337). Cachexia cannot be corrected by means of nutritional measures, and since the underlying disease is usually advanced, treatment is mainly palliative and strives to preserve existing reserves.

The early stage of cancer cachexia is called pre-cachexia, during which the patient still benefits from varied forms of treatment. Refractory cachexia is the term for when the disease has reached the stage of severe muscle loss, progressive catabolism and a metastatic illness that does not respond to treatment. At this stage, symptomatic nutritional care is introduced to alleviate the feeling of thirst and possible hunger as well as the anxiety of the patient and their loved ones.

It is important to identify the patients at the earliest possible stage so that cachexia treatment can begin without delay (Appendix 29 Criteria for identifying and treating different degrees of cancer cachexia -table p. 337).

▶ SOURCES p. 358

Wound patients

- **Good nutritional status and sufficient nutrient and fluid intake are prerequisites for wound healing.**
- **The larger the wound, the more it increases the need for energy and protein. The need for protective nutrients may also increase.**
- **Good pain management promotes the realisation of sufficient nutrition.**

Wound care often involves multi-professional cooperation in which experts from several different fields – such as a specialist, wound nurse, podiatrist and nutritionist – may be needed depending on the type of wound. A prerequisite for successful treatment is information on the cause of the wound (see Table 39 p. 213) and initiating targeted treatment as quickly as possible. Regardless of the treatment methods, good nutritional status plays a key role in wound healing. Good local treatment creates the conditions needed for wound healing and prevents the wound from becoming infected. The patient's pain must be treated as effectively as possible, because inadequate pain treatment can, for example, decrease functional capacity and reduce appetite. Minor

superficial burns (less than 5–10% of the skin surface) are treated as acute wounds in primary health care. Treatment of more extensive and deep burns requires a specialised medical care unit (see Traumas and severe burns p. 216).

Table 39. Different wound types and underlying factors that can be influenced by lifestyle intervention

Wound type	Risk factors/underlying cause that can be influenced by lifestyle interventions or nutritional care
All wounds and burns	Tobacco, alcohol and other intoxicants Disordered eating behaviour
Arterial ulcer	Lifestyle (smoking, physical inactivity, etc.) High cholesterol level Significant overweight Malnutrition
Venous ulcer	Overweight/obesity Standing work Venous thrombosis Heart failure
Diabetic foot ulcer	Poor diabetes treatment balance Large variations in blood sugar level Overweight High cholesterol level
Pressure ulcer	Poor nutritional status (both malnutrition and overweight) Medical devices (e.g. CPAP, nasal cannula), limb prostheses, various personal aids, such as a wheelchair Thinness Dehydration
Acute wound: Surgery Accident Burn Frostbite Corrosion wounds	The patient's possible poor nutritional status must be taken into account in treatment

The larger the wound and the longer it has been open, the more likely it is to require surgical treatment. A wound that has been open for at least four weeks is considered a chronic wound. A chronic wound patient is typically an older person with multiple diseases who has several underlying causes for the wound. An essential factor is good treatment of a wound patient's long-term illnesses, such as diabetes or obesity. High blood sugar levels also hamper the healing of non-diabetic wounds and increase the risk of infection in the wound.

The importance of nutrition for wound patients is diverse: on the one hand, good nutritional status and stable fluid balance support wound healing while on the other hand, a large and difficult wound increases the need for food and puts the patient at risk of malnutrition. In addition, malnutrition – like obesity – may make the patient susceptible to a worsening of the wound situation. Figure 12 illustrates the mechanisms by which inadequate nutrition can cause a pressure ulcer.

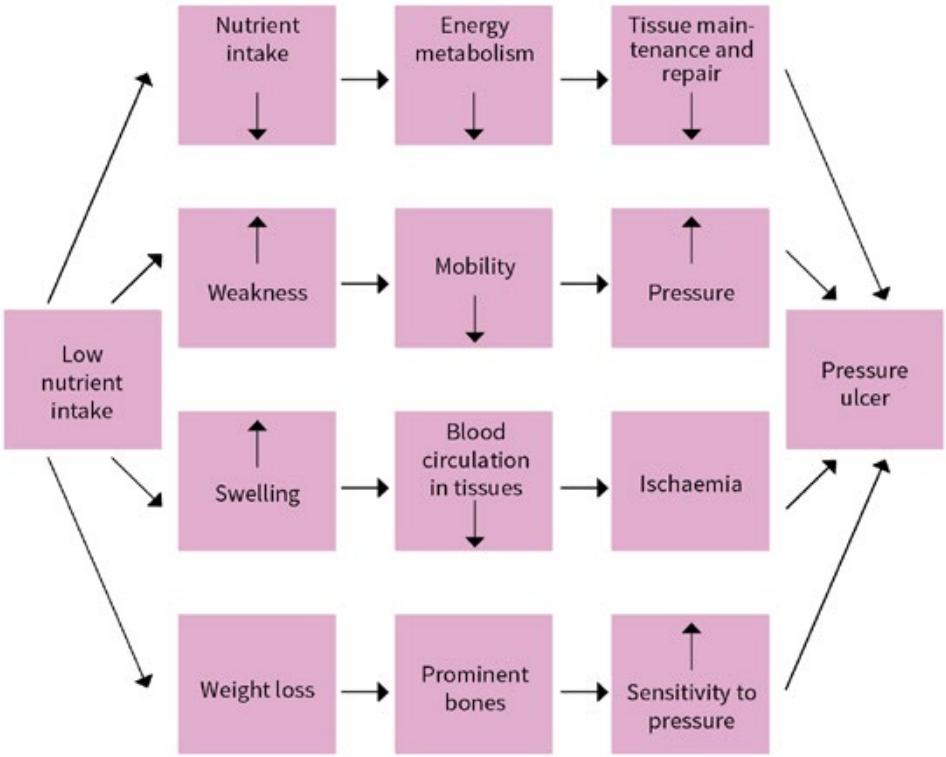

Figure 12. Mechanisms of deficient nutrient intake in pressure ulcer development.
Source: Stratton RJ, Green CJ and M Elia M. Disease-related malnutrition: An Evidence Based Approach to Treatment. Wallingford, Oxon: CABI Publishing. 2003.

Principles

Food must provide wound patients with sufficient energy, protein and fluids as well as the protective nutrients that are essential to wound healing (for example, Vitamin A, C and D, zinc). The basic need for fluids (see p. 48) is 30–35 ml/kg/day (link to the paragraph in question), in addition to which the fluid losses caused by a wound with heavy discharge must be compensated. Energy intake of 30–35 kcal/kg/day is recommended for wound patients with malnutrition or who are at risk of malnutrition. The need for protein in wound patients is 1.25–1.5 g/kg/day, but in the case of large, extensive wounds with a lot of discharge, the protein need increases to 1.5–2.0 g/kg/day. See p. 216.

Implementation in the units with help from food services

Wound patients of all ages almost always need an enriched diet (see Enriched diet p. 135) or a protein-rich diet (see High-protein diet p. 141). Other forms of enhanced nutritional care (such as enteral nutrition) should be provided according to individual needs.

In addition to a high-protein diet, adults with a stage 3 or higher pressure ulcer who have or are at risk of malnutrition should receive oral nutritional supplements with a high protein content, the energy content of these is selected according to the patient's individual needs.

Nutrition counselling

Counselling provided by a nutritionist is needed by a wound disease patient who has

- diabetes that has a poor treatment balance
- several diseases, conditions or a special diet affecting nutrition (for example, older patients with multiple diseases).
- a patient with malnutrition or at serious risk of malnutrition (NRS 2002 score ≥5)
- body mass index over 35 kg/m^2
- a large wound area and a deteriorating wound situation despite treatment.

Medicines and food supplements that require special attention

Long-term use of many medicines, such as glucocorticoids, cause thinning of the skin and contribute to the development of wounds.

SOURCES p. 359

Traumas and severe burns

- Severe trauma or burns cause strong catabolism in the body, the effects of which can be reduced with nutritional care.
- Trauma and burn patients often need a lot of protein and, after the acute initial stage, also plenty of energy.
- The patient's nutritional status must be assessed regularly during the rehabilitation period, and the nutritional care adapted to the patient's clinical situation.
- The implementation of nutritional care requires multi-professional cooperation between different specialities.

Immediately after a major trauma or severe burn (covering more than 20% of the surface of the skin), the patient nearly always requires intensive care and several surgical procedures. All trauma and burn patients develop a systemic inflammatory response (SIRS) that causes metabolic changes. Metabolism in the patient's body is strongly accelerated, in other words hypermetabolic, which increases the patient's need for nutrition. The condition is characterised by strong catabolism and protein loss (loss of muscle mass). The larger the injury, the longer the metabolism remains accelerated and continues after discharge from the hospital.

Hypermetabolism can be controlled, for example, with non-selective beta blockers and anabolic steroids, while nutrition aims at minimising the protein loss and energy deficit caused by hypermetabolism. Nutritional care is implemented with enteral nutrition if the patient has been sedated and needs invasive respiratory support.

Trauma and burn patients are a very heterogeneous group, which is why the nutritional status of patients varies before the trauma. If the patient is already has malnutrition or is at serious risk of malnutrition upon arrival at the hospital, the objective of the patient's nutritional care should be to reach the goal faster than in a patient with good nutritional status. If intensive care continues for more than 48 hours, the patient is at risk of malnutrition regardless of their previous nutritional status.

After the acute phase of the disease is over, the patient's condition has stabilised and they are moved to an inpatient ward, the aim of nutritional care is to support rehabilitation, promote the healing of wounds and fractures, facilitate the restoration of muscle mass, and maintain or improve the patient's nutritional status.

Principles

Patients with trauma and burns have an increased need for energy. The energy requirement for a patient on a ventilator is measured using indirect calorimetry, taking into account the sources of measurement errors. If measurement is not possible, the energy need should be calculated the calculation formula of 20–25 kcal/kg/day that is commonly used for adult intensive care patients. However, it should be noted that this calculation method is likely to underestimate the energy requirement for a patient with

multiple injuries or severe burns. During the first week of treatment, an intensive care patient's energy and protein intake is gradually increased towards the patient's individual goal.

During the rehabilitation stage, the energy requirement for an adult ward patient is 30–35 kcal/kg/day, but the patient's nutritional status and amount of physical activity must be taken into account.

In children, the energy requirement is usually assessed with the Holliday-Segar formula (see Need for fluids p. 48) so that 1 ml of fluid corresponds to 1 kcal of energy. This is often somewhat higher than the actual need for energy in patients who are sick for longer periods. Indirect calorimetry is used if it is possible and available.

Adult trauma and burn patients need a lot of protein (1.5 to 2 g/kg/day) until the wounds have closed and bone fractures have healed. After this, the need for protein is still higher than normal if the patient's nutritional status needs improvement or muscle synthesis requires activation. The protein need for child patients must include the protein required for growth in addition to the amount needed for wound healing.

In relation to their weight, the need for protein in children is at least the same as for adults, and can be as high as 3 g/kg/day in cases involving major trauma.

When assessing the need for fluid, evaporation from extensive wound surfaces and losses via wound drainage and drains should be taken into account. Protein is also lost through wound drainage during negative pressure wound therapy.

In cases involving extensive burns, the need for vitamins and minerals is likely increased due to hypermetabolism, the requirements for wound healing, and significant losses through wound drainage. In particular, there may be an increased need for thiamine, vitamins C, D and E, copper, selenium and zinc and – depending on the extent of the burn – supplementation may be required for at least the first week of treatment. Sufficient calcium and vitamin D intake should be ensured in patients with multiple fractures.

Implementation

Meals eaten orally or administered via enteral nutrition are the primary means of nutritional care in the ward. An energy-rich product with high protein content is used for enteral nutrition. Supplementary intravenous nutrition is used if the target portion cannot be achieved by means of enteral nutrition. In the case of small children, the aim is to discontinue enteral nutrition as soon as possible. If enteral nutrition is needed but the child is also able to eat, suitable food should be offered and enteral nutrition administered according to the age-appropriate meal rhythm.

The transition from enteral nutrition to oral eating is a critical stage in the patient's nutritional care. The amount of enteral nutrition is gradually reduced and the patient's nutrient intake monitored. Enteral nutrition should only be discontinued after ensuring that the patient has eaten over 70% of the calculated nutrition need for at least three days. The full transition to eating oral meals usually happens faster in children than in adults.

A trauma or burn patient who is capable of eating almost always needs a high-protein or enriched diet. Energy and protein intake can be effectively implemented by means

of oral nutritional supplements. Difficulties swallowing are common after ventilator treatment, so the appropriate diet texture should be assessed individually under the guidance of a speech therapist. After trauma or extensive burns, the patient's functional capacity is limited by things like casts, postoperative restrictions on movement, tightening scars and muscle weakness related to intensive care, so the patient should be assisted in eating and suitable eating aids used if necessary. If the patient has a poor appetite, their favourite foods can be offered. Children should be served age-appropriate food, extra snacks and favourite dishes.

Repeated procedures performed under anaesthesia, such as wound treatments and bandage changes, often cause breaks in both oral eating and enteral nutrition. If this is not taken into account when planning nutritional care, the patient develops a cumulative energy deficit that weakens their prognosis and slows recovery. A missed meal should be served after the procedure or is replaced by other food or oral nutritional supplements available in the ward (see Table 20 d p. 132). The aim in enteral nutrition is to achieve the daily target (ml/day) with more frequent or faster dosage.

Activities in the ward

A major trauma or burn requires long periods of treatment in the hospital and the rehabilitation unit. The patient's nutritional status and nutrient intake are monitored throughout the treatment period, and the nutritional need reassessed based on changes in the patient's clinical or nutritional status. Regular weighing, monitoring of daily food and fluid intake and body composition assessment (see GLIM criteria Appendix 6 p. 292) when possible help with decision making.

Symptoms that cause poor appetite and interfere with eating, such as nausea and constipation, must be effectively identified and treated. Strong painkillers can easily cause constipation. If necessary, bulk-forming laxatives, products that increase intestinal motility or both of these should be used. In addition, adequate fluid intake should be ensured and fibre intake increased when possible. Nausea should be treated with the appropriate medication.

During a long treatment period and as rehabilitation progresses, psychological factors often play a very large role and are easily reflected in eating, so the patient must be provided with psychological support and rehabilitation.

As rehabilitation progresses, the importance of nutritional diet quality increases, and patients may need counselling and encouragement related to following a diet that supports their health. Supporting and maintaining a normal food relationship is essential, especially in children and young people.

Nutrition counselling

Physicians and nursing staff provide the patient with information on the importance of nutrition as part of recovery and rehabilitation, and motivate and encourage the patient to eat enough. An occupational therapist assesses and provides counselling regarding the

aids needed for eating. A speech therapist assesses the patient's ability to swallow and a suitable food texture.

Counselling provided by a nutritionist is necessary in the following cases:

- all patients with extensive burns
- trauma and burn patients receiving enteral nutrition
- trauma and burn patients who have malnutrition or severe obesity (BMI ≥ = 35 kg/m^2) when arriving at the hospital
- trauma patients with other diseases that require dietary treatment (for example, renal failure)
- trauma patients with prolonged and complicated recovery (for example, due to poor wound healing)
- patients who need a liquid or purée diet when moving back home or to further treatment location.

SOURCES p. 359

Acutely ill obese patients

Obese patients are also screened for the risk of malnutrition, because the patient may have or be at risk of malnutrition or suffer from sarcopenia despite obesity. Regardless of the patient's body mass index, unintentional weight loss increases the risk of mortality, and sarcopenic obesity in particular has been linked to a poor prognosis in hospital patients. In addition to measuring body mass index and waist circumference, the overall assessment of an obese patient includes examining the diseases associated with obesity and their key risks. These associated diseases should be taken into account in the patient's nutritional care.

Although obesity has a negative impact on the prognosis of many diseases, the primary aim of nutritional care for an obese patient during an acute illness or the relapse stage of a long-term illness is to safeguard nutritional status and support recovery rather than to lose weight. Treatment of morbid obesity is discussed in a separate section of the guidelines (see Morbid obesity p. 220).

Enhanced nutritional care should be initiated for an obese patient who has or is at risk of malnutrition (NRS 2002 screening score ≥ 3). An obese patient has plenty of energy stored in the fat tissue of their body, but this is no reason to delay the start of nutritional care. The nutritional care plan for an acutely ill, obese adult patient contains a moderate amount of energy and plenty of protein (see Assessing the need for nutrition and fluids p. 45 and High-protein diet p. 141). The risk of refeeding syndrome should also be assessed for obese patients before enhancing nutritional care if the patient has,

for example, lost a lot of weight in a short period of time (see Refeeding syndrome p. 156).

Acute illness may increase the severity of obesity-related metabolic changes or associated disease, so an obese patient is susceptible to the adverse effects of excessive energy intake, such as hyperglycaemia, hyperlipidaemia, hypercapnia and hepatic steatosis. On the other hand, insufficient nutrition leads to loss of muscle mass and the development or worsening of sarcopenia or malnutrition. The need for nutrition should be carefully assessed, and the weight of patients with or at risk of malnutrition monitored 2–3 times a week. If necessary, energy intake should be adjusted without delay.

Obesity may pose technical challenges to implementing nutritional care. It may be more difficult to place a tube in an obese patient than in a person of normal weight. Severe or morbid obesity is a relative contraindication to placement of a percutaneous endoscopic gastrostoma (PEG). Problems with stomach emptying are common in severely ill, obese patients and may, for example, complicate the implementation of enteral nutrition. Obesity often involves reflux and therefore also the risk of aspiration.

SOURCES p. 360

Morbid obesity

- **BMI or ISO-BMI is at least 40 kg/m^2 in morbid obesity.**
- **The treatment is multi-professional by nature.**
- **Evidence-based pharmacotherapy, a very low calorie diet (VLCD) and surgical treatment can be used to support lifestyle modification.**

Obesity is a long-term illness that involves an excessive increase in the amount of fat tissue due to a mismatch between energy intake and energy consumption.

In the case of morbid obesity, an adult's BMI is at least 40 kg/m^2 while the ISO-BMI for a child or young person under the age of 18 is at least 40 kg/m^2. The limits are 35 kg/m^2 for severe obesity and 30 kg/m^2 for obesity. The incidence of associated diseases is taken into account in the overall assessment of obesity severity. Information on assessing the energy needs of an obese patient is presented in Chapter 3, p. 45.

Timely support and weight monitoring are better ways of promoting lifestyles favourable to weight management than emphasising the risks of unhealthy lifestyles and obesity. Key factors are a motivating, client-oriented counselling approach and taking freedom of choice into account. Treatment must be multi-professional by nature, and the team should include a physician and nutritionist as well as a psychologist, physiotherapist and a nurse with weight management training. Obesity and weight gain undermine the health-related physical quality of life. Obesity significantly increases the risk of many diseases and syndromes. The extent of this risk depends on the severity of obesity and the patient's physical condition. The risk is particularly increased by abdominal obesity and obesity that started early in life.

Pharmacotherapy can be considered to support lifestyle care (eating habits and eating management, physical activity, sleep). The pharmaceutical alternatives are the GLP-1 analogs liraglutide and semaglutide, a combination of naltrexone and bupropion (slow release, SR) and orlistat. A very low calorie diet (VLCD) can be used to support lifestyle treatment of obesity in adults. Bariatric surgery may be considered for adolescent and adult patients in cases of severe obesity if the patient has an associated disease or its risk factors, and in cases of morbid obesity.

Very low calorie diet (VLCD)

A very low calorie diet (VLCD) can be used to support lifestyle treatment of adult obesity in people whose BMI is at least 30 kg/m^2. VLCD can enhance weight loss and reduce the incidence of diseases associated with obesity. A very low calorie diet should be implemented under the supervision of a health care professional familiar with the treatment of obesity. If necessary, a physician should be consulted regarding, for example, diabetes and blood pressure medication during the VLCD period. The patient must be informed of possible adverse effects.

A very low calorie diet is not recommended for patients who

- have type 1 diabetes
- are pregnant or lactating
- have an untreated eating disorder
- have an acute disease such as unstable angina pectoris, cerebrovascular disorder or severe infection
- have significant renal disease or renal failure (GFR less than 60 ml/min/1.73 m^2) or liver disease.

In addition, the start of VLCD should be considered thoroughly if the patient is under 18 years of age, BMI is 25–30 kg/m^2, the patient has gout or gallstones, or the patient has difficulty becoming pregnant. In addition, VLCD therapy is not recommended for weight loss in obese older adults (>65 years of age) because it involves significant risks, such as loss of muscle mass. However, in cooperation with a geriatrician, it can be considered for use at the individual level, for example, in order to qualify for orthopaedic surgery.

Energy intake in a very low energy diet is limited to approximately 800 kilocalories per day. Rapid weight loss is based on a decrease in body fluid volume and reduced energy intake. A very low calorie diet is implemented either with VLCD diet substitutes or with ordinary food. With the new EU legislation, changes have been made to the composition of VLCD diet substitutes, e.g. the amount of protein in the daily dose increases from 60 grams to at least 70 grams. During the VLCD diet, a person can eat about 500–600 g of vegetables (no potatoes or sweet potatoes). It is important to ensure adequate protein intake. The need for protein is individual and it should be assessed according to the so-called adjusted body weight (see p. 47 and Current Care Guidelines, adjusted body weight, in Finnish).

Patients should consume at least two litres of energy-free beverages per day. When implementing VLCD, the diet is supplemented with a calcium and multi-vitamin mineral product and an oil supplement containing essential fatty acids (such as 5–7 teaspoons of rapeseed oil, linseed oil or walnut oil per day).

The duration of VLCD varies from a few weeks to a maximum of 16 weeks. The weight loss outcome varies depending on the starting weight, patient's condition, and previous periods of weight loss. The average weight loss over an 8–16 week period is approximately 15–21 kg. VLCD should be gradually phased out to prevent weight gain, and long-term lifestyle treatment that includes regular exercise is also needed. A GLP1 analog (for example, semaglutide) can be used to support weight management when VLCD is ending.

Surgical treatment of obesity

Surgical treatment is considered on an individual basis, but it is always preceded by appropriate conservative treatment lasting approximately six months, during which the patient's commitment to the treatment and to the changes in their food and physical activity habits required by the surgery is ensured.

- Surgical treatment may be considered for patients between the ages of 13 and 65 if the patient's body mass index (ISO-BMI for adolescents) is over 40 kg/m^2 or if it is more than 35 kg/m^2 and the patient has an obesity-related disease or its risk factors, such as type 2 diabetes, hypertension, sleep apnoea, osteoarthritis in the weight-bearing joints, polycystic ovary syndrome (PCOS) or some other disease that could be expected to improve after bariatric surgery (for example, severe reflux disease).
- In addition, a person with type 2 diabetes may already be considered for surgery with a body mass index of 30–35 kg/m^2 if conservative treatment of obesity and diabetes has not produced sufficient results.
- Substance abuse is a contraindication for surgical treatment, and relative contraindications include eating disorders and a serious mental health problem.
- Pregnancy is not recommended during the 1–2 years following surgery.

Prior to surgery, the patient's ability to change their eating habits in the manner required by surgery is assessed, and based on the surgeon's judgement, a VLCD diet lasting for 2–6 weeks is needed immediately before surgery to reduce liver size and improve surgical safety.

Surgical treatment of obesity should be centralised in hospitals that also have good expertise in internal medicine, nutrition therapy and physiotherapy. A psychologist or psychiatrist is consulted if necessary. Prior to surgery, an internist or endocrinologist, anaesthesiologist and surgeon evaluate the patient's indications for surgical treatment and its safety in consultation with experts from a multi-professional team.

In Finland, the most common bariatric surgery methods are gastric bypass (Roux-en-Y, RYGB) and sleeve gastrectomy. Both are performed using endoscopic surgery and their effect is based on limiting the amount of food eaten at one time and reducing appetite due to increased secretion of intestinal hormones.

Nutrition and diet before bariatric surgery

Prior to bariatric surgery, the patient must be able to change their eating habits in the manner required by the surgery and also commit to these changes. Key change goals include a regular meal rhythm, complying with the plate model, controlled consumption of foods with high sugar, fat or salt content, and a slow pace of eating. Any emotional eating issues observed in eating habit and alcohol consumption questionnaires completed by the patient should be balanced, and alcohol consumption reduced to a very low and controlled level.

On the evening before and on the morning of the surgery, the patient should be given a special high-carbohydrate oral nutritional product (see Surgical patients p. 225).

Nutrition and diet after bariatric surgery

Patients need practical nutrition counselling regarding the post-operative diet. Nutrition counselling is provided by a nutritionist, with the nursing staff and physicians also providing guidance.

After surgery, portion size should be limited to approximately 2 dl (starting with 0.5–1 dl). Due to the increased risk of bowel obstruction, food texture should be modified for the first month. The transition from a liquid diet to a soft diet should be gradual, with the patient returning to a normal diet one month after surgery. Food must be chewed thoroughly and sufficient time should be provided for eating.

Special attention must be paid to the meal rhythm and diet quality in order to ensure that small portions provide a suitable amount of energy and sufficient protein, good quality fat and protective nutrients. Meals should be more frequent than usual. The patient should eat meals and snacks every 2–3 hours. Protein intake should be at least 80 g/day. The patient's individual need can be estimated at 1.0–1.5 g/kg of adapted body weight (see p. 47). Excessively low energy and protein intake can easily lead to loss of muscle mass and malnutrition.

Dumping symptoms (see p. 231) are common after surgery, especially in gastric bypass patients. Dumping symptoms can be effectively prevented via dietary methods (see Gastrectomy p. 230). Constipation is common in the first weeks after surgery. Self-care instructions for constipation are usually sufficient (see Constipation p. 170). A constipation medication, such as a macrogol product, can be used temporarily if necessary. Methods of alleviating possible flatulence problems include a lactose-free diet, restricting carbonated beverages and chewing gum, and focusing on eating slowly and careful chewing.

The surgery may weaken absorption of some nutrients (vitamin B_{12}, folate, vitamin D, iron and calcium) and cause deficiencies.
The following are recommended for all bariatric surgery patients on a permanent basis:

- an oral vitamin B_{12} product 1 mg/day or intramuscularly 1 mg/3 months
- a multi-vitamin mineral product 1 tablet/day
- a calcium-vitamin D product 500 mg/10µg 1 tablet x 2/day.

If necessary, a physician can prescribe an oral iron product (50–100 mg every second day), especially for menstruating women. Some patients may also need a higher dose of vitamin D than what is presented above. The food supplements mentioned above can be purchased separately or as combination products tailored to the needs of bariatric surgery patients.

Further monitoring and nutrition counselling for bariatric surgery patients

When the patient is discharged, it is important to ensure that they have received sufficient guidance regarding home care, and a further treatment and monitoring plan has been added to the medical record. In specialised medical care, monitoring must last for at least 1–2 years after surgery, including contacts with the surgeon, endocrinologist or internist as well as a nutritionist and physiotherapist. Regular monitoring should continue in primary health care or occupational health care after the end of specialised medical care monitoring.

SOURCES p. 360

Surgical patients

In modern surgery that aims for rapid recovery, nutrition plays a key role in the patient's treatment – from assessing fitness for surgery to the recovery period after discharge (see Figure 13 p. 226). Surgical patients should be screened for the risk of malnutrition using a validated method (NRS 2002, MNA, STRONGkids) in the referring primary health care unit, and the risk score recorded in the referral. In specialised medical care, assessing nutritional status before surgery is an important part of evaluating the patient's fitness for surgery. If the patient has malnutrition or is at risk of malnutrition, they must receive enhanced nutritional care immediately in order to stabilise or correct the nutritional status before surgery. A nutritional care plan is drawn up for all patients undergoing major surgery. If the patient has malnutrition, the attending physician assesses whether – in light of the patient's clinical situation – it is necessary to postpone the operation in order to correct the nutritional status before the surgery takes place.

Weight loss prior to surgery may be justified, especially for patients with a BMI of more than 35 kg/m^2 (see Morbid obesity p. 220). Obesity and its associated diseases increase the risks of surgery. Even moderate weight loss (5–10%) reduces the incidence and symptoms of obesity-related diseases. In an ideal situation, the patient would lose weight well before the surgery so that their weight is stable for approximately two months before the planned operation (see Excluding bariatric surgery, p. 222).

Patients who have been diagnosed with malnutrition or the risk of malnutrition require enhanced perioperative nutritional care (see Enriched diet p. 135). Enhanced nutritional care is necessary when it is expected that the patient will not be able to eat for more than five days perioperatively, and for patients whose nutrient intake remains at less than half the daily need for more than one week.

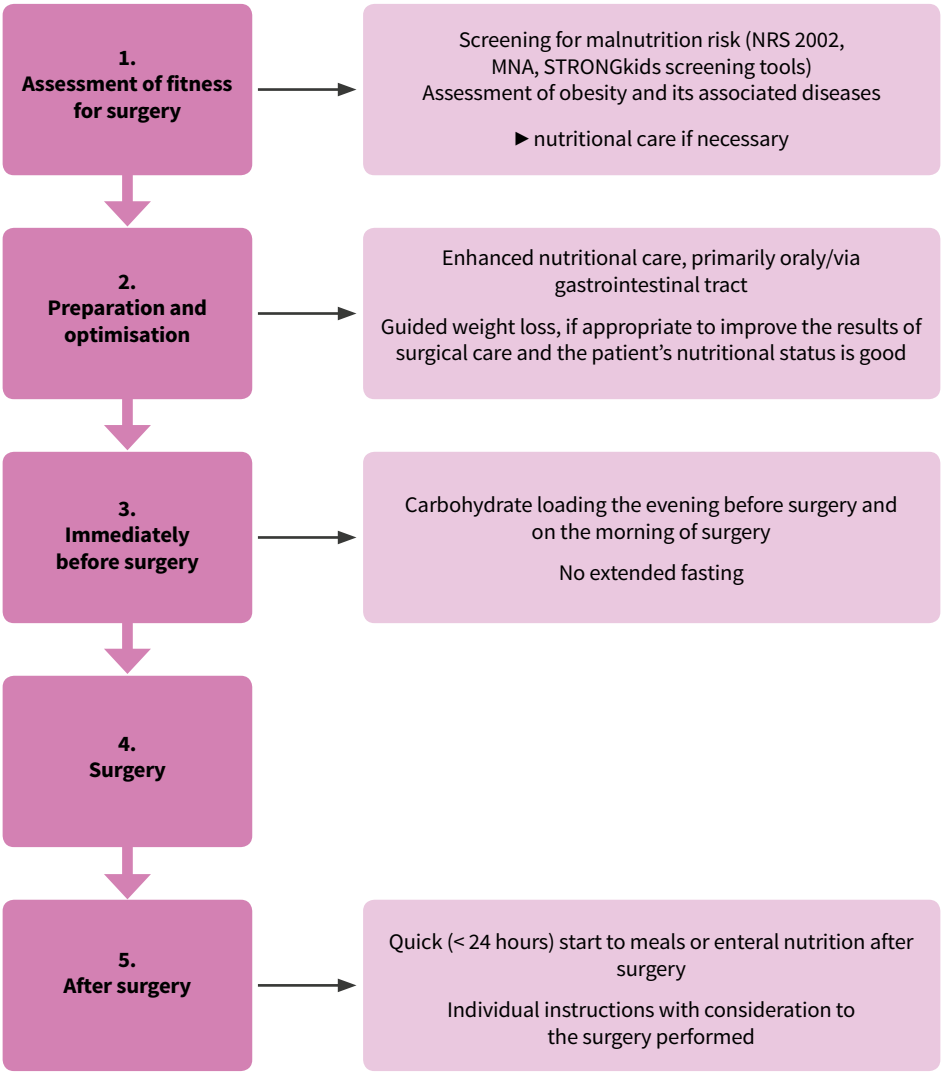

Figure 13. Perioperative nutrition (nutrition before and after surgery)

If a patient is diagnosed with a serious risk of malnutrition before surgery (NRS 2002 at least 5 points), their nutrient intake should be enriched for 7–14 days, even if this means postponing the surgery, including cancer operations. Such a short period of nutritional care does not correct actual malnutrition, and the objective is to optimise the patient's metabolic status and reduce post-operative complications in patients who are at serious risk. Rather than being an indication of malnutrition, low plasma albumin content reflects the disease-related catabolism, inflammation and the severity of the disease, and is therefore linked to the risk of surgical complications.

The duration of the pre-operative fast is two hours for clear liquids (water, clear juices, tea or coffee without milk, a pre-operative carbohydrate drink) and six hours for solid food and cow's milk. Infants may consume breast milk four hours before surgery. Infant formula can be consumed six hours before surgery. A patient-specific assessment of the appropriate fasting length is needed in situations where stomach emptying has slowed (see Gastroparesis p. 176).

Before surgery, it is recommended that patients be given a special high-carbohydrate nutritional product. Use of such products reduces the development of insulin resistance, nausea and vomiting after surgery and shortens the hospitalisation period. The drink is served on the evening before surgery so that it provides the patient with 100 g of carbohydrates. The carbohydrate dose two hours prior to surgery is 50 g. This is taken into account in the insulin dose for diabetics and, if necessary, a physician specialising in diabetes treatment should be consulted regarding the use of a preoperative carbohydrate drink. This preoperative "carbohydrate loading" is widely used to control perioperative stress, for example, in situations involving complicated abdominal surgery.

Patients can often start drinking and eating on the day of surgery or the first day after the operation, even after surgery in the upper digestive tract area. The operating surgeon will add instructions concerning this to the surgical report. Enteral nutrition should be started within 24 hours of surgery if eating orally is not possible, nutrient intake is expected to be inadequate for more than one week, or the patient clearly has malnutrition. Supplementary intravenous nutrition is needed if oral eating or enteral nutrition is not possible, or if these only provide the patient with less than 75% of their nutritional needs for more than one week. As a general rule, patients may eat food of normal texture after surgery. Older patients and those who have undergone surgery involving the upper digestive tract (see Gastrectomy p. 230 and Oesophageal cancer p. 228) or pancreas (see Pancreatic cancer p. 232) require special attention when starting to eat after surgery. During inpatient care, the attending physician should provide input concerning the implementation of nutritional care on a daily basis.

If the patient has received enhanced nutritional are before and after surgery and nutrient intake is insufficient at the end of the treatment in the surgical ward, the nutritional care must continue at home or at the further treatment location. Many patients require enhanced nutritional care for 4–8 weeks, but the duration and objectives of the treatment are specified individually. Patients receive individual nutrition counselling on the special features of post-operative meals, especially if the surgery involves the digestive tract. If the patient has undergone major surgery in the digestive tract area, an appointment with a nutritionist should also be booked in conjunction with the first follow-up appointment with the surgeon.

SOURCES p. 361

Oesophageal cancer surgery

- Oesophageal cancer surgery significantly alters the anatomy of the digestive tract, which is why various nutritional and absorption disorders are common.
- These general nutritional disorders mean that patients already require nutrition counselling before the procedure and often for a long period after it.
- Sufficient nutrition should be ensured by means of oral nutritional supplements and vitamin and mineral supplements.

Oesophageal cancer can be treated using surgery that removes lower and middle third of the oesophagus and the upper part of the stomach. Continuity of the digestive tract is ensured by connecting a tube made from the stomach to the oesophageal stump. This anatomical change means that heartburn, dumping symptoms (see Dumping symptoms p. 231) and deficiencies in fat-soluble vitamins are common after surgery. Stomach volume also decreases significantly.

The nutritional status of an oesophageal cancer patient has often deteriorated even before surgery due to the mechanical obstruction of the oesophagus caused by the tumour – which makes eating more difficult – as well as accelerated catabolism, adverse effects caused by cancer treatments and psychological factors. Recovery from surgery, wound healing and tissue regeneration increase the need for energy and nutrients, especially protein. Nutrition should be enhanced before and after surgery, primarily with clinical nutritional supplements taken orally. It is important to monitor the weight weekly, as weight is a good indication of sufficient energy intake. Weight often decreases after surgery.

Patients who undergo an oesophagectomy no longer have a lower oesophageal sphincter, so proton pump inhibitor medication is a permanent solution in many cases.

Implementation in the ward

Nutrition following surgery is initially ensured by means of a tube inserted into the small intestine and, if necessary, supplementary intravenous nutrition. Following a scan of the anastomosis, swallowing exercises start with water approximately one week after the operation. According to the surgeon's order, an enriched diet for gastrointestinal patients is ordered, initially in liquid form and then mashed. The transition to solid food begins approximately one month after surgery, with the food texture gradually becoming coarser.

Swallowing may seem difficult at the beginning, and the feeling of fullness will develop quickly. Sitting up or moving around for at least half an hour after eating helps the food move to the bowel. Slight elevation of the upper torso while sleeping prevents the contents of the stomach from rising into the mouth and getting into the lungs.

The best way to ensure sufficient nutrient intake is to offer the patient 6–8 small meals and snacks per day. Oral nutritional supplements complement the diet and can

be served in small portions as snacks throughout the day. Fluids should be consumed at different times than solid food.

Nutrition counselling

Multi-professional nutrition counselling is of primary importance, and this should be provided by a physician, the nursing staff and a nutritionist in accordance with their job descriptions. The nutritional status of each oesophageal cancer patient should be assessed pre-operatively and regularly in the different stages of the treatment process (see Assessing the need for nutrition and fluids p. 45). The objective should be to optimise and assess the sufficiency of nutrition under the guidance of a nutritionist before resorting to more invasive nutritional care methods, such as enteral nutrition.

Follow oesophageal surgery, the most important factor for patients is timely and expert nutritional guidance, prevention and treatment of malnutrition, correction of possible vitamin deficiencies and, if necessary, the use of pancreatic enzyme supplements. All patients need nutrition counselling provided by a nutritionist while in the ward and then in connection with follow-up outpatient clinic visits and possible radiotherapy and cytostatic therapy. Enhanced nutritional care should continue for a sufficient period after surgery, at least 1–2 months or according to individual needs.

SOURCES p. 361

Gastrectomy

- An assessment of nutritional status and the required nutrient intake enhancement must be carried out before and after surgery.
- Problems related to eating are common after a gastrectomy and patients need individual nutrition counselling.
- Good nutritional status promotes recovery.

Cancer is the most common reason for a gastrectomy. Some stomach cancers can be treated with surgery in which all or part of the stomach is removed. Partial removal leaves approximately 20–30% of the stomach volume. Partial removal of the stomach leaves the upper part of the stomach intact and the small intestine is connected to it. Complete removal of the stomach involves connecting the small intestine to the oesophagus and, on a case-specific basis, creating a pouch from the small intestine in order to replace the stomach's storage task. In both operations, a small intestine anastomosis is also constructed, providing a route for bile and pancreatic fluids to participate in digestion.

The majority of stomach cancer patients have lost weight and nutrient intake has decreased because of the symptoms caused by the tumour: passage of food through the stomach has slowed, which causes stomach pain, nausea and vomiting. The preoperative cytostatic therapy may also reduce appetite and cause nausea and vomiting. As a result, nutritional status should be emphasised during the first specialised medical care appointment and enhanced nutritional care initiated even before the stomach cancer treatments begin. If iron status has clearly decreased, iron should be administered intravenously before surgery according to the surgeon's instructions.

Carbohydrate loading prior to surgery (if the stomach can accept this) reduces perioperative surgical stress and promotes recovery from the operation. After the surgery, the aim is to start nutrition as soon as possible according to the attending surgeon's assessment. The risk of malnutrition increases after a gastrectomy. Food and fluids move more quickly through the digestive tract, which may reduce the amount of food absorbed. The amount of food consumed at one time is significantly reduced, which means that the energy intake may be insufficient. Typical digestive tract symptoms following surgery include dumping symptoms, a premature feeling of fullness, and diarrhoea. These symptoms will decrease over time. Fatty diarrhoea can also occur after stomach surgery. The physician can order tests to check the stool elastase content, and pancreatic enzyme replacement therapy can be started if the result indicates exocrine failure in the pancreas.

Dumping symptoms

Dumping symptoms are symptoms that appear following stomach, pancreatic and oesophageal surgery in particular. This is caused by overly quick movement of food into the small intestine. These symptoms include nausea, sweating, heart palpitations, and possibly diarrhoea. There are two types of symptoms: the most common of these is early dumping, in which the symptoms occur 10–60 minutes after eating, while late dumping only causes symptoms 1–3 hours after eating. Dumping symptoms can be prevented by consuming beverages mainly between meals and restricting the use of ingredients and beverages with a high sugar content. A fibre supplement, such as a guar gum or a psyllium product, can also be tried. If dietary changes do not provide a sufficient response to the symptoms, medicines – such as acarbose or octreotide – can be considered.

Implementation in the ward

Sufficient nutrient intake should be ensured by serving small meals and snacks every 2–3 hours. When the number of meals increases, it is important to enhance oral hygiene (see Consideration of oral health in nutritional care p. 84). Adequate fluid intake must be ensured. Nutrition is supported by means of intravenous nutrition during the first days after surgery. Oral eating should start on the first or second day after surgery with fluids or a liquid lactose-free diet with high energy and protein content. The transition to more solid food takes place based on a physician's order. A diet for gastrointestinal patients should be ordered for the patient, and supplemented with oral nutritional supplements served as snacks in small portions.

Nutrition counselling

In addition to guidance received from the physician and nursing staff after surgery, all patients need counselling provided by a nutritionist before discharge and later if necessary.

Small, frequent meals and snacks with high energy and protein content, thorough chewing, and drinking fluids between meals play a key role in the diet. Some patients may have a decreased tolerance for lactose after surgery, and low-lactose or lactose-free foods should be selected in such cases. If the patient's post-surgery nutrient intake is insufficient or the patient is at risk of malnutrition before surgery, the use of oral nutritional supplements is recommended to improve energy and protein intake. Total gastrectomy patients are eligible to receive basic reimbursement from Kela for oral nutritional supplements. The physician will provide a medical certificate B with reimbursement code 601 and a prescription for the product.

Stomach surgery reduces the absorption of calcium, vitamin D, iron, vitamin B_{12}. Patients should take a calcium-vitamin D supplement and multivitamin-mineral product. Some patients may also need an iron supplement. Lifelong vitamin B_{12} replacement therapy in the form of an intramuscular injection provided at least every three months must be started in total gastrectomy patients. Annual follow-up tests that include basic blood count, albumin, vitamin B_{12}, folate and vitamin D are recommended.

SOURCES p. 362

Pancreatic cancer surgery

- **Enhanced nutritional care is often needed before pancreatic cancer surgery, as the majority of patients have lost weight unintentionally.**
- **Digestive tract symptoms are normal after pancreatic cancer surgery.**
- **All patients develop pancreatic exocrine insufficiency and diabetes after undergoing a total pancreatectomy. These conditions can also develop after a partial pancreatectomy.**

Only 15–20% of cases of pancreatic cancer cases can be treated with surgery. Cytostatic therapy is often associated with pancreatic cancer surgery, either before and/or after the operation. Pancreatic cancer causes weight loss in almost all patients (90%). The symptoms also include non-specific upper abdominal problems, upper abdominal and back pain, lack of appetite and nausea. Pancreatic exocrine insufficiency is also possible either due to a pancreatic duct obstruction or underlying chronic pancreatitis. The symptoms of the disease and the side effects of cancer treatments mean that pancreatic cancer patients are very likely to have malnutrition, and the patient often needs enhanced nutritional care before surgery (see Enriched diet p. 135).

The type of pancreatic cancer surgery is determined by the location of the tumour. A pancreaticoduodenectomy, also known as a Whipple procedure, involves removing the head of the pancreas, the duodenum, gallbladder and bile duct as well as the nearby lymph nodes. Reconstruction involves attaching the first part of the small intestine to the tail of the pancreas, bile ducts and stomach. Sometimes pancreatic cancer can make it necessary to remove the entire pancreas.

Food transit in the digestive tract changes after pancreatic cancer surgery. The emptying of the stomach may be slower, especially during the weeks immediately following surgery. This causes nausea, vomiting, a rapid feeling of fullness, and stomach pain. On the other hand, rapid transit of food from the stomach to the small intestine may cause dumping symptoms (see Gastrectomy p. 230). Some patients develop pancreatic exocrine insufficiency after a partial pancreatectomy, which requires pancreatic enzyme replacement therapy. Lactose absorption may deteriorate after surgery. Patients always develop diabetes that requires insulin therapy after a total pancreatectomy. This can be difficult to treat, especially because the patients are susceptible to hypoglycaemia.

Implementation

Enhanced nutritional care should start immediately during the first visit to specialised medical care, before treatments for pancreatic cancer begin.

Sufficient nutrient intake after surgery should be ensured by serving small meals and snacks every 2–3 hours. Fluids should be consumed at different times than solid food. Patients are instructed to eat slowly and chew their food thoroughly. The patient's food use should be monitored and recorded in the patient documents.

On the first days after surgery, patients often have a nasogastric tube to empty the stomach. After the nasogastric tube has been removed or is no longer needed, oral eating begins with fluids or a liquid lactose-free diet with high energy and protein content. If necessary, intravenous nutrition can be used for support. The gradual transition to more solid food takes place based on a physician's instructions. A diet for gastrointestinal patients should be ordered for the patient, and supplemented with oral nutritional supplements served as snacks in small portions. The food portion size can be increased as the patient's appetite improves and eating goes better.

If an elastase assay of the stool reveals that the patient has pancreatic exocrine insufficiency, they need to take a pancreatic enzyme product in connection with meals (see Pancreatitis p. 201).

Nutrition counselling

In addition to guidance received from the physician and nursing staff after pancreatic cancer surgery, all patients need counselling provided by a nutritionist before discharge, in conjunction with the first follow-up appointment and later according to individual need. The patient also requires guidance from a diabetes nurse after undergoing a total pancreatectomy.

Medicines and food supplements that require special attention

The development of pancreatic exocrine insufficiency and diabetes is possible after pancreatic cancer surgery. A prescription for oral nutritional supplements is prepared when the patient is discharged, and in the case of severe fat absorption disorders, also a medical certificate B (reimbursement code 601) is prepared for reimbursement of these products. The attending physician or nutritionist plans the vitamin replacement therapy on an individual basis.

SOURCES p. 362

Colectomy, stoma and J-pouch

- After a colostomy and ileostomy, the patient can eat a normal diet or a diet for gastrointestinal surgery patients.
- Enhanced nutritional care is needed if
  - colectomy, ileostoma or J-pouch surgery is performed on a patient due to inflammatory bowel disease.
  - large parts of the patient's small intestine have to be removed and they need a ileostoma or jejunostoma.
- Patients need sufficient fluids at all stages and especially for ileostomy or jejunostomy – also salt, because they are at risk of fluid-electrolyte balance disorders.
- Supplementary intravenous nutrition may be needed in addition to enriched oral nutrition.

An intestinal stoma is made if part of the intestine has to be removed or allowed to rest due to illness, surgical intervention or injury, or in order to promote healing. The stoma can be permanent or temporary. Common diseases that can lead to permanent intestinal stoma include inflammatory bowel diseases and colorectal cancer.

The objective of nutritional care for stoma patients is to safeguard good nutritional status, promote the patient's recovery after the stoma surgery, and reduce the risk of bowel obstruction and gas formation. In ileostomy patients, the aim is also to control discharge from the stoma. Nutritional care is implemented with consideration to the patient's primary disease and its forms of treatment, the location of the stoma and the amount of small intestine remaining. It is important to assess the nutritional status of patients before and after intestinal surgery.

Ileostomy

The discharge from the stoma in ileostomy patients is loose and contains electrolytes. Transit time in the intestine is also faster and the stoma has nearly continuous discharge after the operation, usually a little over one litre per day. Possible infection and, on an individual basis, some foods and drinks also increase the amount of discharge. The large amount of watery stoma discharge puts ileostomy patients at risk of fluid-electrolyte balance disorders. The greater the amount of small intestine removed during surgery and the higher the stoma is positioned in the intestine, the more likely a patient is to develop absorption disorders. This means the risk of malnutrition and fluid-electrolyte balance disorders is high after extensive resection of the small intestine.

It takes 1–2 years for the bowel to adapt to the changed anatomy, and absorption of electrolytes and fluids from the small intestine will improve at the same time. After the adaptation stage, the stoma usually functions after meals, an average of five times a day, and the amount of discharge may decrease to less than one litre per day.

It may be possible to influence the volume and solidity of stoma discharge and gas formation by means of an individual diet. Large amounts of fibre and fat in the diet and alcohol use may increase the amount and looseness of the stoma discharge Experience-based observation has indicated that bananas, apples, potatoes, rice, pasta and cheese may help to solidify the stoma discharge. After the adaptation stage, a small portion of fresh vegetables, peeled fruit and berries does not significantly affect stoma discharge. Chewing gum, carbonated beverages, smoking and gulping food can increase the tendency to swallow air and the subsequent accumulation of gas in the intestine.

Colostomy

Colostomy patients still have part of their functioning colon and usually the entire small intestine, so there is no increased risk of permanent nutrition disorders and fluid balance-related problems. Stoma discharge (paksusuoliavanteen erite) becomes solid within a few weeks or months of surgery. After the adaptation stage, most patients can eat ordinary food. Only ingredients and foods that repeatedly cause symptoms should be replaced with suitable alternatives.

Some colostomy patients develop constipation, in which case ensuring sufficient fluid (1½–2 l drinks with meals and to quench thirst) and fibre intake on a daily basis. Constipation medication can also be used if necessary.

The smell of stools can be alleviated by sour milk products or lactic acid bacteria. Onions, cabbages, eggs, fish, strongly seasoned foods, vitamin and mineral products and antibiotics usually make the smell worse.

J-pouch

Small intestine J-pouch surgery is usually performed in cases of severe ulcerative colitis. The surgery involves removal of the colon and rectum. The pouch-like structure formed from the end of the small intestine is connected to the anal canal. While the pouch is healing, the patient may require a temporary protective ileostomy that discharges a large amount of fluid and salts. The J-pouch initially functions very frequently and then 3–8 times per day after adaptation. Excessive use of sugar may increase pouch functioning. Use of probiotics may help prevent infections in the J-pouch. Anaemia, vitamin B_{12} absorption disorder and a deterioration in bone density are possible after J-pouch surgery.

Implementation in the ward

After stoma surgery (avanneleikkaus), a diet for gastrointestinal patients should be ordered (see Appendix 18 p. 317–319 and Appendix 30 p. 338). The diet should also be enriched if the patient has malnutrition or is at risk of malnutrition.

The patient should be instructed to chew their food thoroughly. The risk of stoma obstruction is highest after the surgery. Ileostomy patients should be encouraged to eat

during the day and only have a small evening snack. This decreases the need to empty the stoma pouch at night.

After the adaptation stage, the patient should be encouraged to try food items that previously caused symptoms and avoid unnecessary restrictions.

The fluid lost via the stoma or diarrhoea is replaced by a sufficient amount of beverages and, if necessary, fluid administered intravenously. An adult's normal need for fluid is 2–2.5 litres per day, and the fluid lost through the stoma or diarrhoea should be added to this. Fevers and sweating (for example, during physical activity or in hot weather) also increase the need for fluids (see Assessing the need for nutrition and fluids p. 45).

Mineral water, diluted 100% juice, diluted oral nutritional supplement drinks, sport drinks or special hydration solutions that are available from a pharmacy or can be prepared at home (see Recipe for a home-made hydration drink, below) should be served to quench thirst. They are better absorbed than plain water. The beverages should be drunk in small amounts, at room temperature and preferably between meals. Since this affects dental health, dental care should be enhanced (see Consideration of oral health in nutritional care p. 84).

After surgery, ileostomy patients may require a salt supplement in the hospital. After the bowel has adapted, patients can usually manage with food that has normal salt content, except in cases of fever, diarrhoea and heavy sweating during which electrolyte loss is high. Patients with a jejunal stoma need sodium and potassium supplements on a continuous basis. These patients are particularly susceptible to dehydration, so it is important to ensure adequate fluid intake.

Home-made hydration drink *(source: Ravitsemustiede book, Duodecim 2000.)*

¾ tsp salt (3.5 g NaCl)
1 tsp baking soda (2,5 g $NaHCO_3$)
4 heaping teaspoons of sugar (40 g sucrose)
2,5 dl orange juice (1.5 g K)
+ 1 litre water for dilution

If the patient already has a stoma when arriving at the ward, suitable ingredients and individual food restrictions are clarified during the arrival discussion and taken into account when ordering food.

Nutrition counselling

Nutrition counselling is provided by a physician and the nursing staff – a stoma nurse in particular – in accordance with their job description.

Nutrition counselling provided by a nutritionist is needed by

- all ileostomy patients while they are in the ward and, after discharge, in connection with outpatient clinic appointments based on individual needs
- stoma and J-pouch patients who have malnutrition
- patients with a lot of food restrictions
- patients who are scheduled for radiotherapy and cytostatic therapy
- patients whose stoma has a lot of discharge after the adaptation stage (more than 1–2 litres/day)
- J-pouch patients with a lot of intestinal symptoms when infection of the pouch has been ruled out
- patients who have developed absorption disorders and/or short bowel syndrome due to extensive resection of the intestine.

Medicines and food supplements that require special attention

Removal of the lower part of the small intestine and J-pouch surgery can both reduce absorption of vitamin B_{12}. After removal of the lower part of the small intestine, increased loss of bile acids in conjunction with loose stools may lead to malabsorption of fat and fat-soluble vitamins. After extensive removal of the small intestine, the patient needs an individual assessment regarding the nutritional care implementation method and the necessary vitamin-mineral supplements and their appropriate route of administration.

SOURCES p. 362

Organ transplants

- **Long-term, end-stage organ failure before an organ transplant often weakens the patient's nutritional status and may set different requirements for nutritional care.**
- **It is essential to optimise nutritional status before organ transplantation and alleviate the symptoms caused by organ failure by means of appropriate nutritional care.**
- **After an organ transplant, the objective of nutritional care is to prevent the development of overweight and metabolic syndrome.**

An organ transplant is performed in a situation where the patient's own organ has stopped functioning or the patient's life is threatened by impaired organ function. Kidney, liver, heart, lung, pancreas and small intestine transplants, allogenic islet cell transplants and multiple tissue transplants are performed in Finland. In the future, limb transplants will also be possible. Joint transplants involving more than one organ are also possible (for example, heart and lungs). Criteria for assessing a patient's suitability for organ transplantation have been specified for every organ. In Finland, organ transplants for adults and children are performed at HUS Helsinki University Hospital.

An organ transplant is typically preceded by long-term organ failure, which affects the patient's nutritional status and may set different requirements for the patient's nutritional care (for example, phosphorus, potassium, salt and fluid restrictions in cases of renal failure that require dialysis). Since an increasing number of adult organ transplant patients are overweight, it is important to remember that an overweight patient may also have malnutrition and sarcopenia (Appendix 28 p. 336). During the waiting period for organ transplantation, the patient's nutritional status is maintained and improved if possible. Severe malnutrition and underweight may prevent organ transplantation. Nutritional care can alleviate symptoms and complications caused by organ failure (for example, renal failure and diabetes). Malnutrition is common in patients with end-stage failure, and in such cases the patient needs enhanced nutritional care. Children who are unable to eat enough need enteral nutrition to supplement or as the sole form of nutrition. Obesity (BMI ≥30 kg/m^2) can be an obstacle to organ transplantation. The aim is to reduce the weight slowly through a balanced diet and physical activity.

Immediately after an organ transplant, the objective of nutritional care during hospitalisation is to ensure adequate energy and nutrient intake, replenish low nutrient stores, maintain nutritional status, safeguard a child's growth and development, promote immunity and healing of wounds and surgical incisions, and provide the prerequisites for physical rehabilitation and restoration of functional capacity. Oral eating and enteral nutrition are considered the primary nutrition administration routes, in addition to which intravenous nutrition can be used if necessary.

When a patient is discharged after an organ transplant, the objective of nutritional care is to correct nutritional status and body composition and prevent the development of overweight and metabolic syndrome. As the oxygen supply to the body becomes normal and the stress-related metabolism turns off – especially after heart and lung

transplantation – the body uses the energy obtained from food efficiently, which makes patients susceptible to weight gain. Once the patient has recovered from surgery, the nutritional care is a health-promoting diet.

An organ transplant patient has to take anti-rejection drugs for the rest of their lives. These drugs cause adverse effects, such as hypertension, fat metabolism disorders, osteoporosis, type 2 diabetes, renal failure and electrolyte disorders. These drugs also have several harmful side effects that interfere with eating, such as nausea, vomiting and diarrhoea, which should be treated in a symptomatic manner. The permanent anti-rejection medication means that patients must ensure good food hygiene (see Food hygiene in patient meals p. 116 and Appendix 19 p. 320–321). Teenage organ transplant patients need special support with implementing a health-promoting diet and treating any associated diseases.

Organ transplantation improves the function of a particular organ, but it does not necessarily correct or cure the underlying disease that led to the transplant, and this fact must be taken into account in the patient's nutritional care. For example, a kidney transplant corrects renal failure but it does not cure the diabetes that caused the nephropathy. On the other hand, the patient's heart failure may have caused renal failure, and nutritional care for this condition continues after the heart transplant.

Implementation

The diet required for the patient's long-term disease should be ordered before the transplant (and after it if necessary). The appropriate amount of energy and protein in the diet and the need for oral nutritional supplements and food supplements should be assessed individually based on the patient's nutritional status and the nutritional care objectives (treating malnutrition, controlled weight loss, maintaining nutritional status).

High doses of corticosteroid medication increase the need for protein, which is why the patient needs a lot of protein (1.5–2 g/kg/day) immediately after the transplant and during treatment of acute rejection. Once the situation has stabilised after the organ transplant, the need for protein is no higher than normal.

A health-promoting diet is usually appropriate for a patient who has previously received an organ transplant, because it is suitable for preventing and treating many problems that develop in long-term monitoring.

Nutrition counselling

Nutrition counselling for organ transplant patients is provided by the physician and the nursing staff. Individual counselling provided by a nutritionist is needed by patients

- whose nutritional status prevents them from being added to the transplant queue (obesity or severe malnutrition)
- for whom treatment of the underlying disease can be enhanced and the symptoms alleviated with appropriate nutritional care during the organ transplant waiting period

- whose recovery from organ transplant surgery is complicated
- who have problems caused by graft-versus-host disease that affect nutrition need and absorption
- who develop several diseases that require dietary care (such as diabetes and renal failure) during long-term monitoring
- and all patients undergoing certain organ transplants (for example, intestine) starting in the organ transplant assessment stage.

Medicines and food supplements that require special attention

Many anti-rejection drugs interact with other medicines, natural products and food items. Grapefruit, lime, tangelo, pomelo, ugli, pomegranate or carambola should not be eaten at the same time as cyclosporine, tacrolimus and sirolimus medications. The patient's adequate calcium and vitamin D intake must be ensured during corticosteroid medication.

SOURCES p. 363

COVID-19 and other serious infections

- **Prevention, identification and treatment of malnutrition play a key role.**
- **Rehabilitation periods are typically long, and require regular monitoring of the patient's nutritional status, long-term nutritional care and adaptation of the treatment to the patient's clinical situation.**

The new coronavirus (SARS-CoV-2) that began spreading in 2019 causes an acute respiratory tract infection called COVID-19. Manifestation varies from asymptomatic to serious illness requiring hospitalisation or even intensive care. The symptoms can also vary as the disease progresses (see Table 40). Many symptoms of this infection seem to affect the sick person's appetite, amount of food eaten and nutrient absorption. Being over the age of 70 and long-term diseases that significantly impair lung or heart function or the body's immune system increase susceptibility to serious infections. Morbid obesity (BMI ≥40 kg/m^2) and smoking on a daily basis also increase the risk of serious illness.

Hospitalisation or intensive care for a serious infection may last for a long time, even weeks, and the same applies to rehabilitation from the infection. In some patients, the infection causes long-term, post-virus symptoms. Patients need individually planned nutritional rehabilitation during an extended period of hospital care and rehabilitation, and also in the case of prolonged symptoms.

Table 40. Infection symptoms that, for example, COVID-19 can cause

- headache
- smell or taste disturbances
- runny nose, stuffy nose
- cough
- shortness of breath
- weakness, fatigue
- muscle aches or pain
- sore throat, scratchy throat
- fever
- nausea, vomiting
- diarrhoea

Risk factors for serious infection are also risk factors for malnutrition, which is why screening for malnutrition risk is essential for an infection patient who has been hospitalised. Malnutrition significantly weakens the patient's prognosis. The prevalence of malnutrition in patients with serious infections, regardless of their age, appears to already be high upon arrival at the hospital. The infection and related inflammation, a low level of physical activity, and possible organ damage and systemic complications can further increase the loss of muscle mass and risk of malnutrition in patients who are already at risk. Infections with severe symptoms can lead to a weight loss both at home and in patients treated at the hospital. In other words, the patient's nutritional status plays a diverse role in infectious diseases. However, there seems to be no link between the intake of any single nutrient and the risk of infection or recovery from it.

Principles

The nutritional needs of an infection patient are quite similar to those of other patients requiring hospital care (see Assessing the need for nutrition and fluids p. 45). If energy consumption cannot be measured, the formula for estimating energy need is approximately 25 kcal/kg/day for obese patients and 27–30 kcal/kg/day for other patients. The recommendation for protein intake is over 1 g/kg/day. If the patient has no respiratory distress, a fat-carbohydrate ratio of 30:70 is recommended for energy intake. The ratio is 50:50 for patients on a ventilator. The objective for vitamins and minerals is to comply with population-level intake recommendations.

An infection patient in hospital care often requires an enriched diet, because the patient may have a poor appetite, they may be unable to eat large portions at one time, and nutritional status may have deteriorated even before hospital care began due to poor food intake and severe symptoms. Nutritional care should start within 24–48 hours of arrival at the hospital. When starting nutritional care, the potential risk of refeeding syndrome must be taken into account (see Refeeding syndrome p. 156).

If nutrition counselling and an enriched diet are not sufficient to safeguard the patient's nutritional intake, the patient should be offered oral nutritional supplements so that they provide the patient with at least 400 kcal/day of energy and at least 30 g/day of protein.

If eating remains inadequate or is not safe or possible, the patient's nutrition is ensured with enteral nutrition. Parenteral nutrition is used if enteral nutrition cannot provide sufficient nutrition or there are contraindications for it.

The implementation of nutritional care may be hampered by (non-invasive) respiratory support received by the patient, which makes oral eating difficult or prevents the placement of an enteral nutrition tube through the nose. The limited time available to nursing staff when working in the isolation room with the patient can also present challenges. Family visits to the ward are restricted or completely prohibited, which may affect the psychological well-being of patients and, on the other hand, prevent family members from bringing enjoyable snacks to the ward and assisting the patient in eating situations.

Patients may have long-term diseases that can be worsened by the stress of infection (for example, the tendency of diabetics to develop hyperglycaemia during an infection). The patient's associated diseases should be taken into account in their nutritional care. Difficulties the guidance of a speech therapist, and the texture of the diet changed or nutrition implemented through enteral nutrition if necessary.

The transition from enteral nutrition to oral eating is a critical stage in the patient's nutritional care. The amount of enteral nutrition should be gradually reduced while monitoring the patient's nutrient intake, and enteral nutrition may only be discontinued when it is certain that the patient is able to eat sufficiently (more than 75% of the calculated nutrition need for at least three days).

It may take a long time to recover from an extended period of intensive care. In addition to physical problems, such as muscle weakness associated with intensive care,

a recovering patient often has psychological, cognitive and broad-spectrum problems related to quality of life that may cause a long-term and significant decrease in functional capacity. During the rehabilitation phase, a combination of nutrition and physical activity is likely to have the best effect on restoring muscle mass and muscle strength as well as physical functional capacity. If necessary, medication (such as oxandrolone) can be used to support rehabilitation.

A patient recovering from intensive care may have an increased energy need of approximately 30-35 kcal/kg/day, and the need may be even higher in order to correct the nutritional status and allow for weight gain. The need for protein is also likely to be high (1.5–2.5 g/kg/day) in order to meet the need for rebuilding lost muscle mass. A high-protein diet is also necessary after discharge from the hospital.

If the patient has started taking oral nutritional supplements in the hospital to prevent or treat malnutrition, their use should be continued for at least one month, after which the effectiveness and expected benefit of the treatment should be assessed once a month.

Activities in the ward

Ordinary meals may be too heavy for the patient due to the extreme exhaustion associated with the illness and muscle weakness that follows intensive care. Plastic or cardboard dishes may be more suitable. In some situations, a straw can make it easier to drink fluids.

Nutrition counselling

Minimising the staff's exposure to infections is of utmost importance in hospital work, so remote connections can be utilised in the care and counselling of patients where applicable. The physician and the nursing staff provide the patient with information on the importance of nutrition in recovering from the infection and motivate the patient towards sufficient nutrition. A patient with a severe infection needs individual counselling provided by a nutritionist if

- they have several diseases or conditions that affect nutrition
- they are receiving enteral nutrition in a ward
- they are recovering from a long period of intensive care.

SOURCES p. 363

Psychiatric and developmental neuropsychiatric disorders

- Psychiatric disorders, such as depression, anxiety disorders, bipolar disorder and psychosis, as well as neuropsychiatric disorders such as autism spectrum disorder, Asperger syndrome and ADHD/ADD, may involve challenges related to eating and nutrition.
- Some psychiatric patients have malnutrition or are at risk of malnutrition. Some have challenges related to gaining weight and metabolic disorders. Malnutrition can also occur in overweight patients. Changes in appetite are common and very different in nature: in some people appetite decreases or disappears, while in others it increases.
- Many antipsychotic and antidepressant medications cause weight gain and affect metabolic risk factors. ADHD medication may reduce appetite and cause weight loss.
- Developmental neuropsychiatric disorders may involve very selective eating and, in general, sensory regulation disorders and gastrointestinal symptoms that can affect eating.

The objective of nutritional care for a psychiatric patient is to support eating that promotes health and thus improve the patient's nutritional status and coping. Meals are an important part of treatment and rehabilitation. The aim is to achieve eating habits – such as regular meals – that support a person's own well-being and to achieve or maintain an individually suitable weight that promotes health and coping.

Psychiatric disorders involve many factors that can make a person susceptible to weight changes. Mood changes and challenges related to coping can cause a person to neglect meals, lose weight and cause a decline in nutritional status. In depression, appetite may increase or decrease depending on the type of depression, while in bipolar disorder it can vary during episodes of depression and mania. Frequent consumption of coffee or energy drinks, alcohol and medicine abuse, and a poor financial situation can lead to an unhealthy diet and malnutrition. Psychosis disorders, such as schizophrenia, can involve forgetting to eat, delusions and food-related fears – for example, regarding food contamination or poisoned food – that make eating more difficult.

A decline in resources, abnormal daily rhythm, insufficient or excessive sleep, irregular eating and poor quality of food choices, emotional eating and a low level of physical activity can cause weight gain. Some psychiatric medications also interfere with appetite regulation and contribute to weight gain. However, this effect is individual. The possible effects of medications on eating, weight and nutritional status are presented in Table 41 p. 246. A significant increase in weight may weaken the commitment to pharmacotherapy, cause psychosocial and health problems and reduce the quality of life. In some patients, antipsychotics also increase the risk of type 2 diabetes and dyslipidaemia. Some psychiatric medications also cause dry mouth, constipation and other abdominal and intestinal symptoms.

Life expectancy for patients with severe depression and psychosis is approximately 10–14 years shorter than the general population due to somatic morbidity. At worst, a psychiatric disorder may delay the diagnosis and treatment of a somatic illness, which is why it is important to pay close attention to the somatic condition of psychiatric patients. The potential effects of medicines on the weight must be acknowledged and discussed when pharmacotherapy starts and whenever the medication changes. A patient's weight gain should be addressed as early as possible by providing support related to weight management.

Nutrition counselling has been found effective in terms of weight loss and eliminating the impacts that medication has on weight – also with psychosis medications – when it is initiated at the same time psychosis pharmacotherapy begins.

Table 41. Possible effects of psychiatric medications on eating, weight and nutritional status

Medicinal product	Indications	Possible effects
Clozapine	Treatment of schizophrenia and preventing recurrence	Increased appetite, weight gain, constipation, increased saliva secretion, stomach problems, increased diabetes risk
Some new generation antipsychotics (olanzapine, quetiapine, risperidone, asenapine)	Treatment of schizophrenia and bipolar disorder and preventing recurrence	Increased appetite, weight gain, decreased glucose and lipid metabolism, constipation, dry mouth, swelling, increased risk of type 2 diabetes
Traditional high-dose neuroleptics (chlorpromazine, levomepromazine, chlorprothixene)	Treatment of severe manic episodes in schizophrenia and bipolar disorder	Increased appetite, weight gain, decreased glucose and lipid metabolism, fatigue, dry mouth, stomach problems
Lithium	Treatment and prevention of depressive and manic phases in bipolar disorder	Lack of appetite, hypothyroidism, fatigue, weight gain, constipation, swelling, strong feeling of thirst
Sodium valproate	Treatment of depressive phases in bipolar disorder	Lack of appetite, nausea, stomach problems, fatigue, increased appetite, weight gain
Tricyclic antidepressants, mianserin, trazodone and mirtazapine	Treatment of depression	Increased appetite, weight gain
SSRI medications (selective serotonin reuptake inhibitors)	Treatment of depression and anxiety disorders	Lack of appetite, nausea, diarrhoea, stomach problems. Usually weight-neutral.
Psychosimulants (methylphenidate, lisdexamphetamine and dextroamphetamine)	Treatment of ADHD	Lack of appetite, weight loss, increased blood pressure

Developmental neuropsychiatric disorders

Developmental neuropsychiatric disorders, which include ADHD, ADD and autism spectrum disorder, may be associated with motor and sensory regulation problems that affect eating, such as difficulty in identifying hunger and fullness signals, swallowing and sensory sensitivity. The diet may be limited and unbalanced, in which case the objective is to gradually expand the diet. The primary aim for people with malnutrition is to ensure adequate energy intake and restore nutritional status before trying to expand the diet. Neuropsychiatric disorders are also commonly associated with stomach and intestinal symptoms, which must be taken into account in nutritional care. For example, gastro-oesophageal reflux (GOR), vomiting, and stomach problems may occur. ADHD drugs can reduce appetite, which can lead to weight loss and slower vertical growth in children and adolescents.

Autism spectrum disorder is characterised by abnormal interest or lack of interest in food. For some people, the composition and feel of food in the mouth and chewing are challenging. It may be difficult for a person to recognise bodily sensations, such as hunger and thirst. These factors should be taken into account when counselling for sufficient and balanced eating. It is also important to identify symptoms of disordered eating, as autism spectrum involves an increased risk of disordered eating.

Substance use disorders

Substance use disorders and excessive substance use may involve long-term neglect of eating, not feeling hungry, and replacement of food with intoxicants or sweets, which increases the likelihood of malnutrition. In addition, substance use disorders are generally associated with digestive tract disorders, pancreas and liver problems and nutrient deficiencies as well as social problems. Guidance related to regular, balanced eating is an important part of rehabilitation.

Implementation

Food should preferably be delivered to the ward preferably as a decentralised food distribution system. Individual patients can be provided with separately packaged food portions if dispensing food in the ward presents challenges. In cases of sensory regulation problems, texture-modified food can be utilised in order to facilitate swallowing and eating. If necessary, food for a neuropsychiatric patient can also be ordered food to the ward without mixing (for example, serving the vegetables in salads separately), which may facilitate acceptance of the foods.

Activities in the ward

Meals are an important part of rehabilitation, maintaining ordinary everyday routines and social interaction. It may be easier to implement regular eating in the ward, and the diet may be more balanced than at home. Meals provide a daily rhythm in the ward. On the other hand, meal situations may cause anxiety and discomfort, in which case methods of relieving those feelings should be considered with the patient and support provided during meals. For example, in cases of obsessive-compulsive disorder, meals may involve thoughts or functions that interfere with eating, such as fear of food contamination or food rituals. Sensitivity to stress is particularly common in neuropsychiatric disorders, so it is important to provide support in terms of a stress-free meal situation and eating.

Meals that support recovery can be promoted in the following ways:

- Meal situations should be as home-like, pleasant and calm as possible.
- Patients dispense their own food, with support if necessary. The composition of a suitable food portion can be illustrated using the plate model or other image models or a portion model compiled by a nurse. The patient's beverage choices should also be taken into consideration.
- If possible, the nurse should eat with the patients and serve as an example of eating.
- An enriched diet should be ordered for patients who have or are at risk of malnutrition, and they should also use oral nutritional supplements.
- Suitable food gifts should be discussed with family members.
- The patient is coached to take responsibility for eating that supports their recovery and food economy management, or the required support is ensured during home holidays.

Nutrition counselling

Nutrition counselling for a psychiatric patient must take into account the patient's current resources and the stage of illness as well as their food-related knowledge, skills and beliefs. Patients and their family should be included in the process of planning individual nutritional care. The objectives of nutritional care often involve 1–2 changes at a time, with consideration of methods that are suitable for each individual. Nutrition counselling is concrete and utilises clear instructions, illustrated materials, videos, functionality and psychoeducation. Nutrition counselling emphasises a resource-focused, solution-oriented, motivating and compassionate approach. The patient often needs encouragement to look after themselves and their bodily needs as well as positive feedback. Group counselling is also well suited for this patient group.

It is often difficult to find a good time for counselling. In the acute stage of an illness, the patient's ability to assimilate information is rarely sufficient and interaction is often challenging. However, counselling should start as soon as possible in order to prevent malnutrition and deterioration in nutritional status or a large weight gain and adverse metabolic effects. Eating that supports recovery can create a positive circle that increases the patient's perception of life management, improves their nutritional status and somatic condition, and may also alleviate psychological symptoms at the same time. When treating depression, for example, interventions aimed at improving diet quality have provided additional benefits related to recovery along with the other types of treatment.

The possible effects that the illness and medication has on eating, weight and nutritional status should be discussed with the patient. The patient should receive help with finding a meal rhythm that supports weight management, support related to selecting food and beverages and dispensing food, and encouragement to continue or find an enjoyable way of being physically active.

A sufficient and balanced diet includes something from each part of the food triangle. If necessary, a nutritionist helps the patient check that the diet is sufficiently balanced, despite restrictions (for example, only cold foods or hot foods or only foods of a certain shape or colour). A balanced diet is an entity that should always be considered over a period longer than one day. The diet can be nutritionally adequate even if, for example, it only includes a limited range of vegetables. It is also a good idea to check that the amount of fluids consumed does not fall below or exceed the physiological need.

Nutrition counselling is provided by a physician, the nursing staff and a nutritionist in accordance with their job description.

The following psychiatric patients require the special competence of a nutritionist:

- patients who have malnutrition, a severe risk of developing malnutrition, or disordered eating symptoms
- patients with impaired glucose tolerance or dyslipidaemia
- obese patients (BMI ≥30 kg/m^2) who have the resources needed for weight management
- patients who have another disease requiring dietary treatment
- patients with a very restricted diet.

Medicines and food supplements that require special attention

The need for a multivitamin-mineral product should be assessed individually. A patient who is in long-term ward care and gets very little outdoor activity has an increased likelihood of developing vitamin D deficiency, and in this case a vitamin D supplement is necessary. Depression symptoms may be associated with a deficiency or low levels of folate, vitamin B_{12} as well as iron deficiency anaemia, so concentrations of these should be measured when diagnosing and monitoring the disease. An omega-3 fatty acid supplement may be beneficial as support for other treatments when recovering from depression, especially in the case of treatment-resistant depression.

There is insufficient evidence regarding the benefits of food supplements or elimination diets in developmental neuropsychiatric disorders, such as ADHD and autism spectrum disorders.

When a patient is taking medication that affects eating and weight, they should undergo regular monitoring of weight (at the start of treatment, on a weekly basis for 6 weeks, then every 3 months until one year (and at least annually after that), blood sugar and lipid concentrations (at the start of treatment, and at 3 months, 9 months and annually) and blood pressure (at the start of treatment, once a month for 3 months, and annually after that). Any changes should be addressed immediately. Metformin may be beneficial in preventing weight gain caused by antipsychotics. It is important to regularly (3–6-month intervals) monitor weight and height in children and young people who take ADHD medications, especially at the start of treatment (see Promoting eating in children who eat selectively or have a poor appetite p. 267). Monitoring is also necessary for adults who take ADHD medications and experience excessive weight loss.

SOURCES p. 364

Eating disorders

- Eating disorders include anorexia nervosa, bulimia nervosa, and atypical eating disorders, which are the most common of eating disorders. Eating disorders occur in all genders.
- Avoidant restrictive food intake disorder (ARFID) is a newly identified eating disorder. It refers to a disorder that involves avoiding and restricting eating disorder so that the person is unable to maintain a sufficient nutritional status for their age. It can lead to underweight and slow growth in children, as well as nutrient deficiencies and adverse psychosocial effects.
- Regardless of the type of eating disorder, it is essential to stop weight loss, break the circle of eating disorder symptoms – which means correcting the state of starvation in the body – and facilitate mental health.
- Nutritional care for anorexia nervosa is based on mechanical eating. The diet consists of nutritionally balanced basic food, the range of foods is expanded, and portion size is individually adjusted. Additional snacks, energy-rich foods and/or oral nutritional supplements are usually needed to correct the weight.
- The priority in nutritional care for patients with bulimia nervosa is the use of mechanical eating methods to end the habit of overeating and break the binge/purge cycle.
- Eating disorders are illnesses of the body and mind, and their treatment focuses on both areas.

The key characteristics of eating disorders are presented in Table 42, p. 252. When treating anorexia nervosa, weight correction and improved nutritional status are a priority and make psychological treatment possible. The restriction of eating and compensation methods that characterise bulimia symptoms cause intensification of the binge/purge cycle, and eating outside binge eating episodes may be limited. When treating bulimia, it is essential to learn to eat mechanically and to break the cycle of weight loss. Diabetes, especially type 1 diabetes, may be associated with an elevated risk of eating disorders. In this case, disordered eating symptoms may involve binge eating high-carbohydrate foods and intentionally failing to take insulin. This is called diabulimia and it is important to identify and treat this condition. ARFID often develops in conjunction with autism spectrum disorders, and in many cases it involves sensory regulation disorders. Some patients with anorexia nervosa have exaggerated autism spectrum disorder traits.

The starting point for successful treatment of all eating disorders is multi-professional cooperation. The objectives and implementation methods for nutritional care related to eating disorders must be agreed with the patient or with the child/young person and their parents. The aim is to help the patient to achieve and maintain good nutritional status and also to safeguard normal growth and development in children and young people, to alleviate disordered eating symptoms and help the patient give them up at the behavioural and thought level, to support the patient in achieving and accepting their normal biological weight, and to support social and psychological well-being.

Table 42. Key features of eating disorders

Eating disorder	Key features
Anorexia nervosa	Intentional weight loss through inadequate energy intake and/or compulsive exercise, which leads to malnutrition and underweight. Often associated with a body image disorder.
Bulimia nervosa	Recurrent periods of binge eating and subsequent restrictions on eating, fasting, vomiting, use of laxatives and diuretics, and/or compulsive exercise. When binge eating, a person eats large amounts of food (typically more than 1,000 kcal at a time) in an episode-type manner. Binge eating is associated with a feeling of losing control over eating and preoccupation with weight and appearance.
Atypical eating disorders	The diagnostic criteria for the most common eating disorders, such as anorexia nervosa or bulimia nervosa, are not met, symptoms are less severe or a key symptom is missing.
Binge Eating Disorder (BED)	Binge eating episodes (as in bulimia nervosa) occur but without compensation, such as vomiting. Often leads to weight gain and overweight.
ARFID	Very selective eating and suspicion and fear regarding different foods already in early childhood. The range of suitable foods and foods is limited due to, for example, sensory sensitivity. Appetite can be poor, and there is no interest in eating. An eating-related event perceived as frightening or unpleasant (e.g. a feeling of suffocation) may have triggered the symptoms. No fear of obesity or body image disorder.

Nutritional status and weight monitoring

Weight, laboratory tests, clinical status and menstrual cycle function as well as vertical growth in children are key indicators of nutritional status (see Assessing nutritional status and diagnosing malnutrition in children p. 43). Weight is usually monitored more frequently in underweight people. Possible swelling, dehydration, fluid loading or constipation may distort the weight reading. Blood sugar and phosphate concentration as well as possible electrolyte and fluid imbalances and malnutrition-related leukopenia should be checked via laboratory tests. Bradycardia and cardiac conduction disorders should be observed and examined by means of monitoring and an ECG examination. Severe weight loss and malnutrition can cause menstrual periods to stop, which increases the likelihood of skeletal damage. Skeletal health is assessed using bone density measurement. Other tests should be used as needed when assessing nutritional status.

Based on the disorder and its course, weight can be measured in thin clothing so that the patient sees or does not see the weight reading. In the acute stage of an eating disorder, information on weight development may support the disease and increase weight-related anxiety. In a family-based treatment model, weight is measured and

examined together. A patient in the recovery phase is usually better able to deal with information about their weight and can work on accepting it.

Energy need

Weight correction in an underweight patient is individual, and the need for energy increases during nutritional rehabilitation as the metabolism improves and weight increases. A suitable starting point in ward care is usually 1,400–1,600 kcal/day. The energy level of the diet should be gradually increased, for example, by 200 kcal/day increments, according to weight development and the weight target. In cases of very severe malnutrition (<70 % of average weight for height, ≤ BMI 12 kg/m^2) and after long-term fasting, a rapid increase in the amount of energy can increase the risk of refeeding syndrome (see Refeeding syndrome p. 156) and the related hypophosphatemia as well as other problems. In this case, it is important to start at a low energy level (≤1,200 kcal/day) and increase energy intake by, for example, 200 kcal every 1–3 days, with monitoring that involves measuring electrolyte, glucose and phosphate levels on a daily basis at the beginning. Weight correction often requires high energy levels, such as 3,000–4,000 kcal/day or more. The additional energy needed for growth should be taken into account in children and disordered. If necessary, the amount of exercise should be limited to reduce energy consumption. The recommended weight gain is 0.5–1 kg per week, but even slower rates are acceptable when the direction is correct. Even after the target weight has been reached, the energy requirement of a person with anorexia nervosa may be exceptionally high. However, the need will gradually stabilise once the weight maintenance phase has been reached.

The need for energy should be assessed individually in patients who are not underweight. In order to prevent binge eating, an individual energy level corresponding to the needs of the body should be sought. This is usually at least 1,800–2,200 kcal per day.

Nutritional care for eating disorders is based on mechanical eating methods

The key areas of mechanical eating are:

1. A regular meal rhythm (meals and snacks at least every 3–4 hours).
2. A sufficient amount of food and energy and nutrient intake
3. Diversity of the diet, for example, food items from every group in the food triangle on a daily basis
4. Permissive and flexible eating that includes all kinds of food, also energy-rich food items and eating in different meal settings, such as social situations.

Mechanical eating improves nutritional status, restores feelings of hunger and fullness, and allows the body to find its normal biological weight. Correcting malnutrition also makes psychological work possible and reduces the mood-related and compulsive symptoms that accompany eating disorders. Mechanical eating also helps to reduce the risk of binge episodes and the risk of purge need.

The following factors are taken into account in the diet of a **patient with malnutrition**:

- The patient eats 5–6 meals a day, approximately every 3–4 hours even if they do not feel hungry.
- A morning snack and/or late evening snack may be necessary.
- The patient eats ordinary food in portion sizes that comply with the meal plan.
- Energy-rich food items, such as supplemented milkshakes or pastries, or additional snacks, should be added to the diet if necessary.
- The patient consumes a moderate total amount of fluids, which is 1.5–2 litres per day for most people, and 1–1.5 litres at the beginning of the treatment. Large amounts of fluids should be avoided because they take up space needed for meals.
- Treatment can also utilise a plate model to illustrates sufficient eating. In this model, 1/3 of the plate is protein-rich food, 1/3 is food containing carbohydrates, and a maximum of 1/3 of the plate is raw or cooked vegetables to provide flavour and colour. The meal includes the agreed amount of bread, bread fat, cheese/cold cuts, salad dressing, beverage and dessert.
- As nutritional care progresses, the enriched diet provided by food services should be utilised with care so that the patient does not think that small portion sizes are enough to meet their needs.

Physical and psychological symptoms may make sufficient, diverse and permissive eating challenging for a person with an eating disorder. A strong fear of food, certain ingredients and weight gain make eating more difficult. Stomach pain, slower emptying of the stomach and the related feeling of fullness, swelling, constipation, and fatigue may also prevent sufficient eating, especially at the beginning of nutritional care. If necessary, nutrient intake can be increased with oral nutritional supplements (e.g. 1–2 packages/day). These can also be used to replace uneaten meals (for example, 2 packages) or parts of them (1 package). Enteral nutrition can be used temporarily if malnutrition is very severe and has not been corrected using the above methods, or if the patient is unable to eat ordinary food. Intravenous nutrition is not recommended.

Activities in food services

Food services plays a key role in implementing diets for patients with eating disorders. It is particularly important that patients who have a meal plan receive food that complies with their meal plan and care agreement. The person dispensing the food has a lot of responsibility for ensuring that an eating disorder patient receives a meal that complies with their meal plan.

The food is prepared as a basic diet, a basic diet containing no red meat, a pescovegetarian diet, a lacto-ovovegetarian diet or a lactovegetarian diet in the portion size ordered by the ward. The nutritional sufficiency and implementation of vegan diets for patients with anorexia nervosa often involve major challenges due to, for example, the large volumes of food needed and digestive tract symptoms. Vegan food can be ordered if the care team and a nutritionist decide that it supports the patient's recovery and if food services can implement it in a manner that is nutritionally sufficient.

Activities in the ward

Ward care should be implemented in cases involving a serious threat to health, severe physical or psychological symptoms, or if the treatment of the disorder does not progress. With support from the nursing staff, the patient learns to eat portions of sufficient size on a regular basis. At the beginning of treatment, a food tray is often ordered as a ready portion or assembled according to the meal plan. The nursing staff supports and, if necessary, assists with assembling meals and also eats with patients who have eating disorders when possible. As recovery progresses, responsibility for dispensing and food choices is gradually transferred to the patient. Foods that the patient has denied themselves or food that they fear are added to the daily diet on an individual basis. The daily quantity and quality of beverages are agreed upon. The energy content of the diet is not mentioned to the patient. If necessary, the duration of meals is limited to approximately half an hour. In family-based treatment for children and young people (the Maudsley method), parents support the patient in meal situations and they are encouraged to take responsibility for meals, which then continues at home.

The ward is responsible for

- assembling the meal in decentralised food distribution as agreed in the nutritional care plan
- dispensing bread fat and salad dressing and ensuring that the patient eats them
- serving snacks and ensuring that the patient eats them
- providing the appropriate amount of meal beverages and drinks to quench thirst
- serving oral nutritional supplements as agreed and ensuring that the patient eats them
- administering any magnesium, potassium and phosphate supplements and vitamin-mineral supplements
- Ensuring an environment and atmosphere in which food and body speech is sensitive to eating disorders
- weighing the patient at the agreed intervals and using the agreed measurement method
- ensuring continuity of treatment after discharge.

Meal situations are frightening for patients with eating disorders and they require additional support in dealing with them. The calming presence of the nursing staff and individual methods make the patient feel better (for example, eating with support/eating together) and may alleviate anxiety. The patient needs support before, during and after a meal.

Nutrition counselling

With the patient and possibly other care team members and the family, a nutritionist plans, implements and, assesses a nutritional care plan that specifies the desired meal rhythm, suitable amounts of food and food choices. If necessary, a meal plan can be prepared to help with meals and identify appropriate portion sizes. The meal plan should be updated regularly and discontinued as nutritional care progresses. The family-based treatment model involves guiding and supporting parents regarding how to implement meals for children/young people at home. The parents practise the skills needed to support eating during family meals with support from professionals.

Recovery from eating disorder is a challenging and time-consuming process, and the treatment requires a gentle approach but also firmness when dealing with frightening changes. The key factors are establishing a confidential care relationship, psychoeducation – also known as conscious guidance – outsourcing of symptoms, finding solutions that promote recovery in a client-oriented manner, and noticing successes and progress. The strengthening and healing of the body and behaviour that supports this process should be discussed with the patient. If the symptoms involve binge eating or vomiting, it is important to consider the behavioural chains that have led to these activities and review situations where the patient has successfully avoided them. Patients who vomit have a special risk of dental erosion (see Consideration of oral health in nutritional care p. 84).

During nutrition counselling, discussion should focus on what an appropriate amount of food the perspective of sufficient eating looks is in terms of the size and number of meals rather than kilocalories or grams. Written and illustrated instructions, such as portion images, and eating model meals with the patient whenever possible should be used in the counselling.

A key element in the nutritional care of ARFID is to gradually expand the diet and correct nutrient deficiencies and possible malnutrition at an individual pace. The methods include exposing the patient to new foods, a feeling of fullness or fear of eating. If necessary, oral nutritional supplements or enteral nutrition can be used in the acute phase.

The key treatment model for ARFID is based on cognitive behavioural therapy (CBT-AR), which has a four-stage patient-oriented programme that is suitable for treating children, adolescents and adults over the age of 10. The family-based treatment model has also been successfully used to treat children and young people. This emphasises the active role of the family, empowering parents and striving for behavioural change.

Medicines and food supplements that require special attention

Sufficient intake of dietary calcium and vitamin D is necessary to support bone health, and this is often not realised in malnutrition. Young people and adults should receive calcium (1,000 mg/day) and vitamin D (20 µg/day) supplements at the start of anorexia nervosa treatment. Calcium (500–1,000 mg/day) and vitamin D supplements (10–20 µg/day) are recommended for children if their use of dairy products is low. An iron supplement should be administered in cases involving iron deficiency anaemia. In cases of severe malnutrition, a phosphate supplement may be beneficial to prevent blood phosphate levels from declining excessively at the beginning of nutritional care. If necessary, a thiamine or magnesium supplement should be administered in Refeeding syndrome (see Refeeding syndrome p. 156). In particular, patients who vomit may need potassium supplements. If necessary, a multivitamin-mineral supplement ensures sufficient nutrient intake. Food supplements should be reduced or discontinued as the nutritional status improves.

SOURCES p. 364

Patients with multiple conditions

- Nutritional care for patients with multiple diseases must take into account the effects of different diseases and medication on nutrition and the implementation of nutritional care.
- Patients with comorbidity have a high risk of malnutrition.
- A patient with comorbidity often needs individual counselling from a nutritionist in order to adapt the disease-specific nutritional care recommendations into a viable entity.

Patients with comorbidity have at least two long-term diseases or factors affecting their health. Co-morbidity is more common among older people than young persons or the working-age population. Treatment of patients with comorbidity (including their nutritional care) must take the overall situation and individuality into consideration. Decisions on treatment should be made with the patient, in which case the plan takes the patient's requests, goals and functional capacity into account. This approach may encourage the patient to commit to their own treatment. Disease-specific care recommendations should be applied so that the instructions do not contain inconsistencies and compliance with them does not over-burden the patient.

Principles

The same methods are used for nutritional risk screening and nutritional status assessment as with other patients (see Risk of malnutrition p. 38). Nutritional care for acute care patients with comorbidity who have or are at risk of malnutrition should start as soon as possible to prevent the loss of muscle strength and mass. Enhanced nutritional care in patients with comorbidity does not differ from that of other patients in terms of methods, but the use of oral nutritional supplements in particular (see Oral nutritional supplements p. 145) is a cost-effective way of improving nutritional status and quality of life in patients with comorbidity. In patients with severe malnutrition, the risk of refeeding syndrome should be taken into account when enhancing nutritional care (see Refeeding syndrome p. 156).

When the patient has several different diseases in which nutrition plays an important treatment role, an individual plan and counselling that takes the overall situation into account is necessary. For example, the plan for a patient who has renal and heart failure, diabetes, a chronic pressure ulcer in the leg and obesity takes into account good management of sugar values in relation to wound healing as well as sufficient protein and energy intake. Sufficient energy intake also supports the treatment of kidney disease. Implementation of any fluid restriction required by the diseases is also important. Acute issues take priority in acute medical care. An example of this is deviating from the care guideline for kidney disease with regard to the phosphorus restriction in a wound patient who has pneumonia.

Treatment of obesity in people over the age of 75 is only appropriate if weight loss is considered to have a positive effect on health and functional capacity. A particularly moderate energy restriction is recommended for people suffering from sarcopenic obesity, as a slow rate of weight loss preserves muscle tissue (see the Food recommendation for older adults).

Implementation

For older patients with comorbidity, the calculated energy requirement is 27 kcal/kg/day (per kilogram of current weight), and 30 kcal/kg/day for patients with severe malnutrition. The minimum protein requirement is 1.2–1.4 g/kg/day. The basic daily need for vitamins and minerals must be ensured, taking into account the recommendations provided for different age groups (for example, vitamin D). Any diagnosed or suspected nutrient deficiencies should be treated using separate products.

Nutritional care started during acute medical care should continue after the end of the acute care period for patients with comorbidity who have malnutrition or are at risk of malnutrition. The duration and effectiveness of the care should be assessed using the individual objectives set for nutritional care. However, nutritional care usually has to continue for several months in order to achieve favourable results.

Activities in the ward

A food order is placed with consideration to the disease situation and in a multi-professional manner if necessary. Patients who have malnutrition or are at risk of malnutrition and patients with a poor appetite should be offered appropriate suitable oral nutritional supplements. Suitable fluid intake must be ensured.

Nutrition counselling

In particular, patients who have malnutrition or are at risk of malnutrition or whose diseases require adherence to conflicting special diets needs individual nutrition counselling provided by nutritionist. This makes it possible to use the disease-specific guidelines for nutritional care to build a diet entity that takes the patient's needs and wishes into account and can implemented in practice. Care for people with multiple conditions should be assessed individually.

Medicines and food supplements that require special attention

Polypharmacy is very common in people with comorbidity. If necessary, an overall assessment of pharmacotherapy should be performed as multi-professional cooperation with pharmacy professionals.

▶ SOURCES p. 364

Palliative care

- **The objective of nutritional care in the palliative treatment phase is to maintain or improve the patient's nutritional status and quality of life.**
- **The patient's interest in food and drink usually decreases death approaches in the end-of-life stage. In this case, food and drink are offered with respect for the patient's will.**

Palliative (symptomatic) care refers to the active holistic treatment of a patient with a fatal or life-threatening illness and their family and friends in order to prevent and alleviate suffering and preserve the quality of life. A palliative care line refers to a stage of illness where the course of the disease can no longer be significantly influenced. Palliative care has not been defined in relation to the time of death, although the need for it increases significantly at the end of life. In other words, the palliative care phase may last for years and the patient will go through different phases with their disease during this time. End-of-life care is part of palliative care and takes place very close to the presumed time of death (during the last days or weeks). According to the WHO definition, all people with a fatal or life-threatening disease are entitled to palliative care without any diagnostic limitations.

Principles

The objective of palliative care is to maintain the patient's functional capacity and good quality of life for as long as possible. This also includes maintaining nutritional status or slowing deterioration of nutritional status and controlling weight loss. Ensuring good nutritional status helps to maintain functional capacity and quality of life and, for example, increases tolerance for palliative cancer medication.

The progress of the illness often makes eating more difficult. An advanced illness often causes a decrease in appetite and the feeling of hunger, which means that even small portions of food rapidly cause a feeling of fullness. The sense of taste may also change, and dishes that the patient previously enjoyed may no longer taste good. Possible difficulties in swallowing may become worse. Problems caused by illnesses and the medications used to treat them, such as pain, nausea, constipation and a feeling of dry mouth, may also prevent eating. Therefore, the aim should be to try and deal with problems that hinder eating as well as possible.

In the advanced stage of the disease, the body will no longer be able to utilise food regardless of eating or supported nutrition. Metabolic changes lead to accelerated loss of fat and muscle tissue. This situation is called irreversible cachexia. Typical symptoms related to the situation include poor appetite, exhaustion and reduced functional capacity.

A patient who is near death and in the end-of-life care stage usually doesn't want to eat anymore and has no feeling of hunger. This naturally raises concern among relatives, and continuous encouragement to eat can feel stressful to the patient. However, a lack of nutrition at this stage no longer affects the patient's condition or life expectancy.

Forced eating may worsen the patient's condition by causing nausea. The main purpose of eating at this stage is to produce joy and pleasure. The patient's living will should also include their wishes related to nutrition and its implementation.

The most common causes of dehydration in the palliative stage are loss of liquids (for example, vomiting, diarrhoea, fever, diuretics) or inadequate fluid intake, in which case hydration may be necessary to relieve the patient's symptoms. However, intravenous or subcutaneous hydration has no effect on the prognosis in end-of-life care: it does not reduce weakness, hallucinations or delirium or decrease creatinine concentration. On the other hand, the adverse effects of intravenous hydration are significant: swelling, shortness of breath and the formation of pleural fluid and ascites may increase. Dehydration in an end-of-life care patient may also be caused by movement of circulating fluid volume into the interstitial space, in which case hydration will not improve the general condition of the patient.

Implementation

An essential part of planning and implementing nutritional care, involves listening to the patient's wishes and also including family and friends in the discussion. The patient's normal eating should be supported for as long as possible. The food is modified individually according to the patient's needs so that eating goes as smoothly as possible. The food texture, temperature, portion size, amount of spices, salt and sugar, and food items are selected to meet the patient's needs and wishes as much as is possible. Enriched diet practices (see Enriched diet p. 135) can slow the deterioration of nutritional status during palliative care.

If eating is not possible because of the illness or treatments, the patient's nutritional care should be planned on an individual basis. Use of enteral nutrition or intravenous nutrition can be considered if the patient is hungry and is dying of starvation rather than from their illness. Eating problems are very common in patients with severe dementia. However, enteral nutrition is not usually started in this patient group. There is no evidence of the benefits of enteral nutrition, and its use may prolong the suffering of a person with a memory disorder.

A patient in the end-of-life stage phase should be offered food and drink as long as they are able and willing to accept them. All food restrictions should be discontinued. The best way to support this is to occasionally provide the patient with small servings of foods and beverages that they want. The feeling of thirst can best be relieved by frequently wetting the patient's mouth.

Activities in the ward

The aim is to keep the patient's nutritional status at the best possible level during palliative care. The patient's nutritional status, weight development and use of food should be monitored and, if necessary, an enriched diet ordered for the patient. Oral nutritional supplements and favourite foods should also be offered.

A patient in end-of-life care should be offered drinks and food according to their wishes, and in small servings when they taste best to the patient. It is a good idea to give the patient access to a refrigerator so that family and friends can also bring familiar foods. Good oral care and mouth wetting with a cotton swab designed for this purpose should also be ensured.

Nutrition counselling

Depending on their situation, the patient should also receive nutrition counselling during the palliative care phase. The patient and their family should be informed about the importance of maintaining good nutritional status and preventing malnutrition. If necessary, the patient should receive instructions on implementing enriched nutrition and the use of oral nutritional supplements. Counselling should take the patient's individual needs into consideration. During the end-of-life care stage, the patient and especially their family members should receive support regarding the discontinuation of nutrition and fluid intake.

SOURCES p. 364

9

NUTRITIONAL CARE IN DIFFERENT AGE GROUPS

Children and teenagers

- Children should be offered age-appropriate food that suits their taste.
- The child should be consulted in matters related to eating and their views respected.
- The objective of nutritional care is sufficient nutrition for the child, which ensures normal growth and development and promotes recovery from the disease.
- Children and young people who are still growing are particularly vulnerable to malnutrition. If necessary, nutritional care should be enhanced using a variety of methods.

The objectives of nutritional care are influenced by the nutritional status of the child and young person, their appetite, the illness and its treatment as well as the length of the treatment period and any special diets. When assessing the nutritional status of children, it is essential to use the growth curve and growth screening tool and assess the situation (see Terveyskylä/kasvukäyrät, available in Finnish).Weight and height are measured when starting the treatment period and repeated at the agreed intervals on an individual basis. Enhancing nutritional care on an individual basis is of utmost importance for children

with malnutrition and at risk of malnutrition (see Nutritional status and screening for risk of malnutrition p. 38). When treating obesity in children, the Current Care Guideline followed (Obesity Current Care 2021).

Some children also eat well outside their homes, but a different environment, unfamiliar people, the illness and it treatments may affect appetite in some children. A child may also express their emotions and distress by eating selectively or not eating at all. It is also typical for appetite to vary in children, and a single meal that is smaller than usual is not a problem. The child should not be forced to eat on a day when they are not interested in food, as coercion can cause reluctance regarding food and the meal situation. Children who eat selectively obtain more energy from snacks and less from main meals than other children, so the snacks served to selective eaters in particular must be balanced.

A normal basic diet is suitable for children who have no nutrition-related problems. Taking taste preferences and special needs as well as age-appropriate eating into account is a good idea with children. Meals provide a daily rhythm.

A child who has a special diet or special needs for health reasons should be served appropriate and safe food. In order to implement challenging special diets, joint meetings should be arranged with the child's parents, a nutritionist and a responsible nurse as well as a food services representative if necessary. A child may also need food that is kept separate from the basic menu due to their beliefs (religious, ethical). Vegetarian food options implemented in a balanced manner (see Vegetarian diets p. 97) are also generally suitable for diets based on beliefs.

Assessing nutritional needs

In comparison to adults, children need a lot of energy and nutrients in relation to their body size to ensure growth and development, and they have small nutrient reserves. For example, children have a proportionally higher need for energy, protein and fluids than adults. As a result, children are sensitive to nutrient deficiencies and fluid balance disturbances.

The energy and nutrient needs of sick children may differ from those of healthy children, so the need should always be assessed individually. For example, poor growth or an illness may increase the need for nutrients, while the reduced activity of a sick child may reduce their need for energy. Assessment of the energy, protein and fluid needs of a sick child is presented in Chapter 3 (see Assessing the need for nutrition and fluids p. 45). Weight loss is not the objective for an acutely ill overweight or obese child.

Considerations in the diet of children under 1 year of age

With the exception of vitamin D, breast milk meets the dietary needs for most children of normal birth weight until the age of approximately six months. Breastfeeding and breast milk expression should be supported. Exclusive breastfeeding is recommended until the age of 4–6 months and then partial breastfeeding until the age of 6–12 months, and for longer if so desired by the family. Exclusive breastfeeding means that the child receives only breast milk as food, either via breastfeeding or expressed milk, and the necessary nutritional supplements. If breastfeeding continues for more than one year, it is important to also expand the child's diet and for the child to eat with the rest of the family. Infant formula or follow-on formula should be used if breastfeeding is not possible for a child under the age of 1.

Additional food should start at the age of 4–6 months according to individual needs. Additional foods served to infants include vegetable, berry and fruit purée, porridge, meat, chicken and fish purée, peas and beans. New foods are offered to the baby in a diverse manner from the very beginning. Food texture should become coarser in an age-appropriate manner and with consideration to illnesses and development. Food and beverages containing salt and a lot of sugar should be avoided in children under the age of 1, and the Finnish Food Authority's General instructions on safe use of foodstuffs taken into account. Offering vegetables in small pieces suitable for eating as finger food (Table 43 p. 266) strengthens oral motor function.

Table 43. Examples of foods suitable for starting to eat finger foods*

Food	Preparation
Chopped vegetables and root vegetables – carrot, cucumber, potato, sweet potato, cauliflower, broccoli, parsnip, courgette	Steamed, boiled or baked in the oven until soft
Avocado	Thick slices
Tender meat and game – chicken, turkey, pork, beef, lamb – elk meat, reindeer	Thoroughly cooked, in thin strips, as minced meat or meat balls
Fish	Cooked until soft without bones
Fruit and domestic berries	Fresh (soft fruit and berries) or slightly steamed
Soft bread	Home-made without salt, in suitable pieces
Thick porridges	Without salt
Corn crisps	As such
Porridge rice	Cooked until soft, the rice can be rolled into "balls"
Soft, salt-free tofu	As such, cut into pieces
Egg	Thoroughly cooked, as scrambled eggs

* When serving finger food, the child's motor development and number of teeth should be taken into account.
Source: https://www.hyvis.fi/documents/22609/76644/Potilasohje_lapsen_sormiruokailuun.pdf/77a57645-aa70-beb4-3e7f-aaf0fb318f2b?t=1629356173495 (in Finnish)

Promoting meals for children who eat very little or selectively

- The food items on the children's menu should be named in a way that describes the content, but they can be given fun names if necessary.
- Dishes, utensils and food trays that are suitable for children are used, and eating with the fingers should also be possible (see options Table 43 p. 266).
- The selection of ingredients should include energy-rich but health-promoting foods (with consideration to the quality of carbohydrates and fats) and rapeseed oil supplements if necessary.
- The child should be included in food dispensing when possible.
- The different parts of the meal are clearly separated on the plate and not mixed together.
- Eating situations should be arranged so that they are calm and, if possible, home-like.
- The child should eat together with other children, parents or a nurse.
- In special situations, the ward agrees with the parents on offering and bringing food to the ward.
- A bulletin about children's meals should be compiled for parents. This briefly explains how children's meals are implemented, what alternatives are available for a child with a poor appetite and requests related to food gifts.

Implementation in the ward

The arrival discussion clarifies what diet the child follows at home, and this provides the basis for the child's meals during the treatment period. If the child is breastfed, support for breastfeeding is provided according to the family's wishes. A calm suitable space for breastfeeding is required as well as encouragement and guidance for the mother (see NEUKO database/Breastfeeding in Finnish). In cases of breastfeeding problems, the family can also be referred to a breastfeeding outpatient clinic/appointment.

Children should be offered age-appropriate or individually suitable food prepared in food services or industrial children's food. If eating with the fingers has begun at home, it will continue in the hospital if possible.

In many cases, sick children eat poorly while in the hospital. In order to ensure that a child eats at least small quantities, it is important to serve food that is familiar and pleasing (see Info box). The hygienic quality of products served separately must be ensured (cold chain/heating).

Enhancing nutritional care

Nutrient intake in children with malnutrition or at risk of malnutrition is improved by:

- serving favourite foods and extra snacks
- increasing the energy density of foods with a fat and protein supplement suitable for children (Appendix p. 322)
- offering ready-to-eat oral nutritional supplements that are suitable for children (drinks and puddings). See Oral nutritional supplements p. 145.

Enteral nutrition should be planned if the energy intake remains low despite efforts to improve it. Intravenous nutrition should be initiated if enteral nutrition is not sufficient or possible.

If an infant has excessive reflux, the milk used by the child should be thickened with a thickener intended for children under 3 years of age (see Appendix 21 p. 323–324. Thickening of fluids for patients with difficulty swallowing/dysphagia and infants who have a lot of reflux).

Medicines and food supplements that require special attention

All children are given a vitamin D product according to the age-specific recommendation and the nutrition they receive (National Nutrition Council recommendation for vitamin D).

▶ SOURCES p. 365

Older adults

- ▶ The risk of malnutrition develops quickly when an older person in good condition becomes sick.
- ▶ The objective of nutritional care for older adults is to improve quality of life, maintain functional capacity and slow the progress of diagnosed diseases.
- ▶ Important factors in a diet for older adults is to maintain appetite, a sufficient amount of food and, in particular, to ensure energy and protein intake.
- ▶ Assessment of nutritional status is an important part of an overall geriatric evaluation.

Food and meals provide psychological and social pleasure, provide a daily rhythm, and create a sense of security. In addition to diet, physical activity promotes the preservation of functional capacity. Ingredients should be used in a diverse and varied manner. No ingredients should be excluded from the diet unless this is necessary for medical reasons or dietary treatment of the disease. The principles of a health-promoting diet, such as the quality of fat and carbohydrates, do not change as people age. The older population means the segment of population that has reached the eligible age for a retirement (old

age) pension, in other words, people over the age of 65. However, older adults are a very heterogeneous group, with differences between individuals caused by, for example, co-morbidity, polypharmacy and various geriatric syndromes. If necessary, a flexible attitude should be taken regarding the quality and quantity of the diet, taking into account the overall situation, quality of life, and malnutrition or the risk of it.

The BMI for adults over 65 can be higher than for younger adults, for example, 24–29 kg/m^2. This also leaves room for possible unintentional weight loss in special situations. As such, a slender older adult does not have a particular risk of malnutrition if their weight has remained stable since middle age.

Unintentional weight loss of weight is particularly harmful in connection with illnesses and physical inactivity, because it reduces the amount of muscle tissue and weakens nutritional status. If the patient's condition requires weight loss due to illnesses and procedures, this should take place under the guidance of an expert in nutritional care for older people and preferably slowly by means of a nutritionally adequate diet and physiotherapy or gym exercise to maintain muscle strength.

Older people often have less appetite and a weaker feeling of hunger than younger people Food-related sensations change as people age. The preference for sweet and salty foods increases, but the sense of sour and bitter tastes remains almost unchanged. The majority of food sensations are related to the sense of smell. Many diseases, and especially medicines, weaken the sense of taste. Appetite should be stimulated with all the senses. Older adults become full faster than young people. As a result, they need several meals of moderate size each day.

During ageing, body composition changes as the proportion of fat tissue increases and the amount of muscle decreases. This is linked to reduced functional capacity, sarcopenia and gerastenia, extended hospitalisation and recovery time, risk of falling and death. Ageing also changes the distribution of fat in the body. The amount of subcutaneous fat decreases and the fat around the midsection and internal organs increases.

Sarcopenia is underdiagnosed in older adults, and therefore the diagnosis, prevention and treatment of it should be a routine part of clinical patient work. The mechanism of cachexia is a complex metabolic and inflammatory physiological disorder that can be distinguished from sarcopenia and frailty by its causes (see Sarcopenia and cachexia p. 211).

Gerastenia (Frailty)

Gerastenia is a significant geriatric syndrome. It is associated with the deterioration of many organ systems and the decline of physiological reserves as a result, even the smallest stress factor can cause a breakdown in the body's balance. Gerastenia is often connected to comorbidity, sarcopenia and deficiencies in functional capacity. So far, there is no precise and generally accepted definition for frailty. The most commonly used methods are related to phenotype (phenotype criteria) or the frailty index.

Gerastenia is fairly common in the ageing population and based on phenotype criteria it can be diagnosed in approximately 10% of people over the age of 70. Although frailty phenotype and frailty index do not overlap, they are both linked to an increased

risk of death and the risk of further deterioration in functional capacity. As a result, early identification of these disorders is important in order to start preventive measures. As a clinical condition, gerastenia must be distinguished from cachexia (see Cachexia p. 212).

Although obesity during middle age is a predictor of gerastenia in the long term, important risk factors for older adults are low physical activity, deterioration in nutritional status and unintentional weight loss. Inadequate energy and protein intake contribute to explaining that connection. Studies have linked a diet that complies with the recommendations to a lower risk of frailty. Vitamin and mineral deficiencies, especially shortages of vitamins A, B_6, B_{12} and E, folate, zinc and selenium are common in older people and in connection with poor functional capacity. A weakened nutritional status, sarcopenia and frailty are often interconnected, but they may also occur independently. In combination, they can strongly accelerate the impairment of functional capacity. Gerastenia and obesity (sarcopenic obesity) may also occur simultaneously.

The diet of a frail patient should contain sufficient energy. Food containing hard fats should be restricted in favour of those containing soft fats. Protein intake should be 1.2–1.4 g/kg/day. Substantial consumption of vegetables has been proven beneficial, apparently because of the antioxidants they contain. Adequate intake of vitamin D should also be ensured for frail patients. Although nutritional care alone has not improved the prognosis for frailty, weight loss should be stopped. The best results are obtained through broad-based treatment that addresses nutrition as well as physical and cognitive training.

Memory disorders

People with memory disorders are often frail and vulnerable to malnutrition. Medication for memory disorders may also cause gastrointestinal symptoms that interfere with nutrition. Even a memory disorder that is just in the early stage must be identified, as it also involves a risk of neglecting meals for those living independently. Weight loss may be one of the first symptoms of a memory disorder. At the latest, the final stage of a memory disorder causes dementia – which is a fatal condition – and in that case nutrition should comply with the principles of palliative care. There is no evidence of enteral nutrition being beneficial in palliative care of memory disorders.

Oral health

In terms of nutrition, it is essential to safeguard the oral health of an older adult as well as possible. This requires proper dental monitoring and treatment, but self-care is also important. Assessing the condition of an older person's mouth is part of nutritional care, and the patient should be referred to oral health care if necessary. Oral infections and pain in the mouth area must be treated, and the condition and cleanliness of dentures must also be ensured (see Consideration of oral health in nutritional care p. 84).

Co-morbidity and polypharmacy

Co-morbidity refers to the simultaneous occurrence of two or more diseases (see Patients with multiple conditions p. 258). Co-morbidity is particularly difficult when it occurs in combination with gerastenia. Co-morbidity is the main underlying reason for polypharmacy, which as such is unavoidable when implemented appropriately. However, medicines and their combined effects may involve adverse effects that can prevent the realisation of adequate nutrition. Reviewing the list of medications and assessing their appropriateness and possible adverse effects on a regular basis are a key element when treating older people. Attention should be paid to the following adverse effects that may be caused by medicines and which can reduce eating and weaken nutritional status: dry mouth or a metallic taste in the mouth, changes in sense of taste and smell, stomach pain, constipation and diarrhoea.

Malnutrition in older adults

Malnutrition is common among older adults regardless of their living conditions. This is especially true after the age of 80, but it also occurs among younger people. The risk is particularly increased by the special characteristics of older people. Malnutrition can develop quickly when an older adult in good condition becomes sick. Risk groups include hip fracture and infection patients and other older people who are acutely ill. As a result, weight monitoring and screening for malnutrition risk are essential. Enhancing nutritional care for older people in order to prevent and treat malnutrition requires cooperation between medical science, nursing, nutrition therapy and food services.

Table 1 (p. 29), lists factors that expose a person to malnutrition. In addition to these, malnutrition among older people is increased by, for example,

- memory disorders
- reduced functional capacity and mobility
- rapid weight loss in connection with illness
- the need for assistance with eating
- oral and dental problems or poorly fitting dentures
- failing to eat snacks and insufficient amounts of food in relation to need
- periods of not eating and examination that requiring a long period of fasting
- a change in care facility and transport.

Implementation in the ward

The risk of malnutrition should be assessed using the method agreed in the organisation at the beginning of treatment, every 5–7 days in the ward, and according to an individual plan after that (see Nutritional status and screening for risk of malnutrition p. 38). Nutritional care planning takes into account nutritional status, appetite, possible factors that interfere with eating, the effects of pharmacotherapy as well as possible sarcopenia, gerastenia, memory disorders and cachexia. The nutrition for an older surgical patient must be planned with particular care.

The decrease in physical activity and muscle tissue will slightly reduce the need for energy in older adults. On the other hand, illness and rehabilitation often increase the energy needs of older people. The need for vitamins and minerals remains unchanged or even increases as people age, which is why food must be rich in nutrients. The need for protein is 1.2–1.4 g/kg (15 to 20 E%), and 1.5 g/kg during recovery. In order to ensure protein intake, the amount of protein served at lunch and dinner is at least 25 g/meal and a diverse variety of protein sources should also be included in breakfast, snack and evening snack. The night-time fast may not exceed 10 hours in a person aged 70 or over.

The feeling of thirst decreases as people age, which increases the susceptibility to disturbances in fluid balance. Solid food provides approximately 2 glasses of fluids, and 5–8 glasses of various drinks are needed in addition to the fluids obtained from food. Soft fat, and especially replacing hard fat with soft fat, is also important for an older person. The use of soft fat has several beneficial health effects (see Significance of nutrition p. 25). Sources of soft fat, such as oils and margarines, often provide the additional energy required in food.

- Specific characteristics (such as gerastenia, memory disorders, sarcopenia, medications, end-of-life stage) and the objectives of overall treatment must be taken into account when planning nutritional care. When these factors are taken into consideration, the basic diet and its general principles of health-promoting nutrition are also suitable for older people.
- The weight of an older person and their risk of malnutrition as well as food use should be monitored regularly in the hospital, every 5–7 days.
- Home-like meals activate and rehabilitate older people.
- The support of a family member is important when an older person becomes ill and during hospital treatment.
- Independent meals should be actively maintained by providing encouragement and guidance and by using aids, while simultaneously ensuring the realisation of sufficient nutrition.
- If necessary, the nutritional care for people with malnutrition or at risk of malnutrition should be enhanced using oral nutritional supplements.
- Vitamin D (10–20 µg/day depending on the diet) and, if necessary, calcium supplements should be ensured.
- Older people in hospital and institutional care should be served food and beverages that are meaningful and correspond to their ability to bite and swallow.

Nutrition counselling

Individual counselling provided by a nutritionist is particularly needed by patients who have malnutrition or are at risk of it. Older people also need counselling from a nutritionist when they have diseases that require compliance with conflicting special diets.

SOURCES p. 365

10

PROCUREMENT AND TENDERING OF FOOD SERVICES

- A detailed service description of how food services for the target group will be implemented in a responsible, quality and client-oriented manner will be compiled for the purposes of procuring food services.
- The objectives of sustainable development, overall responsibility and operational quality are always taken into account in the tendering process for food services.
- The food services agreement includes entries regarding compliance with the nutritional care guidelines, the methods and indicators used to assess implementation and monitor quality, collection and processing of feedback from diner clients and personnel, and reporting on operations.
- The food services agreement defines the cooperation between the purchaser, service provider and other actors. The goal is to establish a strong partnership with the aim of developing responsibility and nutritional care in the service entity by introducing new operating models and ensuring the competence of the personnel.
- In addition to the requirements for promoting responsibility and sustainability in food production, the nutritional quality criteria for meal components and the Heart Symbol criteria for products are set as minimum requirements in food procurement.

When procuring food services, the aim must be responsible and high-quality food services that realise the patient's rights to receive tasty food that meets the nutritional care guidelines, suits their individual situation, and supports the implementation of nutritional care as part of overall treatment.

Public food services can be implemented as in-house production or outsourced to a private operator. Food services may be part of another service agreement, in which case the content of the food services is also specified in the invitation to tender when, for example, a care, nursing home, residential care or rehabilitation service is put out to tender. Meal services can be put out to tender as one extensive entity or in parts, for example, according to client group or location.

The objectives of sustainable development, overall responsibility and operational quality as well as the purchaser's strategic targets are always taken into account in the tendering process for food services. Well-planned and implemented food services contribute to achieving the qualitative, functional and financial objectives of social and health services. The UN's Agenda2030[12] Sustainable Development Goals – to improve nutrition and end hunger, and to ensure healthy lives and promote well-being for all people at all ages – are best furthered by means of offering health-promoting food that complies with nutrition recommendations, food waste management, and effectively preventing malnutrition.

The food services operating environment should be specified in as much detail as possible for the procurement of food services for a hospital (care, nursing home or rehabilitation unit). The service description attached to the invitation to tender includes specification of the client target group and service needs, the meals served and meal times, ready products, production facilities and methods, a nutrition manual or similar documents describing the implementation of food services and nutritional care, and cooperation between the wards and food services. Information on food procurements, diets and their implementation, menus, recipes and nutrient content calculation and monitoring is required for food production. In addition, information is needed regarding who determines diet needs, how orders are placed, and how responsibility is divided between the purchaser's personnel and food services. An extremely important element in the tendering process for food services is to ensure that the criteria for

12 Agenda 2030. UN Sustainable Development Goals. https://um.fi/agenda-2030-sustainable-development-goals

service provision promised in the tender are implemented in practice. Information is also required on feedback practices and operational reporting as well as the handling of shortcomings in quality and the related sanctions.

In addition to the basic diet and vegetarian diets included in it, the food services agreement specifies all the texture-modified diets and diets required for nutritional care of diseases needed in the unit placing the order (see List of diets, Appendix 18 p. 317–319). Individual diets, including diets based on beliefs, must be described in terms of how they will be implemented and how their quality and safety will be ensured. The purchaser must have the expertise needed to assess the nutritional content and quality requirements and preparation of all the diets being implemented. Competence requirements can also be set for the food services personnel and a continuing education plan can be requested. During the food services procurement process and when tendering concerns food for patients in need of nutritional care, the competitive bidding process must also include the nutritional care perspective provided by a licensed nutritionist and a nutrition specialist from food services.

Knowledge of the market situation is very important when setting requirements related to the implementation of food services. For small operators, it is essential to ensure whether the operator has the opportunity and competence to implement the diets needed when treating diseases or how the operator will acquire the necessary competence (for example, regarding the preparation of nutrient content calculations and their assessment as well as product development and productisation).

An extensive guide on food services procurement and tendering has been published[13] It also includes instructions and examples of activities and documents for procuring food services in the social and health services sector. The guide defines functional and responsible food services and how they should be organised in different operating environments. It is intended for decision-makers, organisers of public food services and those responsible for food services and their procurement. The guide implements the objective of the Finland's National Public Procurement Strategy regarding sustainable and responsible food services and food procurements. It provides guidance on how to specify the quality of food and food items offered in food services, the type of requirements set for the service and how quality is monitored.

Tendering for food items

The food services provider arranges tendering and procures the food items they need. The Act on Public Procurement and Concession Contracts must be observed when the state or a municipality arranges tendering for foodstuffs. The act is not binding to private service providers. When arranging tendering for ingredients, quality that complies with the regulations and criteria related to food safety, animal welfare and health, and environmental and social impacts can always be required. Nutritional quality must

13 Ministry of Agriculture and Forestry. Guide for Responsible Procurement of Food, 2021. (In English) http://urn.fi/URN:ISBN:978-952-366-379-4

always be taken into account as an absolute minimum quality requirement in tendering for food. When setting nutritional quality requirements for products, meal component-specific (see Table 14 a–c p. 93–95) or Heart Symbol product criteria requirements are used[14]. This ensures that the food served meets the nutritional content requirements outlined in the nutrition recommendations.

In addition to tendering for food items, the hospital and the care and nursing service unit must also arrange tendering for the oral nutritional supplements used in patient meals and served in addition to meals. This applies to 24-hour care, but not to sheltered housing units.

The Ministry of Agriculture and Forestry[15] has prepared a guide for responsible food procurement. The guide includes examples of how to set quality requirements that promote responsibility for food procurements as part of the food services procurement process. It also outlines criteria for tendering that increase responsibility for different product groups on two levels: standard level and forerunner level criteria. The criteria that correspond to the organisation's procurement strategy and guidelines and otherwise support the quality and responsibility targets that have been set can be selected for the tendering process.

14 Heart Symbol system. Product-specific criteria. https://www.sydanmerkki.fi/en/

15 Motiva Oy. Guide for Responsible Procurement of Food – Recommendations for requirements and comparison criteria. 2020. (In Finnish) https://www.motiva.fi/ajankohtaista/julkaisut/opas_vastuullisiin_elintarvikehankintoihin_-_suosituksia_vaatimuksiksi_ja_vertailukriteereiksi.15370.shtml

11

REGIONAL AND NATIONAL MONITORING AND SUPERVISION OF NUTRITIONAL CARE

- Patient data generated from nutritional care are recorded in the patient information system, using jointly agreed structured headings, code sets and classifications whenever possible. Consistent and comprehensive recording produces register data for use in regional and national monitoring, and in the evaluation, development and monitoring of operations. The code set should be supplemented with indicators for implementation of nutritional care.
- There is little information available regarding the implementation of nutritional care. Information on evaluating the malnutrition risk and nutritional status of patients and implementation of nutritional care must be included as part of regional and national social and health care data collection and monitoring (incl. Register data collected in the Kanta system, Sotkanet[16], the RAI system for assessing service needs[17] and quality systems[18]).

16 Finnish Institute for Health and Welfare (THL). Sotkanet. Statistical information on welfare and health in Finland. https://sotkanet.fi/sotkanet/en/index?

17 Finnish Institute for Health and Welfare (THL). RAI knowledge-based management (in Finnish). https://thl.fi/fi/web/ikaantyminen/palvelutarpeiden-arviointi-rai-jarjestelmalla/rai-tiedolla-johtaminen

18 Finnish Institute for Health and Welfare (THL). Quality registers (in Finnish). https://thl.fi/fi/web/sote-palvelujen-johtaminen/arviointi-ja-seuranta/tietopohja-ja-tyokalut/terveydenhuollon-kansalliset-laaturekisterit

- The RAI assessment should be supplemented with screening for the risk of malnutrition and assessment of the patient's age-related nutritional status. Monitoring of RAI assessment data provides information on the effectiveness of nutritional care at the client level and on the quality of nutritional care at the unit and organisation level.
- Management-related nutrition indicators can be used as a tool for monitoring the quality of nutrition management and nutritional care in social and health care organisations (STESO nutrition indicators, 2021[19]). Implementation of these indicators should be promoted.
- Social and health care institutions must use self-monitoring to ensure the continuous self-assessment and monitoring of their operations, such as quality monitoring and quality control visits and internal audits.

National monitoring data on the health and nutrition of the population

State research institutes are responsible for monitoring the nutrition of the population and different age groups at the national level. The Finnish Institute for Health and Welfare (THL) collects information on the well-being, health, functional capacity, morbidity and lifestyles of the population and different age groups, as well as on use of health and social services from various registers and research sources in the Sotkanet Indicator Bank1. Sotkanet also provides information on the incidence of diseases in which nutritional care plays a key role in terms of treatment (for example, obesity, diabetes and cardiovascular diseases). Information regarding adult food use is only collected in Sotkanet for the use of vegetables. In order to assess nutrition at the population level, more extensive monitoring data on diet quality would be needed for all age groups, including children and young people. More extensive information is currently available in the reports and publications from various health and well-being surveys (Healthy Finland Survey and the National FinDiet, FinHealth and FinSote surveys performed earlier) and research projects, but their use to support national, comprehensive and continuous monitoring is more difficult than using uniform databases.

Monitoring of nutritional care and food services

In order to assess the effectiveness of treatment, monitoring data is needed on patients' nutrition (food use and nutritional status), the implementation of screening for malnutrition risk and its prevalence, as well as the implementation of nutritional care. There is no such nutritional care monitoring data that would make it possible to assess how recommendations issued for nutritional care are implemented in practice.

19 STESO ry. Standards for nutritional health promotion. 2021. (In Finnish) https://asiakas.kotisivukone.com/files/stesotesti.kotisivukone.com/Rav.terv.standardit.suomi.lokakuu21.pdf

With the exception of isolated reports on patient meals in long-term care, there is also no national information on the energy content and nutritional quality of food served at hospitals. Monitoring data is needed on the basic diets offered and on the diets used when treating diseases and their use in nutritional care.

Standards and indicators for nutritional care

The Association of Health Promoting Hospitals and Organizations in Finland (STESO ry) has developed standards for nutritional health promotion in healthcare and social welfare in Finland[20]. In that document, "nutritional health promotion" means the promotion of well-being and health through nutritional means as well as nutritional care and guidance. The structure and main headings of the standards are based on international health promotion standards (HPH 2004[21] and the standards published by the International Network of Health Promoting Hospitals and Health Services 2020[22]). When repeated at regular intervals, the STESO nutritional health promotion standards are suitable as a tool for health care organisations and wellbeing services counties to monitor operational development. In particular, standards 1.1–1.6 are suitable as a tool for the organisation's self-assessment and knowledge-based management related to nutritional health quality (see footnote 20). These indicators should be further developed for national use as part of the quality monitoring systems of hospitals and organisations.

The info box (see p. 281) contains a list of proposed indicators for implementation of nutritional care at the hospital or organisation level. The indicators are based on the STESO standards. They have been supplemented by the recommendations from this document (for example, the length of night-time fast).

20 STESO ry. Standards for nutritional health promotion. 2021. (In Finnish) https://www.steso.fi/ravitsemusterveyden-edistaminen

21 World Health Organization. Regional Office for Europe. Standards for health promotion in hospitals. 2004. Copenhagen: WHO Regional Office for Europe. https://apps.who.int/iris/handle/10665/107549

22 The International Network of Health Promoting Hospitals and Health Services. The 2020 Standards for Health Promoting Hospitals and Health Services. https://www.hphnet.org/wp-content/uploads/2020/12/2020-HPH-Standards.pdf

Indicators for implementation of nutritional care

- weight, height and BMI: number of measurements conducted at least every six months on the patients
- malnutrition risk assessment (NRS 2002, STRONGkids, MNA): number of assessments conducted at least every six months on the patients and distribution of results in different risk categories
- the number of enriched diets over a specified period (e.g. every six months) in comparison to the number of patients at risk of malnutrition during the same period.
- the amount (and types) of use of oral nutritional supplements over a given period (e.g. every six months) compared to the number of patients at risk of malnutrition during the same period.
- client feedback (requested from patients in general client feedback): "Were your food-related requests taken into account in the hospital?"
- structured recording of nutrition counselling is in use (YES/NO)
- engths of night-time fast does not exceed 10–11 hours (YES/NO)
- Recording of key nutrition-related diagnoses:
  - Malnutrition (YES/NO)
  - Obesity (YES/NO)
- the hospital/organisation has structured instructions for how to proceed when the risk of malnutrition is diagnosed (how treatment is implemented in different malnutrition risk categories) (YES/NO)
- the results of screening for malnutrition risk are used when monitoring the quality of treatment (YES /NO)

Uniform recording of the nutritional care and counselling

Information on nutrition-related appointments, diagnoses and treatment collected in health care patient and client registers is needed in order to monitor the implementation of nutritional care and counselling. However, useful information can only be obtained when, in addition to the above, commonly agreed national procedure codes and classifications are used to record nutritional care (see Monitoring nutritional care and recording information p. 69 and Appendix 5 p. 291, Appendix 6 p. 292, Appendix 8 p. 296 and Appendix 13 p. 304–305). Register data is needed for knowledge-based management and the development of work inside the organisation, both regionally and nationally. All professional groups whose work involves nutrition counselling and care should be strongly encouraged to record information on that nutritional care and counselling. Additional training is required to harmonise recording practices.

The shortcoming in terms of national monitoring is the fact that nutritional care has no specific indicators of its own. Only the nutrition counselling procedure codes (OAB Codes) are in use. As a result, some nutritional care is not registered and no impact data is collected on it (for example, whether a nutritional care plan has been prepared and whether it has been implemented). When monitoring nutritional care, it is particularly important to record the malnutrition risk assessment result (NRS 2002, STRONGkids, MNA) as well as the malnutrition diagnosis and implementation of nutritional care in the patient information. On a national basis, it must be ensured that information on the risk of malnutrition is collected in the registers. This information is needed for planning resource use and monitoring the prevalence of malnutrition risk and the effectiveness of nutritional care.

RAI Service Need assessment and screening of malnutrition risk

The Act on Supporting the Functional Capacity of the Older Population and on Social and Health Services for Older Persons[23] requires systematic use of the Resident Assessment Instrument (RAI) when assessing the service needs and functional capacity of older adults[24]. It is used in 24-hour care and home care for older adults and increasingly also in other social and health care service need assessments (including acute hospital care and rehabilitation and intellectual disability work) when people are applying for services. The assessment questions in the InterRAI instruments cover the key areas related to a patient's health and care. The advantage of the RAI assessment is the fact that the individual data obtained from it can also be utilised when the patient moves from one service environment to another. The multi-purpose InterRAI tools are also suitable for monitoring if assessments are performed regularly.

The RAI system produces nationally accumulated data on topics such as unintentional weight loss and underweight in older people, the need for assistance in preparing and eating meals, inadequate meals and nutrition-related problems (such as dehydration, chewing problems and oral pain).

From the nutritional care perspective, RAI provides a lot of information about the client's living conditions, meals and the factors affecting it. However, it is necessary to complement the RAI assessment with screening for malnutrition risk and a more detailed assessment of nutritional status (NRS 2002/MNA method). In the case of patients under 65 years of age, a method suitable for the age group (NRS 2002 method for other adult population and the STRONGkids method for children) must be used instead of an MNA assessment.

The RAI monitoring indicators are updated every six months at the national level and service providers have access to current data. This means that the RAI system provides good possibilities for knowledge-based service management for older people,

23 Act on Supporting the Functional Capacity of the Older Population and on Social and Health Services for Older Persons (565/2020, Section 15a). https://www.finlex.fi/fi/laki/ajantasa/2012/20120980

24 THL. RAI tools (in Finnish): https://thl.fi/fi/web/ikaantyminen/palvelutarpeiden-arviointi-rai-jarjestelmalla/tietoa-rai-jarjestelmasta/rai-valineisto

quality monitoring and development in organisations, wellbeing services counties and nationally.

Monitoring and supervising the operations of food services providers

A service agreement and service description are compiled for patient meals and other activities related to meal services when they are implemented as in-house operations. In addition, a food services and nutrition manual is usually prepared for the purpose of steering operations. In the case of competitively tendered outsourced services, the activities are agreed upon in the service agreement and the detailed service description attached to it. The purchaser of the services actively monitors and supervises the food services using common indicators and intervenes in shortcomings. Service providers are required to self-monitor the quality of the service and to report regularly already during the initial phase of the service contract. The purchaser of the service may also authorise the service organiser (service integrator) to handle procurement and tendering of meal services. In this case, the service organiser is responsible for tendering and quality monitoring of the meal services and reporting on the entity to the purchaser

In food services, self-monitoring refers in general to the self-monitoring of food premises required by food legislation. In this document, self-monitoring of food services refers to continuous self-assessment and monitoring of functions and related measures, such as quality monitoring, quality control visits and internal audits. In addition to self-monitoring of the quality of the service performed by the service provider, the quality of the activities is monitored by the purchaser or a party authorised by the purchaser. Quality monitoring using common criteria can also be carried out in cooperation between the purchaser and the service provider as part of the contract monitoring process.

The service provider is required to provide instructions for its own operations and descriptions of activities specific to each service point. In addition to the tendered service, the units should also have more detailed information on implementation of the services, such as a list of basic diets and the diets needed when treating diseases, the method of implementation and nutrient content calculations, the diet development plan, meal transport schedule and instructions for ordering meals and products. The basic matters for observation are food temperatures and freshness as well as hygiene related to work, equipment and facilities. In addition, the instructions issued by the Finnish Food Authority concerning the safe use of food in sensitive consumer groups, such as pregnant and breastfeeding women, young children, older adults and persons with weakened resistance[25].

A organisation-specific, multi-professional food service/nutrition working group that includes representation from all contracting partners should be established for the purposes of cooperation and monitoring. It is also a good idea to appoint a client representative to the working group, for example, an expert by experience who is

25 Finnish Food Authority. General instructions on safe use of foodstuffs. https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/

familiar with the organisation. The working group's task is to monitor, assess and develop patient meals, for example, by utilising information obtained during quality visits and organoleptic evaluation. The cooperation should also take the needs and implementation of nutritional care into account. The working group reports on its activities, observations and development needs to the organisation's management.

Official supervision

The Act on Organising Healthcare and Social Welfare Services emphasises the importance of self-monitoring in addition to official supervision (612/2021, sections 40–42). Both wellbeing services counties and private service providers must prepare a self-monitoring programme and plans as well as patient safety plans. It is essential to describe how the implementation, safety, quality and equality of services are monitored and how any identified shortcomings will be corrected. Under their responsibility for organisation, wellbeing counties must also continuously guide and monitor service providers and their subcontractors regarding service production. With regard to official supervision, the Ministry of Social Affairs and Health is responsible for general steering and supervision of the activities. The Regional State Administrative Agencies, on the other hand, supervise the legality of services in their respective operating areas and issue instructions related to supervision. In addition, the National Supervisory Authority for Welfare and Health (Valvira) steers the operations of the Regional State Administrative Agencies with regard to implementation, coordination and harmonisation of supervision and related steering and also provides guidance related to supervision, for example, in fundamentally important and broad-ranging matters.

The supervisory authorities should primarily supervise social and health services by providing the necessary guidance and advice in the provision of services, monitoring the development of activities in cooperation with the service provider as well as promoting and ensuring self-monitoring. However, the supervisory authority must intervene as quickly and efficiently as possible in the activities of the operating unit if self-monitoring does not work. The supervisory authority has a wide range of methods at its disposal, which range from focusing attention on a problem to closure of the operating unit.

The nutrition-related indicators described earlier in this section and the recommendations presented in this document can be used to assess the implementation of patient meals and nutritional care in both self-monitoring and official supervision. Public monitoring of institutions includes the following topics: meal arrangements, nutritional quality of the food served, diets used for treating diseases, timing of meals, client feedback and client participation, assessment of malnutrition risk and nutritional status in patients, and monitoring and evaluating the implementation of nutritional care.

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APPENDIX 1. Nutritional Risk Screening (NRS 2002)

APPENDIX 1. Nutritional Risk Screening (NRS 2002)[1]

Name of patient	Date	Height (cm)
Personal identity code	**Current weight kg (weighed)**	**BMI kg/m^2**

Initial screening

Is the patient's BMI less than 20.5?	**Yes** ☐	**No** ☐
Has the patient unintentionally lost weight within the past 3 months?	**Yes** ☐	**No** ☐
Has the patient eaten less than usual during the previous week?	**Yes** ☐	**No** ☐
Is the patient being treated for a serious illness?	**Yes** ☐	**No** ☐

If the answer to **any question** is **Yes**, perform the final screening.

If the answer is **No** to **all questions**, the patient is re-screened at weekly intervals.
If the patient is scheduled for a major operation, a preventive nutritional care plan is prepared to avoid the associated risk of malnutrition.
A score of 0 is marked in the treatment table.

Final screening

Impaired nutritional status Select the one option that best describes the patient's condition.	**Score**	**Impact of disease on nutritional requirements** Select the one option that best describes the patient's condition.	**Score**
Normal • No weight loss, good appetite	**0**	**Nurtitional requirement is no greater than normal.**	**0**
Slightly impaired • Unintentional weight loss >5%/3 months **or** • Food intake during the previous week has been 50–75% of normal requirement.	**1**	**Slight increase in nutritional requirement** Hip fracture[a], chronic disease: liver cirrhosis[a], COPD[a] Dialysis, diabetes, cancer	**1**
Moderately impaired • Weight loss >5%/2 months **or** • BMI 18.5–20.5 + impaired general condition **or** • Food intake during the previous week has been 25–50% of normal requirement.	**2**	**Moderate increase in nutritional requirement** Major abdominal surgery[a], stroke[a] Severe pneumonia, haematologic malignancy	**2**
Significantly impaired • Weight loss >5%/1 month (>15%/3 months) **or** • BMI >18.5 + impaired general condition **or** • Food intake during the previous week has been 0–25% of normal requirement.	**3**	**Significant increase in nutritional requirement** Head injury[a], bone marrow transplant[a] Intensive care patient (APACHE >10)	**3**
Age The patient is 70 years or older.	**1**	**Add the points obtained from nutritional status, impact of disease and age.**	

Interpreting the result

≥ 3 points: The patient is at risk of malnutrition and a nutritional care plan should be prepared for them.

< 3 points: The patient has no risk of malnutrition. Re-screen weekly.
For example, if the patient is scheduled for major surgery, a nutritional care plan should be prepared to prevent malnutrition.

– Transfer the score to the treatment table in the medical record.

1 Kondrup J et al. Clinical Nutrition 2003; 22:321–336
a Classified on the basis of research evidence.

Form template: HUS

ELECTRONIC FORM are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

APPENDIX 2. Assessing nutrient intake in the NRS 2002 method

Amount of food eaten/actual food intake during the preceding week	Patient's* food intake compared to normal	Implementation of enteral or parenteral nutrition	Score in the NRS 2002 method
Amount offered or no changes in home meals	Eats almost all the food served in the ward, or there have been no changes in the amount of food at home. Appetite is usually good and there are no symptoms that interfere with eating or they are very mild.	Enteral or parenteral nutrition is implemented as planned, and nutrient intake corresponds to need.	**0**
At least half	Eats at least half of the food served. Symptoms that interfere with eating (e.g. lack of appetite, feeling of fullness or nausea) are moderate.	Enteral and/or parenteral nutrition does not meet the need or ¼–½ of the planned enteral and/or parenteral nutrition is not administered. Implementation of enteral nutrition has become moderately difficult (e.g. motility problems, nausea, pain) or stronger parenteral nutrition products cannot be used due to delivery through a peripheral vein.	**1**
Less than half	Eats less than half of daily meals or portions. Symptoms that interfere with eating are severe.	Enteral and/or parenteral nutrition accounts for less than half of nutritional requirement. The patient has difficult tolerance problems.	**2**
Very little (less than 25%)	Eats almost nothing. Meals are skipped or the portion eaten at one time is very small. The food may consist mainly of fluids. The symptoms almost completely prevent eating (e.g. severe nausea, vomiting, high levels of diarrhoea, pain and a tumour that prevents swallowing, or inability to swallow, anorexia nervosa, psychological factors).	No appropriate nutrition delivery route. Only clear liquids or very small amounts of nutritional solution (less than 500 ml/day) are administered intravenously.	**3**

* The patient's opinion is taken into account.

APPENDIX 3. Assessing disease in the NRS 2002 method

0 points:
The disease does not increase the normal protein or energy requirement. Eating disorder, starvation due to social, economic or psychological reasons without any other disease or acute condition.

For example:
- metabolic syndrome
- hypercholesterolaemia
- asthma that is stable.

1 point:
The disease slightly increases the normal protein or energy requirement. **The patient is out of bed or otherwise active for most of the day**. The patient may be in ward care because of complications related to a chronic disease. The increased protein requirement can be covered with a basic diet and oral nutritional supplements.

For example:
- stage II pressure ulcer, chronic wound of less than 25 cm^2
- dialysis treatment
- local cancer
- active inflammatory rheumatic disease
- hip fracture, femur fracture
- chronic pulmonary disease, such as severe COPD
- serious cirrhosis of the liver
- minor surgery scheduled or recently performed
- laparoscopic removal of gallbladder or appendix
- Parkinson's disease, Multiple sclerosis (MS), a motor neuron disease such as ALS.

2 points:
The disease increases the protein or energy requirement moderately from the normal level (moderate inflammation), for example, following major abdominal surgery. The patient is confined to bed and spends most of the day resting in a ward or at home. The increased protein requirement can be covered with an enriched diet and oral nutritional supplements. Enteral or parenteral nutrition is also needed in many cases.

For example:
- major abdominal surgery
- extensive chronic wound
- multiple fractures
- severe pulmonary failure
- multiple severe chronic diseases
- multiple disabilities
- exacerbation phase of a chronic disease requiring inpatient care
- recent or scheduled major surgery, repeated surgeries
- metastatic cancer, haematological cancer
- severe intestinal inflammatory disorder
- fistula with heavy discharge
- recent stroke
- severe infection
- severe pneumonia requiring inpatient care
- burn injury 20–30%
- stage III–IV pressure ulcer, chronic wound of at least 25 cm^2
- patient requiring respiratory support
- severe spasticity and compulsive movements.

3 points:
The disease significantly increases the normal protein or energy requirement (severe inflammation). The patient is in intensive care or under enhanced monitoring. The protein requirement is high due to the accelerated nitrogen loss and inactivity. Sufficient intake cannot be ensured, but muscle loss can be slowed with good nutritional care.

For example:
- intensive care (>48 h)
- stem cell transplant
- burn injury >30%
- multiple disabilities
- extensive intestinal resection
- major surgery requiring intensive care
- head injury
- pneumonia requiring intensive care.

APPENDIX 4 a. MNA-test for identification of nutritional status (Mini Nutritional Assessment MNA®), short form

Mini Nutritional Assessment

MNA®

Nestlé Nutrition Institute

Last name: First name:

Sex: Age: Weight, kg: Height, cm: Date:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake ☐

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss ☐

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out ☐

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes 2 = no ☐

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems ☐

F1 Body Mass Index (BMI) (weight in kg) / (height in m)² ☐
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater ☐

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

F2 Calf circumference (CC) in cm
0 = CC less than 31
3 = CC 31 or greater ☐

Screening score ☐☐
(max. 14 points)

12-14 points: ☐ Normal nutritional status
8-11 points: ☐ At risk of malnutrition
0-7 points: ☐ Malnourished

Save Print Reset

Ref. Vellas B, Villars H, Abellan G, et al. *Overview of the MNA® - Its History and Challenges.* J Nutr Health Aging 2006;10:456-465.
Rubenstein LZ, Harker JO, Salva A, Guigoz Y, Vellas B. *Screening for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF).* J. Geront 2001;56A: M366-377.
Guigoz Y. *The Mini-Nutritional Assessment (MNA®) Review of the Literature - What does it tell us?* J Nutr Health Aging 2006; 10:466-487.
Kaiser MJ, Bauer JM, Ramsch C, et al. *Validation of the Mini Nutritional Assessment Short-Form (MNA®-SF): A practical tool for identification of nutritional status.* J Nutr Health Aging 2009; 13:782-788.

For more information: www.mna-elderly.com
For information on user rights, see https://www.mna-elderly.com/mna-forms

APPENDIX 4 b. MNA-test for identification of nutritional status (Mini Nutritional Assessment MNA®), full form

Mini Nutritional Assessment MNA®

Nestlé NutritionInstitute

Last name: First name:

Sex: Age: Weight, kg: Height, cm: Date:

Complete the screen by filling in the boxes with the appropriate numbers.
Add the numbers for the screen. If score is 11 or less, continue with the assessment to gain a Malnutrition Indicator Score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake ☐

B Weight loss during the last 3 months
0 = weight loss greater than 3kg (6.6lbs)
1 = does not know
2 = weight loss between 1 and 3kg (2.2 and 6.6 lbs)
3 = no weight loss ☐

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out ☐

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes 2 = no ☐

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems ☐

F Body Mass Index (BMI) = weight in kg / (height in m)² ☐
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater ☐

Screening score (subtotal max. 14 points) ☐☐
12-14 points: ☐ Normal nutritional status
8-11 points: ☐ At risk of malnutrition
0-7 points: ☐ Malnourished
For a more in-depth assessment, continue with questions G-R

Assessment

G Lives independently (not in nursing home or hospital)
1 = yes 0 = no ☐

H Takes more than 3 prescription drugs per day
0 = yes 1 = no ☐

I Pressure sores or skin ulcers
0 = yes 1 = no ☐

J How many full meals does the patient eat daily?
0 = 1 meal
1 = 2 meals
2 = 3 meals ☐

K Selected consumption markers for protein intake
- At least one serving of dairy products (milk, cheese, yoghurt) per day yes ☐ no ☐
- Two or more servings of legumes or eggs per week yes ☐ no ☐
- Meat, fish or poultry every day yes ☐ no ☐

0.0 = if 0 or 1 yes
0.5 = if 2 yes
1.0 = if 3 yes ☐☐

L Consumes two or more servings of fruit or vegetables per day?
0 = no 1 = yes ☐

M How much fluid (water, juice, coffee, tea, milk...) is consumed per day?
0.0 = less than 3 cups
0.5 = 3 to 5 cups
1.0 = more than 5 cups ☐☐

N Mode of feeding
0 = unable to eat without assistance
1 = self-fed with some difficulty
2 = self-fed without any problem ☐

O Self view of nutritional status
0 = views self as being malnourished
1 = is uncertain of nutritional state
2 = views self as having no nutritional problem ☐

P In comparison with other people of the same age, how does the patient consider his / her health status?
0.0 = not as good
0.5 = does not know
1.0 = as good
2.0 = better ☐☐

Q Mid-arm circumference (MAC) in cm
0.0 = MAC less than 21
0.5 = MAC 21 to 22
1.0 = MAC greater than 22 ☐☐

R Calf circumference (CC) in cm
0 = CC less than 31
1 = CC 31 or greater ☐

Assessment (max. 16 points) ☐☐☐
Screening score ☐☐☐
Total Assessment (max. 30 points) ☐☐☐

Malnutrition Indicator Score

24 to 30 points ☐	Normal nutritional status
17 to 23.5 points ☐	At risk of malnutrition
Less than 17 points ☐	Malnourished

Save Print Reset

References
1. Vellas B, Villars H, Abellan G, *et al.* Overview of the MNA® - Its History and Challenges. *J Nutr Health Aging.* 2006; 10:456-465.
2. Rubenstein LZ, Harker JO, Salva A, Guigoz Y, Vellas B. Screening for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF). *J. Geront.* 2001; 56A: M366-377
3. Guigoz Y. The Mini-Nutritional Assessment (MNA®) Review of the Literature - What does it tell us? *J Nutr Health Aging.* 2006; 10:466-487.

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APPENDIX 5. Diagnoses related to malnutrition

THL-ICD-10 International Classification of Diseases codes for malnutrition and abnormal weight loss

Malnutrition E40–E46	
Severe protein malnutrition Severe malnutrition with oedema with dyspigmentation of skin and hair	E40
Severe malnutrition with marasmus	E41
Severe protein-energy malnutrition intermediate form of malnutrition with signs of both kwashiorkor and marasmus	E42
Unspecified severe protein-energy malnutrition	E43
Moderate protein-energy malnutrition	E44.0
Mild protein-energy malnutrition	E44.1
Retarded development following protein-energy malnutrition	E45
Unspecified protein-energy malnutrition	E46
Abnormal weight loss	**R63.4**

APPENDIX 6. Diagnosing malnutrition in adults using the GLIM criteria

The criteria consist of five key factors affecting nutritional status: weight loss, low BMI, reduced muscle mass, reduced food intake and reduced absorption. In addition, the disease-associated inflammatory response is assessed (Table). A malnutrition diagnosis can be made if one phenotypic (symptom) criterion and one aetiological criterion are met. Malnutrition can be graded as moderate or severe depending on the degree of weight loss and muscle loss (Jensen G, 2019, Cederholm T, 2019).

Table. GLIM criteria for malnutrition

Phenotype criteria		
1. Weight loss	**2. BMI, kg/m²**	**3. Muscle mass***
>5% within the past 6 months OR	<20 under the age of 70	Reduced
>10% beyond 6 months	<22 over 70 years old	
Etiologic criteria		
4. Reduced food intake		**5. Inflammation**
<50% of estimated requirement during 1 week OR		Acute disease/injury or chronic disease-related (CRP ≥5)
any reduction during two weeks OR		
any chronic gastrointestinal condition that adversely impacts food assimilation or absorption		

The patient has malnutrition if least one phenotypic criterion (sections 1–3) and one etiologic criterion (sections 4–5) are met.
The severity of malnutrition is classified according to sections 6 and 7.

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Severity of malnutrition		
6. Moderate malnutrition		
Weight loss	**BMI**	**Muscle mass***
5–10% within six months, or	<20 kg/m^2 under the age of 70	Mild to moderate muscle loss
10–20% beyond six months	<22 kg/m^2 over 70 years old	
7. Severe malnutrition		
Weight loss	**BMI**	**Muscle mass***
>10% within the past 6 months OR	<18.5 kg/m^2 under the age of 70	Severe muscle loss
>20% beyond 6 months	<20 kg/m^2 over 70 years old	

* – males ASMI <7,0 kg/m^2 (DXA or BIA), females <5,4 kg/m^2 (DXA) or <5,7 kg/m^2 (BIA)
- FFMI males <17 kg/m^2, females <15 kg/m^2
- ALM/weight males <25,7%, females <19,4%
- calf circumference males <33 cm, females <32 cm

ASMI = appendicular skeletal muscle index
DXA = dual-energy X-ray absorptiometry
BIA = bioelectrical impedance analysis
FFMI = fat-free mass index
ALM = appendicular lean mass

Sources:

Cederholm T, Jensen GL, Correia MITD et al. GLIM criteria for the diagnosis of malnutrition – A consensus report from the global clinical nutrition community. Journal of Cachexia, Sarcopenia and Muscle 2019; 10:207–17, Clin Nutr 2019; 38:1–9

Jensen G, Cederholm T, Correia MITD et al. GLIM Criteria for the Diagnosis of Malnutrition: A Consensus Report from the Global Clinical Nutrition Community. JPEN 2019; 43:32–40

APPENDIX 7. STRONGkids: Screening tool for malnutrition risk in children

MALNUTRITION RISK SCREENING: in the arrival discussion and once a week for children aged 1 month–18 years	Response → points	
1) Does the patient have poor nutritional status based on a subjective clinical assessment (loss of subcutaneous fat or reduced muscle mass or hollow face)?	**No**	**Yes → 1**
2) Is there weight loss (all ages) or no increase in weight (infants <1 year) during the last few week or months?	**No**	**Yes → 1**
3) Does the patient have one of the following? • Excessive diarrhoea (≥5 times/day) or vomiting (>3 times/ day) • Reduced food intake during the past few days • Pre-existing nutritional care • Inadequate nutritional intake because of pain	**No**	**Yes → 1**
4) Is there an underlying illness with risk for malnutrition (see list) or expected major surgery? • Metabolic disease • Bronchopulmonary dysplasia (<2 years) • Prematurity (corrected age <6 months) • Infectious disease • Coeliac disease • Cystic fibrosis • Anorexia nervosa • Muscle disease • Short bowel syndrome • Liver disease, chronic • Kidney disease, chronic • Burn • Pancreatitis • Expected major surgery • Cardiac disease, chronic • Cancer • Trauma • Inflammatory bowel disease • Intellectual disability • Other (classified by doctor)	**No**	**Yes → 2**

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RISK OF MALNUTRITION AND NEED FOR NUTRITIONAL CARE (STRONGkids)		
Score	**Risk**	**Nutritional care and follow-up**
4–5 points:	**High risk**	• Update the growth curve (weight and height) • Ask a doctor and nutritionist to perform a comprehensive assessment of nutritional status, prepare personal nutritional care instructions and a monitoring plan • Assess the malnutrition risk weekly
1–3 points:	**Moderate risk**	• Update the growth curve (weight and height) • Consider the need for enhanced nutritional care • Assess the malnutrition risk weekly
0 points:	**Low risk**	• Enhanced nutritional care is not necessary • Check weight and height regularly (according to hospital policy) • Assess the malnutrition risk weekly

Sources:

Huysentruyt K, Alliet P, Muyshont L et al. The STRONG(kids) nutritional screening tool in hospitalized children: a validation study. Nutrition 2013 Nov-Dec; 29(11–12):1356–61

Tuokkola J, Hilpi J, Kolho KL, Orell H, Merras-Salmio L.
Nutritional risk screening – a cross-sectional study in a tertiary pediatric hospital.
J Health Popul Nutr 2019; 38:8. doi: 10.1186/s41043-019-0166-4

APPENDIX 8. Criteria for malnutrition diagnoses in children

ICD-10-kode	ICD-10-name	Description	Note
E40	Severe protein malnutrition	Severe malnutrition with oedema and dyspigmentation of skin and hair	
E41	Severe energy malnutrition	Malnutrition caused by inadequate energy intake	
E42	Severe protein-energy malnutrition	Intermediate form of severe malnutrition	
E43	Unspecified severe protein-energy malnutrition	Major weight loss (all ages) or absence of weight gain (children), and ISO-BMI is < 16 kg/m^2 in children aged 2–18 or height-weight ratio is < -30% in children under the age of 2	<-3 SDS in the ICD-10 definition, but using national weight units is a clearer method
E44.0	Moderate protein-energy malnutrition	Major weight loss (all ages) or absence of weight gain (children), and ISO-BMI is 16–17 kg/m^2 in children aged 2–18 or height-weight ratio is -20– -30% in children under the age of 2	-2– -3 SDS in the ICD-10 definition, but using national weight units is a clearer method
E44.1	Mild protein-energy malnutrition	Weight loss (all ages) or absence of weight gain (children), and ISO-BMI is 17–18.5 kg/m^2 in children aged 2–18 or height-weight ratio is -15– -20% in children under the age of 2	-1– -2 SDS in the ICD-10 definition, but using national weight units is a clearer method
E45	Retarded development following protein-energy malnutrition	Short stature, significant slowing or stagnation of growth or other retardation of other physical development due to malnutrition	Other physical development = neurological development or puberty development
E46	Unspecified protein-energy malnutrition	Unspecified nutritional disorder	

Source: ICD-10 International Classification of Diseases, version 2019

APPENDIX 9. SNAQ Appetite assessment

Appetite (SNAQ = The **S**implified **N**utritional **A**ppetite **Q**uestionnaire)

1. How would you describe your appetite?				
1 point ☐	2 points ☐	3 points ☐	4 points ☐	5 points ☐
Very poor	Poor	Average	Good	Very good
			SCORE	

2. When I eat...				
1 point ☐	2 points ☐	3 points ☐	4 points ☐	5 points ☐
I feel full after eating only a few mouthfuls	I feel full after eating about a third (1/3) of a meal	I feel full after eating over half (1/2) of a meal	I feel full after eating most of the meal	I hardly ever feel full
			SCORE	

3. Food taste...				
1 point ☐	2 points ☐	3 points ☐	4 points ☐	5 points ☐
Very bad	Bad	Average	Good	Very good
			SCORE	

4. How often do you eat (meal + snacks)?	
1 point ☐	Less than once a day
2 points ☐	Once a day
3 points ☐	Twice a day
4 points ☐	Three times a day
5 points ☐	Four times or more a day
SCORE	

TOTAL SCORE (add the scores from sections 1, 2, 3 and 4).	

A score of less than 14 indicates a poor appetite and a significant risk of unintended weight loss ≥5% during the next six months.

Original source: Wilson MM, Thomas DR, Rubenstein LZ et al. Appetite assessment: simple appetite questionnaire predicts weight loss in community-dwelling adults and nursing home residents. *Am J Clin Nutr* 2005; 82(5):1074–81

▶ **ELECTRONIC FORM** are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

APPENDIX 10. Multiprofessional nutritional care process

Patient/ family member

Describes their food restrictions and preferences

The patient arrives at an outpatient clinic or inpatient ward

Receives customer-oriented nutrition counselling or nutritional care if necessary

Is given an enriched diet and oral nutritional supplements if necessary

Implements a nutritional care plan, also after being discharged, if necessary

Nurse

- Weighs the patient and screens for malnutrition risk
- Records weight and the malnutrition risk screening result in the patient information system and communicates with the physician about the risk of malnutrition
- Takes eating-related problems into consideration
- Clarifies the diet needed by the patient and their food preferences, orders food and ensures that the patient receives the right food
- Monitors the patient's food use and fluid intake and participates in assessing the adequacy of intake

Changes the food order if necessary

Implements the planned nutritional care and provides nutrition counselling in accordance with their job description

Hospital cleaner/multi-service employee/care assistant

Participates in dispensing and distributing food

Assists with eating if necessary

Participates in completing the fluid list and the monitoring form for eating and communicates with the nurse about the amount of leftover food

Head nurse/unit supervisor

Responsible for the practical implementation of nutritional care in their unit

Food services and transport services personnel

Responsible for preparing the food and delivering it and other ordered products to the unit in compliance with hygiene regulations

Specialised employee

such as a speech or occupational therapist and physiotherapist, psychologist, rehabilitation counsellor and social worker

If necessary, participates in assessing, planning and monitoring the need for nutritional care

Nutritional care providers, implementation and development

Physician

- Performs an overall assessment of nutritional status, together with a nutritionist whenever possible
- Diagnoses malnutrition and assesses the extent of cachexia
- Records nutrition-related diagnoses
- Assesses the impact that treatments have on nutrition and nutritional status as well as how nutritional status affects the patient's care and condition
- Assesses the need for enteral or parenteral nutrition
- Plans the treatment of a patient who has malnutrition or is at risk of malnutrition
- Helps patients understand the importance of nutritional care
- Directs the patient to nutrition counselling or nutrition therapy
- Assesses, monitors and guides the patient's condition and care
- Identifies symptoms and findings that interfere with eating (e.g. mouth and teeth condition, ability to swallow) and is responsible for investigating and treating them

Nutritionist

- Assesses the food requirement, plans nutritional care – including enteral and parenteral nutrition, provides the patient and their family with guidance
- Implements the nutrition therapy required by the patient's nutritional status and disease
- Communicates with the ward or housing unit about the nutritional care plan
- Performs sufficient monitoring

Transaction and databank

Patient information system Food ordering system	Medication ordering system	National and international care recommendations as well as the nutritional care and operating instructions and nutritional care practices for the site/unit

OBJECTIVE:

The patient receives nutritional care and counselling in accordance with the requirements set by their nutritional status and disease.

Source: The text is adapted from the Tays Nutritional Care Chart from the year 2011

APPENDIX 11. Criteria for referral to nutrition therapy

Patient groups for whom a request for consultation with a nutritionist made always (**bold font**) or when necessary.

Disease or condition		Consultation with a Nutritionist – always	Consultation with a nutritionist – when necessary
DIABETES	• **Type 1 diabetes – at the time of** • **diagnosis/when treatment balance is poor**	x	x
	• Type 1 diabetes	x	
	• **Type 2 diabetes - multible dose insulin therapy/mealtime insulin**	x	
	• **Type 2 diabetes (BMI ≥ 30 or dyslipidaemia or gastroparesis or some other disease requiring nutritional care)**		x
	• Type 2 diabetes		x
	• Gestational diabetes		
OBESITY	• **Morbid obesity (BMI ≥40)**	x	
	• **Severe obesity (BMI ≥35) + associated disease**	x	
	• **Bariatric surgery patient**	x	
	• Obesity (BMI ≥30)		x
	• **Obesity, children (ISO-BMI ≥30, height-weight ratio ≥20/40% depending on age)**	x	
CARDIO-VASCULAR DISEASES	• Coronary heart disease		x
	• Lipid metabolism disorders		x
	• Elevated blood pressure		x
	• Heart failure		x
	• Congenital heart defects in children		x

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Disease or condition		Consultation with a Nutritionist – always	Consultation with a nutritionist – when necessary
DIGESTIVE TRACT DISEASES OR OPERATIONS	• **Coeliac disease and skin manifestations of coeliac disease (dermatitis herpetiformis)**	x	
	• Functional disorders of the digestive tract		x
	• Inflammatory bowel disease		x
	• **Severe pancreatic and liver failure**	x	
	• **Partial or complete pancreatectomy**	x	
	• Moderate to severe fatty liver disease		x
	• **Surgery in the mouth, pharynx or oesophagus area**	x	
	• **Partial or complete gastrectomy**	x	
	• **Intestinal failure, short bowel syndrome**	x	
	• **Ileostomy**	x	
	• Colostomy		x
	• Partial removal of the small intestine		x
	• **Complete colectomy and J pouch construction**	x	
KIDNEY DISEASES	• **Moderate/ severe renal failure**	x	
MUSCULO-SKELETAL DISEASES	• Rheumatic diseases		x
	• Osteoporosis		x
CANCERS	• Cancer (based on malnutrition status or the patient's other individual condition)		x
	• **Radiotherapy in the head, neck and oesophageal area**	x	
FOOD ALLERGIES AND HYPER-SENSITIVITY	• **Grain allergy**	x	
	• **Multiple allergies**	x	
	• **Milk allergy if the diet is very restricted or there is a problem with the child's growth**	x	
NEURO-LOGICAL DISEASES	• **ALS**	x	
	• **Severe epilepsy (ketogenic diet)**	x	
	• Parkinson's disease		x
	• Multiple sclerosis		x
	• Meniere's disease		x
	• Cerebrovascular disorders		x
	• Spinal cord injury		x

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Disease or condition		Consultation with a nutritionist – always	Consultation with a nutritionist – when necessary
EATING DISORDERS AND PSYCHIATRIC DISEASES	• **Anorexia nervosa**	x	
	• **Bulimia**	x	
	• **Binge Eating Disorder (BED)**	x	
	• Atypical eating disorder	x	
	• **Avoidant Restrictive Food Intake Disorder (ARFID)**	x	
	• Eating problems in children, for example, picky eating		x
	• Depression or other psychiatric disease or developmental neuropsychiatric disorder		x
MAL-NUTRITION AND ITS RISK	• **Severe risk of malnutrition (NRS 2002 ≥5, STRONGKids ≥4)**	x	
	• **Malnutrition (Full MNA <17, MNA Short form ≤7)**	x	
	• **Significant, unintentional weight loss**	x	
	• Unbalanced or restricted diet		x
	• **Long-term purée or liquid diet**	x	
	• Sarcopenia, gerastenia		x
ENTERAL NUTRITION	**Need for enteral nutrition**	x	
OTHERS	• **Burn injury ≥20%**	x	
	• **Major surgery, chronic wound**	x	
	• **Comorbidity**	x	
	• **Patients with multiple diseases requiring nutritional care**	x	
	• Organ transplant patient		x
	• Chronic obstructive pulmonary disease (COPD)		x
	• Intellectual disability		x
	• Rare disease		x
	• Vegan diet		x
	• **Vegan diet (pregnant, breastfeeding, children and young people)**	x	
	• **Retarded growth or underweight in a child**	x	
	• Premature		x
	• 75 years or over		x
	• Memory disorder		x

Source: Current Care Guidelines, ESPEN recommendations and Suhonen K, Aittola A, Nuutinen O et al. Hyvät ravitsemuskäytännöt – Ravitsemusterapeutit ja ravitsemusasiantuntijat osana terveyden edistämistä ja ravitsemushoitoa (Good nutrition practices – Dietitians and nutrition experts as part of health promotion and nutritional care). Association of Clinical and Public Health Nutritionists in Finland, RTY. 2020. (In Finnish).

APPENDIX 12. Nutrition therapy reception process

The need for nutrition therapy is identified	• The section on Nutritional care in various diseases and special conditions contains disease-specific clarifications/details about referring patients to nutrition therapy (see Appendix 11. Criteria for referral to nutrition therapy)
The physician makes a referral or provides information on the need for nutrition therapy according to the agreed treatment practice	• Follows the locally agreed referral practices • Selects the appointment method (in person/remote/paper consultation) and makes the appointment
The nutritionist assesses nutritional status, food use and nutrient intake	• Becomes familiar with the patient's information (diagnoses, health status, laboratory results, growth information) • Becomes familiar with the patient's current situation and that of the family if necessary • Assesses the patient's nutritional status if this was not done earlier and assesses the food requirement • Identifies any eating-related problems • Determines food use and calculates nutrient intake if necessary • Assesses the appropriateness of food intake • Consults with other professional groups if necessary
The nutritionist draws up a nutritional care plan and provides nutrition counselling	• Implements nutrition counselling as required by the disease and nutritional status and provides the patient with nutrition counselling based on their nutrient intake and, when appropriate, also to the patient's family and/or caregivers • Sends instructions to the further treatment location if necessary • Agrees on monitoring
The nutritionist records the content of the appointment	• Records the nutritional care plan and the nutrition counselling received by the patient and, when necessary, nutritional care in the patient record system and in the multiprofessional regulations or client record • Saves the diagnosis/reason for visit and nutritional care procedures in the patient document or client information system
Monitoring by a nutritionist	• Assesses implementation of the nutritional care plan, changes in nutritional status and food use and other results of nutritional care • Updates the nutritional care plan if necessary

APPENDIX 13. Finnish Institute for Health and Welfare (THL) Procedure codes for nutrition counselling

ID	Full name	Definition and examples of use
Main codes for nutrition counselling		
OAB72	Weight control and weight loss counselling	Advice and counselling related to nutrition, weight development and metabolism Overweight children and adults, bariatric surgery, diabetes and arteriosclerosis patients for whom weight control is critical
OAB73	Prevention and treatment of malnutrition	Advice and counselling related to nutrition, weight development and metabolism Enhanced nutrition counselling: enriched diet, favourite foods and snacks, oral nutritional supplements, enteral nutrition or parenteral nutrition. For example, patients with malnutrition or who are at risk of malnutrition (diagnosed with NRS 2002 or MNA), unintentional weight loss
OAB74	Nutrition counselling related to the treatment and rehabilitation of a disease	Advice and counselling related to nutrition, weight development and metabolism Type 1 and 2 diabetes, arteriosclerosis, coeliac disease, inflammatory bowel diseases, liver or kidney disease, food allergy or hypersensitivity, eating problems, eating disorder, neurological disease
OAB75	Nutrition counselling related to health maintenance	Advice and counselling related to nutrition, weight development and metabolism Nutritional adequacy of meals (e.g. vegetarian or restricted diet), nutrition during pregnancy, guidance related to a child's eating habits, preventive nutrition counselling
OAB76	General advice concerning nutrition and food	Advice and counselling related to nutrition, weight development and metabolism

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ID	Full name	Definition and examples of use
Also use		
OAB70	Counselling related to hydration	Counselling related to hydration and fluid balance provided to the patient or a family member, for example, to prevent dehydration or fluid accumulation Fluid restriction for a renal or heart failure patient
OAB31	Advice and counselling related to growth and development	Advice and counselling related to physical growth and neurological and psychological development Nutrition counselling for children
OAB40	Counselling related to substance abuse/risk behaviour	Advice and counselling related to intoxicants, tobacco and other risk behaviour Short intervention according to Current Care Guideline
OAA46	Meeting with a multidisciplinary expert group	Determining a student's need for support and organising the required student welfare services on a case-specific basis in a multidisciplinary expert group (section 14 of the Student Welfare Act 1287/2013). Participation in a pupil welfare group

ID	Full name	Definition and examples of use
Nutrition counselling provided in occupational health care		
OAB43	Advice and counselling related to occupational health	Provision of information, advice and counselling related to health, work ability and functional capacity Nutrition counselling in occupational health care
OAB26	Health plan prepared in occupational health care	The need for counselling and advice is assessed based on a health examination, and a personal health plan prepared in cooperation with the employee to support work ability Nutrition counselling in occupational health care

Source: Tampere University Hospital 2018. Recording diagnoses or reasons for visits as well as activities in nutritional care and statistics in AvoHilmo, which is based on the following: National code service: THL – ICD-10 International Classification of Diseases (in Finnish).

APPENDIX 14. Monitoring food and fluid intake

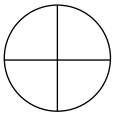
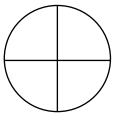
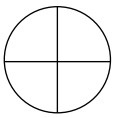
MONITORING FOOD AND FLUID INTAKE

Name of patient _____

Diet ordered _____

Portion size ordered (S–L): _____ Date _____

Record the amount of food consumed by the patient for each meal of the day. Record the fluids in the fluid list.
D = dessert. Record additional information about the content of the patient's meal in the "Other" section.

		Fluids	
		PROVIDED	CONSUMED
BREAKFAST  Tick the proportion of the meal eaten	bread: _____ slices fat: YES/NO cheese + cold cut: _____ slices other: _____ _____		
LUNCH  D Tick the proportion of the meal eaten	bread: _____ slices fat: YES/NO cheese + cold cut: _____ slices other: _____ _____		
SNACK	pastry: YES/NO other: _____ _____		
DINNER  D Tick the proportion of the meal eaten	bread: _____ slices fat: YES/NO cheese + cold cut: _____ slices other: _____ _____		
EVENING SNACK	bread: _____ slices fat: YES/NO cheese + cold cut: _____ slices other: _____ _____		TOTAL

Adapted from the form of Kuopio University Hospital (KYS).

ELECTRONIC FORM are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

APPENDIX 15. Implementing diets required for various diseases and special situations in food services

The table presents the main principles of diets for diseases and special situations. The order specifies the portion size, any changes in food texture that are needed, and the diet required for the disease.

Diet in various diseases/ special situations	**Implementing a diet in food services** If the diet has several restrictions based on different diseases, these should be indicated in the order so that food services can implement them as an individual diet. In this case, consultation with a nutritionist must be requested to ensure optimal nutrition.	**Diet ID communicated to food services** (diet abbreviations used in meal ordering; only in Finnish in the software database)
Low-lactose	Ingredients and food items with high lactose content are removed from a low-lactose diet. Milk and other liquid dairy products have the highest lactose content. In addition to milk and dairy products, many other foods may contain small amounts of lactose. The limit for lactose in a low-lactose diet is < 1 g/ meal. The meal-time beverage is a lactose-free product. A low-lactose diet includes cheeses and low-lactose dairy products. Some patients can tolerate normal sour milk products, such as yoghurt.	VL
Lactose-free	The limit for lactose in a lactose-free diet is < 0.1 g/100 g. The diet does not include products that contain lactose containing products, low-lactose dairy products, or ingredients or food items containing them. Lactose-free dairy product options are selected. Mature (hard) cheeses and processed cheeses made from them are lactose-free. The use of lactose-free milk and dairy products in cooking and baking purposes does not differ from normal cooking or baking. Plant-based products such as soya, oat and and rise drinks as well as oat- and soya-based products that replace cream can also be used for cooking and baking in the same way as dairy products. The milk used in casseroles and soups can also be replaced with meat, fish, chicken or vegetable broth.	L

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Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
Elimination diets for food allergies and intolerances The ward reports the ingredients that must be removed on an individual basis	Ingredients or food items containing the allergen in question cannot be used in food preparation. If the symptoms are severe, even the smallest contamination must be avoided at all stages of handling, preparation, storage, transport and serving. In case of an anaphylaxis symptom, information about this and the cause of anaphylaxis is always recorded in the patient information system and food ordering program. In order to ensure safety, the patient's food portion is clearly marked with, for example, a red warning card that accompanies the meal from food services to wards. This indicator must remain on the client's tray throughout the meal. Products marked with "may include" in the list of ingredients are not used in food preparation. These markings are based on the actual contamination risks identified by manufacturers in accordance with the legislation. These products can also cause symptoms in people who have allergies and are very sensitive. A food improvement agent (e.g. natural flavourings) must be labelled using its own name if it is one of the ingredients that may cause hypersensitivity as indicated in the food legislation. These are avoided according to the food order, but it is not necessary to avoid other flavourings. Food for patients with multiple allergies is often prepared from basic ingredients that contain no flavourings and other additives. People with multiple allergies may have a very restricted diet. In this case, it is important to consider the nutritional content of substitute products in order to guarantee a balanced diet. Ordering food can be facilitated by using the separate Suitable ingredients form (Appendix 24 Form a Children and Form b Adults). Suitable ingredients should be used in varied ways (see Food allergies and intolerances, p. 162).	EI-MAITO EI-MUNA EI-KALA EI-PAHKINA Others: individual diet
Coeliac disease Gluten-free diet If a gluten-free diet is ordered other than in connection with coeliac disease, the strictness of gluten avoidance must be stated and the food ordered as an individual diet. In this case, the cereals to be avoided and the strictness of avoidance are specified separately	Implemented as gluten-free. Patients with coeliac disease can use gluten-free and very low gluten foods. In terms of legislation, the limit values are a maximum of 20 mg/kg gluten for gluten-free products and a maximum of 21–100 mg/kg for products with very low gluten content. It is important to read the list of ingredients on the packaging thoroughly. A product that is labelled "may contain gluten", "may contain wheat", "may contain other cereals" must not be used. The Finnish Coeliac Society maintains a list of ingredients and food items that are suitable and unsuitable for a gluten-free diet (keliakialiitto.fi, in Finnish). Oat drinks and products with a gluten content of less than 20 mg/kg may be used in a gluten-free diet. Wholegrain cereal products are recommended because they are an important source of fibre, many vitamins and minerals. Vegetables and fibre supplements should be used in baking and cooking to ensure adequate fibre intake.	G (Note: only for coeliac disease patients) + individual restrictions if necessary

To be continued >>

Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
	In order to avoid contamination, gluten-free products are stored in clearly marked, sealed containers, and kept on separate shelves. Baking of gluten-free products is separated from other baking by either preparing the products at a different time or by physically separating the process from other baking and cooking. Surfaces must be wiped before baking and clean equipment and clothing used during gluten-free baking, as well as baking cloths to prevent contamination. If baking is only done at a different time, gluten-free products should always be baked first. Pastries are frozen in single-serving packages with a product description and the date. Gluten-free product sent to the ward always include a product description.	
Irritable bowel syndrome The ward orders a basic diet and reports any individual restrictions	Basic diet. Only those ingredients that cause symptoms are avoided on an individual basis. People who suffer from flatulence and bloating of the stomach often avoid foods that cause gas, such as cabbage, peas, beans, onions and apples. Poorly absorbed sugar alcohols like sorbitol and xylitol, as well as fructose, can aggravate the symptoms. Avoidance of these items should be indicated as individual food restrictions if necessary. A vegetarian diet must contain enough high-quality protein despite any food restrictions. (See Irritable bowel syndrome, p. 171).	PERUS + individual restrictions if necessary
Inflammatory bowel diseases The ward orders the diet for a gastrointestinal patient or reports the individual food restrictions	The diet for a gastrointestinal patient is implemented in low-lactose or lactose-free form. The diet consists of easily digestible food items that cause as little flatulence and risk of bowel obstruction as possible (see Appendix 30. Ingredient selection for gastrointestinal patients) (for SUOLIRV and MASU diets). The patient can have an individual diet if necessary.	SUOLIRV/ MASU/ YKSILÖLLINEN + VL/L
Gastroparesis The ward orders a soft/purée, coarse + gastrointestinal patient, gastrointestinal or individual diet + enriched if necessary	A soft or purée diet, if necessary, as an enriched diet for a gastrointestinal patient. The fibre content of the diet may comply with the basic diet, but no fibre supplements are used. If necessary, the diet should be enriched with oral nutritional supplements. Powdered products are added to food in food services.	SUOLIRV/ MASU/ YKSILÖLLINEN + PEHMEÄ/ SOSEKARKEA + TEHO
Neurological patients (Stroke, Parkinson's disease, ALS, Multiple sclerosis) The ward orders a texture-modified diet if necessary + enriched if necessary	Basic diet, texture-modified if necessary (soft, coarse purée, smooth purée). (See Section 6. Food texture modifications, p. 123, Section 5. Food procurement, p. 109 Thickening agents, p. 188 and Section 8. Swallowing difficulties, p. 185).	PERUS/ PEHMEÄ/ SOSEKARKEA/ SOSESILEA + TEHO

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Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
Swallowing difficulties The ward orders a texture-modified diet if necessary + enriched if necessary	Texture-modified diet according to the individual situation. (See Appendix 21. Thickening of fluids p. 323, Chapter 5. Food procurement p. 109, Thickening agents p. 188 and Section 6. Food texture modifications, p. 123).	PEHMEA/ SOSEKARKEA/ SOSESILEA/ NESTEMÄINEN + TEHO
Constipation The ward orders ready products suitable for individual use in cases of constipation	Fibre content as in a basic diet according to nutrition recommendations (approximately 3 g/MJ) is usually sufficient. Good sources of fibre include wholegrain cereals, vegetables, berries, fruit, nuts, almonds and seeds. Sufficient fluids. The selection of ready products should include products suitable for treating constipation (e.g. plum juice/nectar, Pajala porridge).	PERUS
Disabilities The ward orders a basic/ individual diet according to needs	The food is modified according to individual needs. An enriched diet if necessary. Food delivery to the ward preferably using food dispensing in the ward (decentralised), which makes it possible to take individual restrictions and needs into account.	PERUS/ PEHMEA/ SOSEKARKEA/ SOSESILEA/ NESTEMÄINEN + TEHO
Renal failure Based on the basic diet or the ward orders a phosphorus-restricted/dialysis diet + individual potassium restriction/ salt restriction	The early stages of the disease may involve the need for a slight protein restriction, which is determined individually. **Diet prior to dialysis** • Minimal use of ingredients with high phosphorus content is essential. Avoiding additives that contain phosphorus is a priority and contributes to significantly limiting phosphorus intake. The high phosphorus additives E338–343 and E450–452 contain phosphorus that is easily absorbed. Processed meat products as well as sauces, soup and dessert ingredients often contain added phosphates. Processed meat products also include cold cuts and sausages. • High-fibre cereal products contain a lot of phosphorus, but the utilisation of phosphorus in wholegrain products varies according to the manufacturing method. Sourdough fermentation increases the absorption of phosphorus from bread, and thus increases the patient's phosphorus intake in comparison to leavened bread. The majority of bread is served in low-fibre form, but it is a good idea to keep the range of bread as diverse as possible to provide variation. Pastries made with baking powder and phosphorus-rich leavening agents also contain phosphorus additives. Pastries made with baking soda are suitable. • Sugar beet fibre can be used as a fibre product in porridge and gruels. Bran should not be used. • Dairy products have high phosphorus and potassium content, so their use is restricted to 1–2 dl per day in adults. The liquid dairy products used in food preparation should be replaced with oat, almond or rice products, or vegetable fat mixtures that contain no added phosphate. It should be noted that almond and rice drinks contain very little protein and that the diet of children under the age of 6 may not include rice drinks. Oat and soya snack products with no added tricalcium phosphate (E341) are suitable alternatives to yoghurt and quark. Cola drinks are high in phosphorus.	PERUS + individual protein restriction if necessary FOSFORIRAJ/ KALIURAJ/ SUOLARAJ

To be continued >>

Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
Renal failure Based on the basic diet or the ward orders a phosphorus-restricted/dialysis diet + individual potassium restriction/ salt restriction	• Cottage cheese, mozzarella, home-made cheese and fresh cheeses are suitable options. Hard (matured) cheeses and processed cheeses should be avoided. • Egg can be used in the form of egg white products. • In the case of a potassium restriction, the best berries are wild berries and blueberries, while preferred fruits are apple, pear, orange, satsuma and watermelon, as well as canned fruit without the liquid. Dried fruit should not be offered. **Dialysis diet** The diet is intended for haemodialysis and peritoneal dialysis patients. A dialysis diet restricts phosphorous and is low-salt with little fluids. A child's need for protein and fluids is always assessed on an individual basis. • Due to the low amount of fluids, casseroles and stews as well as sauce-based foods should be favoured. Pancakes, crepes, crumbles and pastries are suitable as desserts. • Potato is served peeled, cut up when possible, and boiled in plenty of water and replaced in part with low-fibre rice and macaroni. Mashed potato products, French fries, etc. should not be used. • Vegetable portions are smaller than the basic diet portions if a potassium restriction is required. • Dairy and cereal products as in the pre-dialysis diet. • Eggs as such only for patients with malnutrition (in the TEHO diet). • The egg white protein product can be used.	PERUS + individual protein restriction if necessary FOSFORIRAJ/ KALIURAJ/ SUOLARAJ DIAL + individual restrictions and enrichment + TEHO
Liver diseases The ward orders a basic diet/ individual diet if necessary	Basic diet. If necessary, an enriched diet or other individual changes to the diet.	PERUS/ YKSILÖLLINEN
Pancreatitis The ward orders a basic diet that is texture-modified and enriched if necessary	In acute situations, the diet for a gastrointestinal patient is used. Changes in texture and enrichment are reported individually.	SUOLIRV + RAKENNE-MUUTETTU + TEHO
Pulmonary diseases The ward orders a basic diet or an individual diet	The basic diet and the necessary changes are reported individually. An enriched diet if necessary. A high-protein diet (for people over 65 years of age).	PERUS/ YKSILÖLLINEN + TEHO + RUNSPROT
Cancer patients If necessary, the ward orders the patient's favourite dishes and snacks as ready products	Basic diet. If necessary, an enriched diet or other individual changes to the diet. Food services plans the selection of favourite dishes and ordering practices in cooperation with the wards that are treating cancer patients. The starting point for planning is the patient's requests. The selection should also include cold foods such as pasties, cold cuts and cheeses.	PERUS

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Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
Weakened resistance The ward orders a basic diet and reports any individual restrictions if necessary	Basic diet, taking individual needs into account. A high-protein or enriched diet if necessary. The serving and storage temperature regulations and the time limits set for them must be strictly observed even in the case of individual meals. In hospitals that regularly treat patients receiving organ or stem cell transplants or cytostatic therapy, an individual diet can be ordered with a "food restrictions for weakened resistance" diet compiled in the ordering system. The instructions in Appendix 19 can be used to compile these ordering instructions in food services. A fixed period must always be set for individual food restrictions. See Appendix 19. Special instructions related to food safety.	PERUS/ YKSILÖLLINEN
Wound patients The ward orders an enriched high-protein diet and specifies the individual energy level	An enriched, high-protein diet. An age-appropriate enriched diet for new-borns and paediatric patients. In addition to a high-protein diet, adults with a stage 3 or higher pressure ulcer who have or are at risk of malnutrition should receive oral nutritional supplements with a high protein content, The energy content of these is selected according to the patient's individual needs.	TEHO + RUNSPROT
Traumas and severe burns The ward orders an enriched, high-protein diet and specifies the individual energy level and texture	A high-protein or enriched diet. If necessary, an individual diet is planned based on the recipes for an enriched diet.	TEHO + RUNSPROT/ YKSILÖLLINEN
Morbid obesity The ward orders a basic diet or a diet for a bariatric surgery patient and specifies the individual energy level and texture if necessary	Basic diet according to individual energy needs. A high-protein or enriched individual diet for patients at risk of malnutrition. After surgery, the diet for a bariatric surgery patient is texture-modified, lactose-free and the portion size is very small (XS). With very small portions it is important to maintain good quality during transport and heating in order to, for example, to prevent the product from drying out.	PERUS/ YKSILÖLLINEN LILE/ YKSILÖLLINEN/ RAKENNE-MUUTETTU
Surgical patients Colectomy, stoma or J-pouch Gastrectomy Pancreatic cancer surgery Oesophageal cancer surgery The ward orders a diet for gastrointestinal patients	The diet is determined by the patient's disease and surgical treatment. Individual restrictions are taken into account in the diet for gastrointestinal patients. The diet is lactose-free and low-fibre. This diet is only intended for short-term use.	SUOLIRV/ MASU/ YKSILÖLLINEN
COVID-19 or other serious infection The ward orders a basic diet that is enriched if necessary	Enriched according to the individual condition. Favourite foods as ready products.	PERUS/ TEHO/ YKSILÖLLINEN

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Diet in various diseases/ special situations	Implementing a diet in food services	Diet ID communicated to food services
Psychiatric and neuropsychiatric disorders The ward orders a basic diet, taking individual requirements into account	Food should preferably be delivered to the ward as a decentralised food distribution system. Individual patients can be provided with separately packaged food portions if dispensing food in the ward presents challenges. If necessary, food for a neuropsychiatric patient can also be ordered food to the ward without mixing (for example, serving the vegetables in salads separately), which may facilitate acceptance of the foods.	PERUS + individual requirements + food that can be eaten with the fingers if necessary for a patient who cannot use utensils
Eating disorders The department orders a basic diet in which the individual portion size and any individual requirements are specified	Food is provided according to the patient's individual meal plan and care agreement. The person dispensing the food is responsible for ensuring that the patient receives a meal portion that corresponds to their meal plan. The food is prepared as a basic diet, a basic diet without red meat, a pescovegetarian diet, a lacto-ovovegetarian diet or a lactovegetarian diet in the portion size ordered by the ward. A vegan diet is usually not nutritionally insufficient for a person with anorexia nervosa, but a vegan diet can be ordered if the care team and a nutritionist assess that it supports the patient's recovery.	PERUS/ KASVISRUOKA-VALIO/ YKSILÖLLINEN
Patients with comorbidity The ward orders an enriched or high-protein diet in texture-modified form if necessary	Patients with comorbidity often need an enriched or high-protein diet, which is implemented in texture-modified form and adapted to individual needs if necessary.	TEHO/ RUNSPROT
Palliative care If necessary, the ward orders the patient's favourite dishes and appealing ready products	In addition to normal dietary options, food services must have a menu of preferred foods and provide the opportunity for the ward to also order food in small tasting portions.	PERUS + individual requests
Children The ward orders foods on an individual basis	**For children under the age of one**, a dairy-free, salt-free diet without any ingredients unsuitable for infants should be ordered (see Finnish Food Authority: General instructions on the safe use of foodstuffs https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/). Depending on the child's age and development, this is implemented as smooth or coarse purée food. Planning takes into account the national nutrition recommendations for infants (National Nutrition Council and Finnish Institute for Health and Welfare. Eating together – food recommendations for families with children).	YKSILÖLLINEN
The ward orders food based on the basic menu for children, with consideration to individual special requirements (transition to the adult menu takes place on an individual basis) If necessary, food from the menu of favourite foods and appealing ready products	**Children over the age of 1 year** The diet for children over the age of one involves adapting basic food to suit children's tastes. Food items should preferably be served separately. The clarity of foods is important, and therefore only a few ingredients should be combined with them. Close cooperation between food services and paediatric wards is needed when planning the children's menu and favourite foods and snacks for children. Planning takes into account the national nutrition recommendations for children (National Nutrition Council and Finnish Institute for Health and Welfare. Eating together – food recommendations for families with children).	LASTEN PERUS-RUOKAVALIO

APPENDIX 16. Religions and the selection and use of foods

Ingredient	Islam	Judaism	Buddhism	Hinduism	Adventists	Mormons
Milk and dairy products	+	no with meat, or with animal fat	+/– (strictest vegans)	+/– (strictest vegans)	+	+
Meat, fish, egg						
Beef	+ halal	+ kosher	+/– some eat	–	+/–	+
Pork	–	–	+/–	+/–	–	+
Lamb, reindeer	+ halal	+ kosher	+/–	+/–	+/–	+
Poultry	+ halal	+ kosher	+/–	+/–	+/–	+
Elk	+ halal	–	+/–	+/–	+/–	+
Blood and organ meats	–	–	+/–	+/–	–	+
Fish, roe, shellfish egg	+	+ (no shellfish)	+/–	+/–	+/–	+
Gelatine, additives of animal origin*	–	+/–	+/–	+/–	+/–	+
Coffee, tea, alcohol	+ /alcohol –	+	–	+	–	–
Other conside-rations	Ramadan fasting period	Yom Kippur and Tisha B'Av celebrations and fasting	Continuous fasting (e.g. eating in a certain time window)			

\+ = suitable for the diet
– = unsuitable for the diet
+/– = may be suitable for the diet

* Finnish Food Authority: Additives of animal origin (only in Finnish and Swedish) https://www.ruokavirasto.fi/elintarvikkeet/elintarvikeala/ainesosat-ja-sisalto/lisaaineet-aromit-ja-entsyymit/lisaaineet/elainperaiset-valmistus--ja-lisaaineet/elainperaisia-lisaaineita/

APPENDIX 17. Recommended daily intake of vitamins and minerals. Table a and b

Table a. Recommended daily intake of vitamins[1]

Age, year	Vitamin A RE[3]	Vitamin D[4] µg	Vitamin E α–TE[5]	Thiamine mg	Ribo-flavin mg	Niacin NE[6]	Vitamin B_6 mg	Folate µg	Vitamin B_{12} µg	Vitamin C mg
Children										
< 6 month[2]	—	—	—	—	—	—	—	—	—	—
6–11 month	300	10	3	0.4	0.5	5	0.4	50	0.5	20
12–23 month	300	10	4	0.5	0.6	7	0.5	60	0.6	25
2–5 year	350	10	5	0.6	0.7	9	0.7	80	0.8	30
6–9 year	400	10	6	0.9	1.1	12	1.0	130	1.3	40
Men										
10–13 year	600	10	8	1.1	1.3	15	1.2	200	2.0	50
14–17 year	900	10	10	1.4	1.7	19	1.6	300	2.0	75
18–30 year	900	10	10	1.4	1.6	19	1.5	300	2.0	75
31–60 year	900	10	10	1.3	1.5	18	1.5	300	2.0	75
61–74 year	900	10[4]	10	1.2	1.4	16	1.5	300	2.0	75
≥75 year	900	20[4]	10	1.2	1.3	15	1.5	300	2.0	75
Women										
10–13 year	600	10	7	1.0	1.2	14	1.1	200	2.0	50
14–17 year	700	10	8	1.2	1.4	16	1.3	300	2.0	75
18–30 year	700	10	8	1.1	1.3	15	1.2	400	2.0	75
31–60 year	700	10	8	1.1	1.2	14	1.2	300[7]	2.0	75
61–74 year	700	10[4]	8	1.0	1.2	13	1.3	300	2.0	75
≥75 year	700	20[4]	8	1.0	1.2	13	1.3	300	2.0	75
Pregnant	800	10[4]	10	1.5	1.6	17	1.4	500	2.0	85
Breast-feeding	1 100	10[4]	11	1.6	1.7	20	1.5	500	2.6	100

1 Recommended intake is the amount of nutrients obtained from the ready-to-eat food. Nutrient loss due to cooking and processing must be taken into consideration in diet planning.

2 As a rule, breast milk or infant formula satisfies the energy and nutrient needs of children under 6 months of age, with the exception of vitamin D. If breastfeeding is not possible, industrial infant formula should be used. If supplemental nutrition starts at the age of 4–5 months, the recommendations of children aged 6–11 months apply.

3 Retinol equivalent (RE) = 1 µg retinol = 12 µg ß–carotene.

4 In Finland, the recommended vitamin D supplement is 2–10 µg/day from the age of 2 weeks until 12 months depending on the amount of infant formula/follow-on formula, 10 µg/day for 1-year-olds and 7.5 µg/day for 2–17-year-olds. The recommended vitamin D supplement for pregnant and breastfeeding women is 10 µg/day all year round. A vitamin D supplement of 20 µg/day is recommended for people aged 75 or over. A reduced vitamin D supplement (10 µg) can be recommended if the patient regularly consumes a lot of vitamin-supplemented dairy products, dietary fats and/or fish. If vitamin D-fortified dairy products, fat spreads and/or fish are not consumed 2–3 times per week, a vitamin D supplement of 10 µg is recommended for people aged 18–74 during the darkest time of the year (October–March).

5 α–tocopherol equivalent (α–TE) = 1 mg RRR α–tocopherol.

6 Niacin equivalent (NE) = 1 mg niacin = 60 mg tryptophan.

7 The recommended intake for women of fertile age is 400 µg/day.

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Table b. Recommended daily intake of minerals

Age, year	Calcium mg	Phosphorus mg	Potassium g	Magnesium mg	Iron[8] mg	Zinc[9] mg	Copper mg	Iodine µg	Selenium µg
Children									
< 6 month[2]	—	—	—	—	—	—	—	—	—
6–11 month	540	420	1.1	80	8	5	0.3	50	15
12–23 month	600	470	1.4	85	8	5	0.3	70	20
2–5 year	600	470	1.8	120	8	6	0.4	90	25
6–9 year	700	540	2.0	200	9	7	0.5	120	30
Men									
10–13 year	900	700	3.3	280	11	11	0.7	150	40
14–17 year	900	700	3.5	350	11	12	0.9	150	60
18–30 year	800[10]	600[10]	3.5	350	9	9	0.9	150	60
31–60 year	800	600	3.5	350	9	9	0.9	150	60
61–74 year	800	600	3.5	350	9	9	0.9	150	60
≥75 year	800	600	3.5	350	9	9	0.9	150	60
Women									
10–13 year	900	700	2.9	280	11	8	0.7	150	40
14–17 year	900	700	3.1	280	15[11]	9	0.9	150	50
18–30 year	800[10]	600[10]	3.1	280	15[11]	7	0.9	150	50
31–60 year	800	600	3.1	280	15 (9[12])	7	0.9	150	50
61–74 year	800	600	3.1	280	9	7	0.9	150	50
≥75 year	800	600	3.1	280	9	7	0.9	150	50
Pregnant	900	700	3.1	280	–[13]	9	1.0	175	60
Breast-feeding	900	900	3.1	280	15	11	1.3	200	60

8 The composition of the meal affects the utilisation of dietary iron. Absorption improves if the diet contains sufficient vitamin C and meat or fish on a daily basis. For example, the polyphenols in vegetables and phytic acid in cereal products reduces absorption of iron when eaten in conjunction with a meal.

9 Animal protein improves utilisation of the zinc contained in food, while the phytic acid in cereal products reduces it. The recommendation applies to a mixed diet. The recommended zinc intake in a vegan diet is 25–30% higher.

10 The recommendation for 18–20-year-olds is 900 mg of calcium and 700 mg of phosphorus.

11 Because the loss of iron caused by menstrual periods may vary greatly, the need for iron is very individual. 15 mg of iron per day is sufficient for many women of fertile age. Some women need an iron supplement.

12 The recommended intake is 9 mg for women who have reached menopause.

13 Iron balance during pregnancy requires iron stocks of approximately 500 mg at the start of pregnancy. It is difficult to meet the increased need for iron after the first trimester of pregnancy without iron supplements.

Source: Terveyttä ruoasta – suomalaiset ravitsemussuositukset
(Finnish nutrition recommendations for adults, in Finnish), 2014.

APPENDIX 18. Diets needed in food services, their purpose and symbols and abbreviations

Diet ID	Diet name	Abbreviation*	Description of the purpose**
BASIC	Basic food	PERUS	A diet for persons whose health status or disease does not require a special diet, e.g. diabetes, elevated blood lipid values, elevated blood pressure, gout, cholelithiasis and osteoporosis.
NO RED MEAT	No red meat	EI-PUN-LIHA	A diet without red meat (e.g. beef, pork, lamb, game, organ meats).
VEGETARIAN-FISH Pesco-vegetarian	Vegetarian+ milk+egg+fish	KASVIS-KALA	A vegetarian diet that includes dairy products, egg, fish and shellfish.
VEGETARIAN Lacto-ovo-vegetarian Lacto-vegetarian	Vegetarian+ milk+egg Vegetarian+ milk	KASVIS-MUNA KASVIS	Vegetarian diets that include dairy products or dairy products and eggs. Must be specified with food services for implementation.
VEGAN	Vegan	VEGAANI	A vegetarian diet that only includes products from the plant origin. In a vegan diet, products of animal origin must be replaced with plant products to ensure sufficient nutritional content.
LOW-LACTOSE	Low-lactose	VL	A diet for people with lactose intolerance who can tolerate small amounts of lactose. Low-lactose and lactose-free products are used in food preparation.
LACTOSE-FREE	Lactose-free	L	A diet for people with lactose intolerance symptoms for whom low-lactose food causes symptoms. Lactose-free products are used in the diet.
TEXTURE-MODIFIED soft	Soft diet	PEHMEA	For people who have minor chewing problems. The food can be mashed with a fork.
TEXTURE-MODIFIED purée, coarse	Coarse purée	SOSE-KARKEA	For people whose ability to chew is not sufficient to eat soft food or who need puréed food that is easier to swallow for other reasons, for example, when gradually moving from liquid food to normal texture food after intestinal surgery. The food is chopped, but not smooth. For example, minced meat can be used.

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Diet ID	Diet name	Abbreviation*	Description of the purpose**
TEXTURE-MODIFIED purée, smooth (dysphagia)	Smooth purée	SOSE-SILEA	Used in cases of swallowing disorders, e.g. people with dysphagia and/or risk of aspiration. The food and ingredients are smooth and no liquid is visible in them. Fluids are thickened with amylase-resistant starch.
TEXTURE-MODIFIED liquid	Liquid diet	NESTE	The food is completely liquid. It can be eaten with a straw. Based on individual requirements, the diet is supplemented with oral nutritional supplements to ensure adequate energy and protein intake.
MILK ALLERGY	Milk allergy	EI-MAITO	The diet contains no milk or milk protein. This is different than avoiding lactose.
EGG ALLERGY	Egg allergy	EI-MUNA	The diet does not contain any eggs or egg components or egg products in any form.
FISH ALLERGY	Fish allergy	EI-KALA	The diet does not contain fish, shrimp or other shellfish or shellfish components in any form.
GLUTEN-FREE	Gluten-free	G	A coeliac disease diet that includes gluten-free oats and other naturally gluten-free cereals and gluten-free wheat starch. If the patient is unable to use gluten-free oats, this information should be reported separately.
ENRICHED	Enriched	TEHO	A diet for people who have malnutrition, are at risk of malnutrition or who have a poor appetite. The portion size is 1/2–2/3 of the basic diet portion containing the same amount of energy.
HIGH PROTEIN	High protein	RUNSPROT	A diet for people who need more protein than the amount in a basic diet but do not require additional energy, such as wound patients who have a good appetite.
DIET FOR INTESTINAL PATIENTS The diet ID can also be DIET FOR GASTRO-INTESTINAL PATIENTS	Diet for intestinal/ gastro-intestinal patients	SUOLIRV/ MASU	A diet for people who have recently undergone a procedure such as ileostomy, J-pouch (IPAA), extensive bowel surgery, or a partial or full gastrectomy. This can also be used for people with sensitive stomach and in the acute phase of cholelithiasis. The diet does not include any ingredients that have long fibres, tough, have seeds or membranes, or cause flatulence. It also contains no nuts or seeds. The diet is lactose-free and almost always low in fibre. This diet is intended for short-term use.

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Diet ID	Diet name	Abbreviation*	Description of the purpose**
BARIATRIC SURGERY PATIENTS	Bariatric surgery	LILE	A diet for people who have recently undergone bariatric surgery. The diet starts with liquid food, and gradually moves to purée/soft food and then solid food as recovery progresses. The food is lactose-free and portion size is very small (approximately half the S portion size).
POTASSIUM RESTRICTION	Potassium restriction	KALIUMRAJ	A diet for people whose serum potassium concentration increases too much, e.g. in some kidney patients. Kidney patients who need a potassium restriction are combined with the Phosphorus restriction diet. The diet restricts dairy products, potato, wholegrain cereal products, coffee and potassium-rich vegetables, berries and fruit.
SALT RESTRICTION	Salt restriction	SUOLARAJ	A diet for people who need a salt restriction, for example, because of Meniere's disease. No salt is added during food preparation. The diet offers foods that are salt-free and as low in salt as possible. Salt intake should be a maximum of 2 g/day.
DIALYSIS	Dialysis	DIAL	The diet is suitable for haemodialysis and peritoneal dialysis patients. It restricts phosphorus, salt and fluid intake, while ensuring adequate protein and energy intake. If a potassium restriction is required, the diet is ordered as DIAL+KALIUMRAJ.
PHOSPHORUS RESTRICTION	Phosphorus restriction	FOSFORIRAJ	A diet for people with, for example, renal failure. It restricts phosphorus intake by, for example, limiting milk, cold cuts and wholegrain products.
INDIVIDUAL DIET	Individual diet	Ingredients that must be avoided or which are suitable and/or portion sizes are reported separately	Individual diseases and conditions that require a care plan, such as allergies/ hypersensitivity diets (except for milk, eggs and fish as listed above), ketogenic diet, individual diet for irritable bowel syndrome and dietary combinations required by a disease. If the diet includes many foods to be avoided, the suitable foods should be reported (see Appendix 24a and 24b).

* Diet abbreviations used in meal ordering; only in Finnish in the software database.

** When food services are produced for children or geriatric patients, the list of diets offered must be modified according to the requirements of the target group and nutritional care practices.

APPENDIX 19. Special instructions related to food safety

Product group	Products to avoid/processing instructions
Instructions for all product groups	The Finnish Food Authority's instructions on the safe use of foodstuffs are always followed for all patients. When additional restrictions are required because of weakened immunity, the instructions in this table should be followed in addition to the instructions on safe use.
1 Fish and fish products, shellfish	Herring (vacuum packed and semi-preserved) Warm-smoked fish
2 Meat and meat products, chicken	Avoid meat products for which the manufacturing process does not involve heating: cold smoked meat, preserved sausages (e.g. salami) air-dried ham, dried meat.
3 Eggs	Raw or soft-boiled egg Foods containing raw eggs (including home-made mayonnaise, cake dough and desserts, such as parfaits). Unpasteurised egg products (e.g. egg products used by catering kitchens)
4 Ready-to-eat foods	Ready-to-eat, refrigerated products are eaten well before the expiry date. The products are heated thoroughly before eating, if heating of the product is possible. This also applies to pies, plant-based products such as tofu, fava bean, pea, soya protein-based products, and cooked egg in broth.
5 Dairy products and cheeses	See the basic instructions The Finnish Food Authority's instructions on the safe use of foodstuffs
6 Vegetables and root vegetables	Can be used as such • vegetables with a smooth peel that are washed thoroughly before chopping • peeled vegetables, washed thoroughly before and after peeling • cabbage with the top leaf layer removed • root vegetables before the turn of the year so that the root vegetables is washed thoroughly before and after peeling. Only use when heated • pre-cut or chopped vegetables • root vegetables stored past the turn of the year • vegetables that cannot be washed thoroughly and/or peeled.

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Product group	Products to avoid/processing instructions
7 Berries and fruit	Fruit is washed and peeled before use. Smooth-skinned berries are rinsed before use. Avoid berries with a soft skin that cannot be cleaned by washing (e.g. raspberry, strawberry) and damaged berries. Avoid pre-cut fresh or frozen fruit that has not been heated.
8 Beverages	Unpasteurised home-made beer, mead and kombucha Ice cubes dispensers for which there is no information about cleanliness.
9 Other products	Honey (*C. botulinum*-risk) Nuts and seeds in muesli and as such Unheated spices and dip sauce powders Protein powders (other than oral nutritional supplements) when not heated According to a physician's evaluation: Food supplements, beverages and other foods to which probiotics (other than as a fermentation starter) have been added.

APPENDIX 20. Tips for implementing enriched and texture-modified diets

- Enriched and texture-modified diets must be supplemented with foods that are high in energy and protein. Their use is necessary in order to achieve the target values in the recommendation.

- Oral nutritional supplements can effectively increase the energy and nutrient content of these diets.

- Changing the texture of food has a negative impact on appearance and enjoyment of food. Special attention should be paid to the flavour, colour, structure and temperature of food when developing diets and food preparation instructions. Sauces should be utilised when implementing a soft diet.

- Diet enrichment is needed for patients with a poor appetite and whose nutrient intake is less than 75% of the estimated requirement, as well as for patients who are unable to eat basic diet portions.

Examples of methods that food services and wards can use to improve the effectiveness of enriched and texture-modified diets

- Maltodextrin
- Milk powders and milk protein powders: milk-based porridge/gruel, dessert and snack products, mashed potatoes, vegetable purée soups, sauces (NOTE: these products can also be used in warm foods if they are added at the end of preparation and/or the product is not heated for long periods of time).
- High-protein products available in retail stores, e.g. quarks, beverages
- Pea protein powder: e.g. in vegetarian foods when the amount of vegetable protein, such as beans, can no longer be increased
- Egg white powder: e.g. in desserts such as smoothies, daily energy drinks, yoghurts, semolina porridge. Add after cooling.
- Vegetable oils and liquid vegetable fat products: porridge/gruel, mashed potatoes, vegetable purée soups, sauces
- Oral nutritional supplements
- Desserts for texture-modified diets are always prepared in enriched form

APPENDIX 21. Thickening of fluids for patients with difficulty swallowing/dysphagia and infants who have reflux

Thickening of thin liquids, broths and soups is often necessary in connection with swallowing problems. Thickened food and drinks are easier to control in the mouth. This also makes swallowing safer and reduces the risk of aspiration.

The consistency of foods can be changed by means of powdered thickening products. Thickening powders are so-called amylase resistant products, which means that the texture of the thickened drink remains unchanged, even if saliva mixes with the drink while eating. Products intended **for adults**, such as *Nutilis Clear*, *Resource Thicken Up Clear* and *Thick and Easy Clear*, are sold in pharmacies. *Nutrilon Nutriton* **for children under 3 years** of age is sold in pharmacies and shops. The powders can be added to cold and warm (≤70°) drinks, soups and oral nutritional supplements. The degree of thickening should always be selected according to each patient's needs. A speech therapist should be consulted if necessary.

Levels of thickening

Level 1 = juice soup consistency (eaten with a thin straw)

Level 2 = kissel-like consistency (eaten with a thick straw or spoon)

Level 3 = jelly-like/pudding-like consistency (eaten with a spoon)

Refrigerated liquids do not thicken well, so it is a good idea to keep the drinks and food being thickened at room temperature for a while. Acidic liquids (e.g. lingonberry juice) may require more thickener product than neutral liquids. So-called *Clear* products are recommended for thickening beverages. Food services utilises heat-resistant thickeners.

INSTRUCTIONS FOR USING AND DISPENSING THICKENING PRODUCTS

Always follow the manufacturer's instructions on the package when using the product.

Nutilis Clear, Thicken Up Clear and Thick and Easy Clear -powder

Measure out the amount of powder that corresponds to the degree of thickening into an empty glass or bowl. Always use the measuring device and instructions supplied with the package. Gradually add liquid to the powder and mix immediately until the powder is completely dissolved. Let the mixture thicken for 1–2 minutes. Milk-based liquids may thicken more slowly. Serve.

- *Nutilis Clear* ► 1 measure = 3 g
- *Thicken Up Clear* ► 1 measure = 1,2 g
- *Thick and Easy Clear* ► 1 measure = 1,4 g

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Table 1. Dispense the thickening powder according to the manufacturer's instructions.

Nutilis Clear, Thicken Up Clear	**Juice soup-like consistency**	**Kissel-like consistency**	**Jelly-like consistency**
200 ml liquid (water, juice, milk, coffee...)	1 measuring spoon	2 measuring spoons	3 measuring spoons
Thick & Easy Clear	**Juice soup-like consistency**	**Kissel-like consistency**	**Jelly-like consistency**
200 ml liquid (water, juice, milk, coffee...)	2 measuring spoons	4 measuring spoons	6 measuring spoons

Nutrilon Nutriton – thickening powder

Always follow the instructions on the package when using the product.

Nutrilon Nutriton (135 g jar) thickener can be added to water, breast milk, infant formula or follow-on formula. The product is not intended for premature infants weighing less than 1800 g.

In cases of breastfeeding, boil 25 ml of water and cool it to about 40 °C. Add one level measuring spoon (= 1.7 g) of *Nutrilon Nutriton* powder to the water and mix well. Let the solution thicken for approximately 3 minutes. Use a spoon to give the child small amounts before breastfeeding.

When mixing with breast milk or other nutritional drinks, add one level measuring spoon (= 1.7 g) of *Nutrilon Nutriton* powder per 100 ml of approximately 40 °C liquid. Shake until the powder is completely dissolved. Let the drink thicken for approximately 7 minutes. Check the temperature of the drink before serving it and only prepare the required portion each time.

APPENDIX 22. Starting enteral nutrition for adult in-patients

- Request a consultation with a nutritionist before starting enteral nutrition, and within 2–3 days of the start at the latest.
- Ensure that the ward is equipped with the equipment needed for enteral feeding (nasogastric or nasojejunal tube, enteral access device, feeding tube to a nutrition port, syringes, enteral nutrition pump).
- The correct location of the nasogastric and nasojejunal tube must be verified before starting enteral feeding. The correct location is ensured according to the practice in the care unit, e.g. by means of an X-ray examination, which is the only absolutely reliable method. The location of a nasogastric tube can also be confirmed by pH measurement.
- Prior to starting nutritional care, assess the risk of refeeding syndrome in patients with malnutrition and prevent the development of the condition in high-risk patients (see Refeeding syndrome p. 156).
- Always ensure functioning of the nasogastric tube prior to administering the nutrition product by drawing at least 20 ml of water into the syringe and then cautiously aspirating the gastric content into the water. Once the gastric content is visible, push the contents of the syringe back into the stomach. The functioning of the other feeding tubes is ensured by injecting at least 30 ml of water into the tube before starting enteral nutrition.
- Start enteral nutrition with a basic enteral nutrition product containing fibre (1 kcal/ml).
- Dispense the nutrition product at room temperature.
- Start administering the product with the enteral nutrition pump according to the table below.
- Rinse the tube and the enteral access device with lukewarm water (50–100 ml/rinse) before and after administering the nutrition product and whenever enteral nutrition is interrupted. During a continuous drip, add water to the tube and enteral access device every 4–6 hours, at least 50–100 ml per rinse.
- The enteral nutrition product contains approximately 80% water, which must be taken into account when assessing the patient's fluid requirement and intake.
- Assess the patient's need for additional fluids. Additional fluids may be administered into the feeding tube, intravenously or using both routes, or orally if this is safe.
- If possible, ensure that the patient is in at least a semi-reclining position during administration of the enteral nutrition product and for 30–45 minutes after administration.
- When attached to the enteral access device, enteral nutrition product in an open package can be used for 24 hours when kept at room temperature. Product that has been detached from the enteral access device can be stored in a refrigerator for 24 hours. Let a product taken from the refrigerator warm up to room temperature before administration.
- Change the access control device daily. When rinsed well, the feeding tube connected to the nutrition port can be used for 5–7 days.
- Always wash and disinfect your hands before dispensing the enteral nutrition product and handling the equipment required for enteral nutrition.
- Following the instructions on starting enteral nutrition prevents problems related to enteral nutrition.

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Table. Starting enteral nutrition and assessing the need for additional fluids in adult patients.

	Product	Dispensing rate	Amount of energy provided by the product (kcal)[1]	Amount of fluid in the product (ml)[2]	Additional fluids, 20–54 y. 80 kg (ml/day)[3]	Additional fluids, ≥55 y. 80 kg (ml/day)[3]
Day 1	Basic product containing fibre (1 kcal/ml)	20 ml/h 16 h/day 8 h break at night	300	250	2650	2250
Day 2	–"–	40 ml/h 16 h/day 8 h break at night	650	500	2400	2000
Day 3	–"–	60 ml/h 16 h/day 8 h break at night	950	750	2150	1750

1 Rounded to the nearest 50 kcal

2 Rounded down to the nearest 50 ml

3 Basic fluid requirement: 35 ml/kg for 20–54-year-olds; 30 ml/kg for ≥55-year-olds. The total volume of fluid per day includes all fluids taken orally by the patient, fluids added to the feeding tube, and any intravenous fluids. A total of 100 ml has been added to the calculated need for additional fluid due to the fibre content of the enteral feeding product.

APPENDIX 23. Estimating carbohydrate amounts in foods in order to determine meal-specific insulin doses

For diabetics who use rapid insulin, determining the need for insulin based on carbohydrates in the meal (reconciling the amount of carbohydrate in the meal with the dose of insulin) is an effective method of controlling blood sugar balance. Randomised controlled studies in adults with type 1 diabetes have shown that meal-specific estimation of carbohydrates can improve blood sugar control, quality of life and overall well-being without increasing the adverse effects (severe hypoglycaemia, weight gain and a rise in blood lipid values). If necessary, patients should receive support and guidance related to estimating carbohydrate content.

<table>
<tr><th>Estimating the amount of carbohydrates in food</th><td>2/3 dl cooked cereal dish or rice or pasta</td><td>2–3 dl fresh berries</td><td>1 dl berries, purée or defrosted</td><td>1 medium-sized piece of fruit</td></tr>
<tr><td>1 egg-sized potato</td><td colspan="3" rowspan="2">EACH SERVING CONTAINS APPROXIMATELY 10 G OF CARBOHYDRATES</td><td>1 glass (2 dl) of milk or buttermilk</td></tr>
<tr><td>3–4 dl grated root vegetable</td><td>1 dl low-sugar dessert</td></tr>
<tr><td>3 dl root grate</td><td>1 dl casserole</td><td>1 dl porridge or cereal or 2 tbsp muesli</td><td>1 thin slice of bread (20 g) or 1 piece of crisp bread</td><td>1 thin slice of sweet bread or half a small sweet bun or 1 filled cookie</td></tr>
</table>

Additional information

Finnish Diabetes Association. Tips for estimating the amount of carbohydrates (in Finnish) https://www.diabetes.fi/terveydeksi/syominen/hiilihydraattitaulukko

Finnish Diabetes Association. Amount of carbohydrates by product group (in Finnish) https://www.diabetes.fi/terveydeksi/syominen/hiilihydraattitaulukko#Hiilihydraattienmrtuoteryhmittiin

Sources:

Finnish Diabetes Association 2021. Tyypin 1 diabetes ja joustava insuliinihoito - pistoksin tai pumpulla (Type 1 diabetes and flexible insulin treatment – using injections or a pump). Available at Finnish Diabetes Association online shop (https://d-kauppa.diabetes.fi/) (in Finnish)

Thibault R, Abbasoglu O, Ioannou E et al. ESPEN guideline on hospital nutrition. Clin Nutr 2021; 40: 5684–5709

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Bell KJ, Barclay AW, Petocs P et al. Efficacy of carbohydrate counting in type 1 diabetes: a systematic review and meta-analysis. Lancet Diabetes and Endocrinology 2014; 2(2):133–40

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Sääksjärvi K ja Reinivuo H. Ruokamittoja. Kansanterveyslaitos. Ravitsemusyksikkö. Helsinki, 2004 https://urn.fi/URN:ISBN:951-740-462-X (in Finnish)

APPENDIX 24. Suitable ingredients for patients with severe multiple allergies

Form a. Children

SUITABLE INGREDIENTS – CHILDREN WITH MULTIPLE FOOD ALLERGIES

Description: Suitable foods are recorded on the form. The list is attached to an Individual or ALLERGY-LIFE-THREATENING food order when the patient has more than five (5) food allergies/restrictions. Life-threatening ingredients are indicated at the beginning of the list.

Name: _____ Date: _____

Date of birth: _____ Ward: _____

Special diet: _____

MARK X= suitable **AND CIRCLE C** = if the ingredient is only suitable when cooked/heated.

LIFE-THREATENING: _____

Milk

- ☐ breast milk C
- ☐ infant formula_____
- ☐ follow-up formula_____
- ☐ cow's milk C
- ☐ cheeses
- ☐ sour milk products
- ☐ soya drink
- ☐ oat drink
- ☐ rice drink
- ☐ other_____

Cereals

- ☐ oat
- ☐ wheat
- ☐ rye
- ☐ barley
- ☐ rice white/wholegrain
- ☐ corn
- ☐ buckwheat
- ☐ millet
- ☐ gluten-free flour mixture
- ☐ amaranth
- ☐ quinoa
- ☐ tapioca (used for thickening)
- ☐ other_____

Meat, fish and eggs

- ☐ pork
- ☐ beef
- ☐ chicken
- ☐ grain chicken (jyväbroileri)
- ☐ turkey
- ☐ elk, red deer
- ☐ reindeer
- ☐ lamb
- ☐ fish
- ☐ eggs
- ☐ whole meat cold cuts_____
- ☐ sausage_____
- ☐ liver
- ☐ other_____

Vegetables

- ☐ sweet potato C
- ☐ pea C
- ☐ courgette C
- ☐ Chinese cabbage
- ☐ cauliflower C
- ☐ cucumber
- ☐ pumpkin C
- ☐ rutabaga C
- ☐ corn C
- ☐ eggplant C
- ☐ turnip C
- ☐ parsnip C
- ☐ bell pepper C
- ☐ broccoli C
- ☐ beans, lentils C
- ☐ parsley C
- ☐ potato
- ☐ spinach C
- ☐ carrot C
- ☐ beetroot C
- ☐ radish C
- ☐ lettuce
- ☐ celery C
- ☐ mushrooms C
- ☐ onions C
- ☐ dill
- ☐ tomato C
- ☐ white, red cabbage C
- ☐ other_____

Fats

- ☐ vegetable oil_____
- ☐ dairy-free margarine
- ☐ ordinary margarine

Berries

- ☐ boysenberry C
- ☐ blackberry C
- ☐ cranberry C
- ☐ gooseberry C
- ☐ cloudberry C
- ☐ strawberry C
- ☐ blackcurrant C
- ☐ blueberry C
- ☐ redcurrant C
- ☐ lingonberry C
- ☐ rosehip C
- ☐ raspberry C
- ☐ other_____

Fruit

- ☐ pineapple C
- ☐ orange C
- ☐ apricot C
- ☐ banana
- ☐ honeydew melon
- ☐ kiwi fruit C
- ☐ cherry C
- ☐ plum C
- ☐ mango C
- ☐ apple C
- ☐ peach C
- ☐ pear C
- ☐ rhubarb
- ☐ satsuma
- ☐ lemon
- ☐ watermelon
- ☐ grape
- ☐ other_____

Others

- ☐ yeast
- ☐ baking powder
- ☐ baking soda
- ☐ potato flour
- ☐ yeast extract
- ☐ spices
- ☐ soya
- ☐ chocolate
- ☐ nuts, almonds
- ☐ seeds, such as sesame
- ☐ honey
- ☐ other_____

Source: Kuopio University Hospital (KYS)

ELECTRONIC FORM are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

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Form b. Adults

SUITABLE INGREDIENTS – ADULTS WITH MULTIPLE FOOD ALLERGIES

Description: Suitable foods are recorded on the form. The list is attached to an Individual or ALLERGY-LIFE-THREATENING food order when the patient has more than five (5) food allergies/restrictions. Life-threatening ingredients are indicated at the beginning of the list.

Name: _____ Date: _____

Date of birth: _____ Ward: _____

Special diet: _____

MARK X= suitable **AND CIRCLE C** = if the ingredient is only suitable when cooked/heated.

LIFE-THREATENING: _____

Milk

- ☐ cow's milk C
- ☐ cheeses
- ☐ sour milk products
- ☐ soya drink
- ☐ oat drink
- ☐ rice drink
- ☐ other_____

Cereals

- ☐ oat
- ☐ wheat
- ☐ rye
- ☐ barley
- ☐ rice white/wholegrain
- ☐ corn
- ☐ buckwheat
- ☐ millet
- ☐ gluten-free flour mixture
- ☐ amaranth
- ☐ quinoa
- ☐ tapioca (used for thickening)
- ☐ other_____

Meat, fish and eggs

- ☐ pork
- ☐ beef
- ☐ chicken
- ☐ grain chicken (jyväbroileri)
- ☐ turkey
- ☐ elk, red deer
- ☐ reindeer
- ☐ lamb
- ☐ fish
- ☐ eggs
- ☐ whole meat cold cuts_____
- ☐ sausage_____
- ☐ liver
- ☐ other_____

Vegetables

- ☐ sweet potato C
- ☐ pea C
- ☐ courgette C
- ☐ Chinese cabbage
- ☐ cauliflower C
- ☐ cucumber
- ☐ pumpkin C
- ☐ rutabaga C
- ☐ corn C
- ☐ eggplant C
- ☐ turnip C
- ☐ parsnip C
- ☐ bell pepper C
- ☐ broccoli C
- ☐ beans, lentils C
- ☐ parsley C
- ☐ potato
- ☐ spinach C
- ☐ carrot C
- ☐ beetroot C
- ☐ radish C
- ☐ lettuce
- ☐ celery C
- ☐ mushrooms C
- ☐ onions C
- ☐ dill
- ☐ tomato C
- ☐ white, red cabbage C
- ☐ other_____

Fats

- ☐ vegetable oil_____
- ☐ dairy-free margarine
- ☐ ordinary margarine

Berries

- ☐ boysenberry C
- ☐ blackberry C
- ☐ cranberry C
- ☐ gooseberry C
- ☐ cloudberry C
- ☐ strawberry C
- ☐ blackcurrant C
- ☐ blueberry C
- ☐ redcurrant C
- ☐ lingonberry C
- ☐ rosehip C
- ☐ raspberry C
- ☐ other_____

Fruit

- ☐ pineapple C
- ☐ orange C
- ☐ apricot C
- ☐ banana
- ☐ honeydew melon
- ☐ kiwi fruit C
- ☐ cherry C
- ☐ plum C
- ☐ mango C
- ☐ apple C
- ☐ peach C
- ☐ pear C
- ☐ rhubarb
- ☐ satsuma
- ☐ lemon
- ☐ watermelon
- ☐ grape
- ☐ other_____

Others

- ☐ yeast
- ☐ baking powder
- ☐ baking soda
- ☐ potato flour
- ☐ yeast extract
- ☐ spices
- ☐ soya
- ☐ chocolate
- ☐ nuts, almonds
- ☐ seeds, such as sesame
- ☐ honey
- ☐ other_____

Source: Kuopio University Hospital (KYS)

ELECTRONIC FORM are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

APPENDIX 25. Meal aids

During patient meals, an environment that supports meals and good meal posture are ensured. The meal situation should be guided verbally and physically and by assisting the patient with meals as needed based on the individual situation. Assistive devices can facilitate eating and drinking, and also make it easier to cook and the handle objects (for example, opening cans). During inpatient care, it is important for the patient to practise using the aids they need based on their situation. The patient also needs information about purchasing suitable assistive devices suitable for use at home and guidance regarding how to use them.

Patients who need meal aids must receive occupational therapy guidance at the hospital and the further treatment location and for coping at home. The key element in occupational therapy involves enabling a successful meal situation for the patient, which includes realisation of adequate nutrition, enjoyment and social interaction as equal objectives.

Aids that facilitate meals include:

- thick-handled utensils or padded utensil grips that make it easier to hold ordinary utensils
- light utensils for people with reduced strength
- heavy utensils when tremors interfere with eating or there is a loss of sensation in the hand
- smart spoon that compensates for hand tremors while eating
- various cups make it easier to drink in bed or when strength is reduced or a person has hand tremors (cup with spout, cup with handle, cup with nose opening, valve cup, cups of different weights)
- plates of different shapes and with different edges make it easier to perceive food and dine, for example, when eating with one hand
- self-heating plates
- non-slip surfaces, for example, to keep the plate in place
- pouring handles make it easier to pour a drink from a milk carton or drink bottle
- utensil holders (for example, multipurpose strap) allow eating even when a person's fingers are not functioning
- adjustable tables (height and tilt adjustment) improve the eating position in a wheelchair or bed and thus facilitate swallowing

Source: Turku University Hospital (Tyks)/Occupational therapy

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Various meal aids

APPENDIX 26. Issues to consider when feeding a patient

**Remember that eating and feeding are interactive processes!
Eating should make a person satisfied and happy.**

Feeding a child

In the case of a special needs child, the necessary feeding instructions may have been prepared. Ask the parents or another person who knows the child well to explain the instructions so that you can take the child's special needs into account when feeding them. Any aids that are required should also be available during the meal situation.

The feeding chair must be suitable for the child's motor skills and other needs. The hips, knees and ankles of a child with a physical disability must be at a 90° angle and their legs must be resting firmly on a surface. The position should be mid-line, the head in a neutral position or bent slightly forward. The hands should be on the table even if the child is being fed. If the child eats independently, the chair must fit at the table so that the child's feet are under the table. The utensils must correspond to the size of the child's mouth. For example, a spoon should fit inside the dental arch so that the child can close their mouth with the spoon in it, and the cup should have a small opening. There must be enough light for the child, and the goal is for the child to see the food and sit with other children or with the family at the table, not alone.

Feeding young people, adults and older persons

The patient should be able to wash their hands, use the toilet and receive dry incontinence protection before their meal. If the patient uses dentures, a hearing aid, glasses or other assistive devices, they should have access to these during the meal. Dentures must fit well.

The objective is for the patient to eat by themselves. However, some patients will need feeding assistance or need to be fed. Adults should also sit firmly or be supported with pillows in an upright position when eating. Consider possible side differences in position and when feeding a person. The food tray or plate should be placed a suitable distance in front of the person being fed so that the food does not spill on them. For example, assistance can be provided so that the patient and nurse both have a fork or spoon that they use in alternation.

If the patient can chew successfully, solid food is a safer choice than liquid food – particularly for people with swallowing problems. Purée or liquid food should not be served without a reason.

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CHECKLIST FOR THE PERSON FEEDING A PATIENT

- Allow sufficient time for feeding and concentrate on it. Feeding can be a slow process, and the risk of aspiration may increase if you rush the patient. Take good breaks between mouthfuls of food.
- Sit at the same height as the person being fed so that you have eye contact with them.
- Feed the patient small mouthfuls slowly, and preferably alternate between food and drink. Be careful not to spill food or drink.
- Speak as little as possible, but tell the patient what food you are putting in their mouth.
- Do not mix foods together on the plate.
- Use a napkin to regularly wipe an adult's mouth, but only wipe a child's mouth at the end of the meal.
- Check the temperature of the food and cover it if necessary to prevent it from cooling down too much.
- Take any special needs (for example, the need to thicken fluids) into account when feeding the patient.

APPENDIX 27. Use of a pancreatic enzyme product in enteral nutrition patients

Pancreatic enzyme capsules dissolve in the stomach, after which the granules inside the capsules are released and mix with food. The granules are protected by a gastro-resistant coating, which only breaks down in the duodenum when pH exceeds 5.5.

The following must be taken into account in enteral nutrition:

- the diameter of the feeding tube (risk of tube clogging)
- location of the end of the feeding tube (small intestine or stomach)
- feeding method (continuous or portion feeding)

1. Feeding tube into the duodenum or jejunum

a. The enzyme product is activated by opening the capsule, crushing the granules well and mixing them with an **alkaline** substance, such as sodium bicarbonate (baking soda).
b. This ensures there is very little loss of enzyme activity and should be taken into account when determining the product dose.
c. 10,000 lipase units require 800 mg of sodium bicarbonate (10 ml of 8.4% sodium bicarbonate solution) OR 1/4 teaspoon baking soda + warm water.
d. Alternatively, the uncrushed granules can be mixed with sodium bicarbonate solution and allowed to stand for 20 minutes to break the capsule's gastro-resistant coating.
e. Rinse the feeding tube with water before and after administering the pancreatic enzyme product.
f. The activated enzyme preparation can be administered directly using a syringe or mixed with an enteral nutrition product.

2. Feeding tube into the stomach

a. Open the pancreatic enzyme capsule
b. Mix the granules with a slightly thick **acidic** liquid, such as juice/nectar (the granules will clog the tube when mixed with water)
c. Rinse the feeding tube with water before and after administering the granules.

   Instructions:

   1. Collect the necessary equipment: a sufficient dose of enzyme capsules, syringe, small clean mixing container, 50–100 ml of thick, nectar-type fruit juice, water.
   2. Open the capsules and place them in a container, then add enough fruit juice to cover the granules well. Mix thoroughly, but gently.
   3. Discontinue the enteral nutrition and rinse the tube with water.
   4. Pour the granule-fruit juice mixture into the syringe and add the mixture to the feeding tube with slow and gentle pressure.

d. Rinse the tube and continue enteral nutrition.

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Note: Use of an acid blocker is often recommended to optimise functioning of the enzyme product.

Note:

- Preferably administer the enzyme preparation during meals, but within 30 minutes of the beginning or end of a meal.
- Calculate the amount of daily fat intake. A good starting dose is 1,000 units/1 g of fat (normal pancreatic enzyme dose: 500–4,000 units/1 g fat or 25,000–50,000 units/meal).
- In continuous enteral nutrition, the pancreatic enzyme product is administered every 2–3 hours.
- Store the enzyme products in a cool (below 25 ° C) and dry place.
- The dose can be increased if its seems insufficient.

The alternative to a pancreatic enzyme product is use of hydrolysed enteral nutrition products with high MCT fat content.

Source: Ferrie S, Graham C and Hoyle M. Pancreatis entzyme supplementation for patients receiving enteral feeds. Nutr. Clin Pract 2011; 26(3):349–51

APPENDIX 28. Screening for sarcopenia (SARC-F-questionnaire)

Description: Do you have difficulties performing the following daily functions? Estimate the degree of difficulty for the last week.

• How much difficulty do you have in lifting and carrying 5 kilograms?

None	☐ 0 points
Some	☐ 1 point
A lot/unable	☐ 2 points

• How much difficulty do you have walking across a room?

None	☐ 0 points
Some	☐ 1 point
A lot/use aids/unable	☐ 2 points

• How much difficulty do you have getting out of a chair or bed?

None	☐ 0 points
Some	☐ 1 point
A lot/I need help	☐ 2 points

• How much difficulty do you have climbing a flight of ten stairs?

None	☐ 0 points
Some	☐ 1 point
A lot/unable	☐ 2 points

• How many times have you fallen in the past year?*

None	☐ 0 points
1–3 falls	☐ 1 point
4 or more falls	☐ 2 points

Total SARC-F score: ____ / 10

4 points or more, indicates sarcopenia

* The assessment of this issue does not affect the reliability of the test and can be omitted if desired.

Adapted from: Malmstrom TK, Morley JE. SARC-F: A Simple Questionnaire to Rapidly Diagnose Sarcopenia. JAMDA 2013; 14:531–2. DOI: 10.1016/j.jamda.2013.05.018.

ELECTRONIC FORM are available only in Finnish: https://www.ruokavirasto.fi/elintarvikkeet/terveytta-edistava-ruokavalio/ravitsemus--ja-ruokasuositukset/ravitsemushoito/

APPENDIX 29. Criteria for cachexia

Criteria for cachexia when the patient has a chronic disease, excluding cancer

The patient has unintentionally lost weight over a period of 12 months or in relation to disease*	**Degree of cachexia**
>5% but <10%	Mild
≥10% but <15%	Moderate
≥15%	Severe

The patient also meets at least 3 of the following criteria.

- **Reduced muscle strength:** hand grip strength in the lowest tertiary (the manufacturer's age group scale), lowest hand grip strength category (the manufacturer's age group scale)
- **Fatigue**
- **Anorexia:** Food intake <20 kcal/kg or <70% of normal
- **Low FFM Index:** Men <17 kg/m^2, women <15 kg/m^2 or MAMC: Men <25 cm, women <19 cm (<10 percentile)
- **Laboratory tests:** CRP >5 mg/l
  Hb <120 g/l, albumin < 32 g/l
  (IL-6 >4.0 pg/ml)

FFM = fat-free mass, MAMC = mid-arm muscle circumference

* If weight loss cannot be determined, BMI < 20.0 kg/m^2 is sufficient

Criteria for identifying and treating different degrees of cancer cachexia

	Pre-cachexia	**Cachexia** (wasting disease)	**Refractory cachexia**
Criteria	Weight loss* ≤5 % Anorexia Metabolic changes** Chronic disease***	Weight loss* >5 % OR BMI < 20 kg/m^2 and weight loss* >2 % OR Sarcopenia**** and weight loss* >2 %	Catabolic disease that does not respond to treatment, life expectancy <3 months
Nutritional care	Nutrition counselling, enriched diet, oral nutritional supplements	Oral nutritional supplements or enteral nutrition to ensure adequate energy and protein intake	Symptomatic treatment, relieving the feeling of thirst and hunger and the patient's anxiety

* Unintentional weight loss
** For example, impaired glucose tolerance, hypoalbuminaemia, anaemia associated with inflammation
*** Cancer, COPD, chronic heart, kidney or liver failure, AIDS, rheumatoid arthritis
**** See Appendix 28

Source: Fearon K, Strasser F, Anker SD et al. Lancet Oncol 2011; 12:489-95
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APPENDIX 30. Ingredient selection for gastrointestinal patients (for SUOLIRV and MASU diets)

	Recommended	Should be avoided
Vegetables	Cooked, purée or finely grated. Potato in different forms. Food may contain small quantities of cooked onion. Peeled cucumber. Tomatoes without the peel.	Raw vegetables and root vegetables. Cabbage, sweet potato, turnip, radish, bell pepper, peas, beans, lentils, mushrooms, raw onion, garlic, asparagus. Nuts and almonds.
Fruit and berries	As a purée, juices and strained kissels. Soft fruit as such, for example, banana, melons (not watermelon). Citrus fruits only in juice form.	Dried fruit. Fruit peels and membranes. Berries that have large seeds or hard peels. Watermelon.
Cereal products	Porridges and gruels. Low-fibre cereals and breakfast flakes. Crispbread, toasted bread or bread that is a few days old. Cream crackers, rusks, bagels and slices of sponge cake served with coffee. Low-fibre rice and pasta (Fibre <3 g/100 g).	Muesli, grains, seeds and bran. Bread containing whole grains or groats. Fresh bread and sweet bread. Wholegrain pasta, rice and other wholegrain side dishes (Fibre ≥3 g/100 g).
Meat, fish, poultry, eggs and plant protein sources	Lean meat that is tender and well cooked. Fish and eggs in different forms. Whole meat cold cuts and sausages without casing. Soya products, quorn products and oat products.	Meat that is tough, has a casing or high fat content, is fried or strongly flavoured. Fish containing bones. Pea and fava bean products.
Dairy products and plant-based drinks and products used in a similar way.	Lactose-free dairy products. Plant-based drinks and products (e.g. soya, oat and rice).	Ordinary dairy products containing lactose.
Others	Plant-based dietary fats in moderation.	Foods and beverages with high sugar content. Sugar alcohols
Beverages	Water	Carbonated beverages

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Chapters 1–11

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Guidelines for nutritional care

Nutritional care is an important part of supporting recovery from diseases and rehabilitation. It is a key form of treatment for many diseases and the only treatment in some cases. Good nutritional care reduces the need for other treatment actions and promotes the effectiveness and impact of other treatment. It may also reduce the need for pharmacotherapy and shorten the length of highly specialised care.

The aim of the guidelines for patients' nutritional care and offered meals are to describe the nutritional care process as a seamless entity in which food services and institutional maintenance are linked to the care process. The publication contains information and instructions as well as assessment and monitoring tools related to developing and implementing nutritional care in the new service system.

These new guidelines are based on international recommendations and guidelines, research data in the fields of clinical nutrition and medicine, and good practices. The guidelines are intended for everyone who guides, plans and participates in a patient's nutritional care or the implementation of food services in public and private social and health care services. It can provide the basis for preparing more detailed organisation-specific instructions for nutritional care and service descriptions related to food services.

The guidelines for nutritional care are also suitable as a textbook for universities and universities of applied sciences. The guidelines for nutritional care have been produced by the National Nutrition Council and the Finnish Institute for Health and Welfare in cooperation with a wide-ranging expert panel on nutritional care.

DIRECTIONS 5/2023

Finnish institute for health and welfare

VRN National Nutrition Council