Finnish institute for health and welfare

DIRECTIONS

Vitality in later years

– food recommendation for older adults

National Nutrition Council • Finnish Institute for Health and Welfare (THL)

9 | 2020

Directions 9/2020

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VRN National Nutrition Council

Finnish institute for health and welfare

Published by: National Nutrition Council and Finnish Institute for Health and Welfare
Publisher: Finnish Institute for Health and Welfare

Photographs:
Bigstock
Gerontologinen ravitsemus Gery ry
Kuopio University Hospital/Photographer Riikka Myöhänen, food: Servica Oy
Service Centre Helsinki/Photographer Petteri Hautamaa, food: Tarja Heikkinen
Pirkanmaan Voimia Ltd
Finnish Dental Association
National Nutrition Council
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Viestintävalkea Oy/Photographer Eero Kokko

Translation: Lingsoft Language Services Oy
Graphic design and layout: Tiina Kuoppala

ISBN 978-952-343-517-9 (online publication)
ISSN 2323-4172 (online publication)
http://urn.fi/URN:ISBN:978-952-343-517-9

Content

FOREWORD

The Food Recommendation for Older Adults is a joint publication from the National Nutrition Council and the Finnish Institute for Health and Welfare (THL) The publication is intended to serve as a national quality recommendation that defines how to support the nutrition of older adults and organise high-quality food services based on the needs of older people and promote eating together. The recommendations are based on the Finnish nutrition recommendations for adults (Terveyttä ruoasta) and research evidence related to the clinical aspects. It targets operators responsible for providing food services for the older people in public and private social and health care, home services, residential care, nursing home and rehabilitation units, as well as those responsible for tendering, decision-makers and students in the field as well as older people. Compliance with these food recommendations should be required in the tendering, procurement and contracts that apply to the provision of food services for older people. This recommendation replaces the previous publication Nutritional Recommendations for Older People (2010).

The food recommendation is intended to serve as a guide for food selection and eating that promote health and well-being as retirement age approaches, thus laying the foundation for maintaining health and functional capacity until a high age. Activities that comply with the recommendation promote the health, functional capacity and quality of life of older people. They speed up recovery from disease and shorten hospital stays, thus reducing the cost of medication and treatment. Good nutrition also improves the possibilities to live at home for a longer time.

The population in Finland is ageing rapidly. In 2018, 1 in 10 people had reached the age of 75. The number of people aged 75 or over is expected to double by 2040. Nine out of 10 people aged 75 or over live at home, including clients receiving informal care allowance (5%) and regular home care (11%). In 2018, 8% of those aged 75 or over lived in sheltered housing and 1% in institutional care at homes for older people or the inpatient ward of health centres. The number of persons in institutional care has decreased during the past 10 years.

The national goal is to increase the number of healthy years of life, improve functional capacity, enable continued living at home for as long as possible, and provide services that function in a timely and efficient manner. Finland has succeeded in extending life expectancy, and the majority of older persons live a functional and independent life in a familiar environment. Many different preventive measures are in place, including the actions to encourage health-promoting nutrition and physical activity. The municipalities' own measures for promoting the well-being and health of the older population, which are supported by organisations and the third sector, play a key role in this work.

The Act on Supporting the Functional Capacity of the Older Population and on Social and Health Care Services for Older Persons (980/2012), later referred to as the Act on Care Services for Older Persons, and the Social Welfare Act (1301/2014) form the key legislation basis for services for older people. The Act on Care Services for Older Persons (for which Government proposal 4/2020 has been issued) contains provisions on services to enhance well-being, which must include counselling on health-promoting lifestyles and promoting functional capacity. Particular attention should be paid to those older people whose living conditions or life situation are considered to involve risk factors that increase the need for services, such as a deviation in nutritional status or signs of malnutrition that impair functional capacity.

The proposal for the new Act on Care Services for Older Persons includes a regulation on uniform national monitoring and evaluation indicators for determining and assessing service needs. The RAI system, which also takes basic nutritional matters into account, has been identified as the best tool to support the assessment of service needs and develop the quality of services. The RAI system has also been included in this food recommendation as the foundation for assessing an older person's need for support services and care.

The new Act on Care Services for Older Persons contains provisions on staffing levels in residential care units. According to the Act, direct client service includes tasks related to the care, attention and rehabilitation of residents/clients, tasks to promote and maintain functional capacity and rehabilitation as well as daily recording, assessment of service needs and updating the care and service plan. As a result, the meals, assessment and monitoring of nutritional status, and nutritional care of residents as well as recording the related information can be considered direct client service. On the other hand, the proposal classifies food preparation, such as the heating of food for all diners, as indirect work performed by support service personnel that cannot be included in direct client work. Ensuring good nutrition for older people requires that staff working in direct client service and support services have the knowledge and skills required by their job to handle meals for older persons.

The key principle of the Act on Care Services for Older Persons is for services to support the well-being, health and functional capacity of an older person. Health-promoting and appealing food as part of these services supports implementation of the principles of the act. Under the Act, long-term care and attention should primarily be organised as services provided at the client's home and with other outpatient social and health care services. As a result, meals on wheels or food services accessible from the home must be ensured in a high-quality and client-oriented manner. The Social Welfare Act, as a general act in the social sector, defines the services that must be offered to older people, such as meals on wheels and the related support services as well as housing and institutional services. This includes the care and attention required by the client and, for example, meals.

At best, the food served and meal situation are a joy and pleasure for older people and a highlight of their day-to-day life. In addition to its nutritional impacts, food also affects health and well-being in many other ways. Eating together with family, friends and peers whenever possible maintains social relationships and mental vitality. Eating together may also involve purchasing and preparing food with someone else as well as activities that maintain independent functional capacity. Eating with company is meaningful and makes the food taste good.

When planning and implementing food services, it is important to highlight the older persons as active influencers and offer different opportunities for inclusion according to their functional capacity. The eating environment must be accessible, pleasant and calm. Older people want alternative services and individual choices for their meals, both in terms of food and the place where they eat. This helps to preserve their right to self-determination and a sense of community for as long as possible, regardless of where they live.

These food recommendations were compiled by an expert panel appointed by the National Nutrition Council (12 April 2018–31 March 2020). The group was chaired by Professor Ursula Schwab and the secretary was Docent Irma Nykänen. The other members of the group are presented in the list below. The National Nutrition Council would like to thank the members of the expert panel for their valuable work related to writing this recommendation and compiling the tools, descriptions of good practices, photographs and other material that are now made available in the publication. The National Nutrition Council would also like to express its gratitude to the team members' own organisations for supporting this work and participation in multiprofessional background and team work.

The National Nutrition Council organised an open targeted round of commenting on the draft recommendation in November–December 2019. Comments were received from 74 different organisations and individuals. The Council would like to thank these parties for their useful comments and contributions to refining the content of the recommendation. According to the feedback, this recommendation is a highly anticipated guide, especially with regard to organising meals on wheels and home care for older people as well as meals and nutritional care in residential nursing and care services. The guidelines in the food recommendation help with the implementation of functions as well as their monitoring, guidance, self-monitoring and supervision by the authorities. For older people, the recommendation also serves as a source of information regarding good meals and the food services available to them.

The National Nutrition Council approved this publication as the national food recommendation for older people in February 2020.

Helsinki, 31 March 2020
National Nutrition Council of Finland

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HOW TO USE THESE RECOMMENDATIONS

Vitality in later years – food recommendation for older adults is intended for decision-makers who deal with care, nursing and food services for older people, people responsible for older people work, home and institutional care, staff working in care units and food services, as well as for older people themselves and families providing informal care. The recommendation is also suitable as a textbook for students in the field. The publication begins with general information on health-promoting meals and dietary choices as people age. The food recommendation is divided into four parts with different border colours.

PART I contains instructions on recommended food that meets the nutritional needs of older people as well as food services for older people.

PART II steers the organisation and implementation of nutritional care for older people.

PART III examines the special characteristics of nutrition for older persons and diseases that affect nutrition.

PART IV steers the procurement, tendering, public guidance, monitoring, evaluation and supervision of food services for older people.

The recommendations at the beginning of the sections or tables summarising key issues make it easier to find information. The sources contain useful additional information and descriptions of good practices. The recommended tools are summarised at the end of the publication.

▸ For decision-makers in care, nursing and food services for older people and operators responsible for procurement, monitoring and supervision

These food recommendations include all the key instructions, documents and regulations needed to describe high-quality implementation of meals and nutrition for older people in accordance with nutritional recommendations and based on clinical evidence when procuring services and making service contracts. This document can be attached to food service contracts as a description of operational quality and a quality recommendation to guide implementation. Part IV of the publication provides a detailed description of the tendering of services and planning of food procurement, compiling a call for tender, the evaluation and approval of tenders, as well as the preparation of a service contract and the monitoring, evaluation and operational supervision of its implementation.

▸ For home care and residential care staff

This publication contains key instructions and recommendations on nutrition for older people. It describes the entire nutritional care process and the professional responsibilities of the care staff. Part II contains concrete instructions for assessing, monitoring and recording nutritional status and for implementing nutritional care, including enriched and texture-modified diets and the use of oral nutritional supplements. Part III examines changes caused by ageing and the effect they have on nutritional needs as well as the impact of chronic diseases, medicines and oral health on nutrition. This part also presents information on providing meals for older persons living at home and in residential care.

▸ For food service professionals

Part I of this publication describes how high-quality meals that comply with nutrition recommendations can be implemented for older people living at home as well as those in residential care and nursing service units. It also provides examples of good food service practices and cooperation. Part I contains recommendations on meal rhythms, meals to be served, the content of home service meals, basic diet composition, portion size, and enriched and texture-modified diets. Part II provides counselling on the use of oral nutritional supplements. Part III of the recommendation contains information on the nutritional needs, disease and oral health of older people and their impact on menu design and the composition of meals.

▸ For older people and families providing informal care

These recommendations provide information on meals and dietary choices that promote health and maintain functional capacity when ageing. The information in the recommendations is also useful for families providing informal care. Part I includes instructions for selecting food and planning meals as well as alternatives to supplement food and improve its taste. The food photographs provide practical tips. Part III describes the nutritional needs of an older person and the effects that chronic diseases, oral health and medication have on eating and nutritional status. The guidelines for meals and snacks in the recommendation can be used when preparing meals at home. It also provides information on the support services that are available.

FOR THE READER

Nutrition is the foundation for health and well-being. Good nutrition maintains immunity, speeds up recovery from disease and is also important for people's psychological and social well-being. Nutrition also plays an important role in the prevention of, for example, memory disorders and cardiovascular diseases. Attention should already be focused the nutrition of our ageing population before people come within the scope of services. All older people should also have the right to good nutrition regardless of disease, limitations related to functional capacity, and memory problems.

Unfortunately, this is not always the case.

The preparation of these food recommendations began last spring. The background for this work was concerns about the care situation of older people and reports from the field about concerns related to the quality of food and practical implementation of meals in home services and residential care. Malnutrition among older people appeared to be unfortunately common. Services have been put out to tender and procurement contracts concluded without national quality criteria. Furthermore, the significance of diet as part of care for all older people has not been understood everywhere. In addition, the earlier recommendations no longer met the needs of a changing service system.

The Government stresses the importance of strengthening the well-being and functional capacity of older people. The Government Programme contains a promise that the quality and availability of nutrition services and the potential for social eating will be monitored and improved for both older people living at home and those living in care units. This is very important to the Government. This new food recommendation for elderly people is a key tool in terms of furthering these targets.

The new food recommendations for older people are intended to be a national quality recommendation that defines how to support the nutrition of older people and organise high-quality food services based on the needs of older people and also promote eating together. The publication contains recommendations for maintaining good nutritional status in older people in addition to preventing disease, determining and monitoring nutritional status and implementing nutritional care. The quality criteria and monitoring indicators provided in the recommendation are intended for self-monitoring and official supervision, regional and national monitoring and impact assessment.

I hope that everyone who is responsible for eating and nutrition among older people will adopt this recommendation and actively use it in their own work. Implementation of the recommendation will be supported, for example, with appropriations for health promotion as part of the upcoming horizontal programme on ageing and as lifestyle counselling in the related Social and Health Centre of the Future programme.

Let's work together to promote good nutrition for older persons.

Krista Kiuru
Minister of Family Affairs and Social Services

Eating together and dietary knowledge support health

GOOD NUTRITION WHILE AGEING

Recommendations

- The diet of elderly people is based on a diet that promotes health and sustainability outlined in the national nutrition recommendation[1].
- The amount of energy in the diet should correspond to energy consumption.
- The diet should be balanced and tasty. It should include vegetables, fruit, berries, wholegrain cereal products, soft fat and dairy products as well as a sufficient amount of fish, poultry, meat, eggs or vegetable protein sources such as legumes.
- The amount of salt should be kept moderate.
- If weight loss is necessary, it should happen moderately and in a manner that ensures adequate protein intake in order to minimise the reduction in muscle mass and maintain functional capacity.
- A vitamin D supplement of 10-20 µg/day is recommended for adults over the age of 75 all year round.
- The psychological and social significance of eating, interaction with other people, mood and emotions as well as social and financial factors should be taken into account when organising meals for older people.

Eating and exercise habits during adulthood are visible in the health and functional capacity of older persons. Good functional capacity helps people enjoy their retirement years in good condition. Based on research data on the health and eating habits of Finns,[2] it is important to emphasise weight management and prevention of cardiovascular disease and type 2 diabetes as retirement age approaches. In practice, this means health-promoting meals containing a wide variety of vegetables, berries and fruit, wholegrain cereal products, a moderate amount of fat that includes sufficient soft fat rather than hard fat, and low levels of salt and added sugar.

Health-promoting meals and weight management are linked to improved functional capacity in older people and may also provide protection against deterioration of memory functions. Elderly people who have an increased risk of cardiovascular diseases and type 2 diabetes will also benefit from changes in their lifestyle. In terms of functional capacity, it is also important to strengthen the muscles through physical activity and avoid major fluctuations in weight.

1 National Nutrition Council 2014. Finnish nutrition recommendations for adults (Terveyttä ruoasta – suomalaiset ravitsemussuositukset). https://www.ruokavirasto.fi/globalassets/teemat/terveytta-edistava-ruokavalio/kuluttaja-ja-ammattilaismateriaali/julkaisut/ravitsemussuositukset_2014_fi_web_versio_5.pdf. (In Finnish)

2 Finnish Institute for Health and Welfare. Ylipainoon ja lihavuuteen liittyvä sairastavuus (Morbidity related to overweight and obesity). 2019. http://urn.fi/URN:ISBN:978-952-343-336-6. (In Finnish)

Loss of muscle mass and muscle function (sarcopenia) in older people are key factors that reduce functional capacity. The most important factors in preventing sarcopenia are sufficient physical activity, good nutritional status and weight management.

There is no cure for memory disorders, so it is important to prevent them. Some memory disorders can be prevented by means of health-promoting lifestyles. One example of the significance of lifestyles in preventing memory disorders is the FINGER study conducted in Finland[3], in which counselling focusing on diet, physical activity, cognitive training and the management of risk factors for cardiovascular diseases helped to preserve cognition.

Promoting health and sustainability through meals and dietary choices

The Finnish nutrition recommendations for adults (Terveyttä ruoasta) are suitable as such for older people in good condition. Energy intake should be in balance with consumption. A total of 45–60% of the daily energy should come from carbohydrates, 25–40% from fats and 15–20% from proteins. The recommended daily intake of dietary fibre is at least 25 grams for women and at least 35 grams for men. The recommended protein intake for adults over the age of 65 is 1.2–1.4 g/kg body weight/day, which means approximately 55–90 g. Fats obtained from food should mainly be soft, unsaturated fats. Hard fats should account for less than 1/3 of total fat intake.

The recommendations on improving the diet at the population level (Table 1, p. 17) should be taken into account when planning ingredient selection for meals for older persons.

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 environmental burden caused by food. An environmentally friendly diet favours seasonal Finnish vegetables, root vegetables, legumes, mushrooms, fruit and berries in a versatile manner, and red meat in moderation. Other choices that support sustainable development include potato, cereal or a cereal side dish instead of rice, fish (especially lake fish[4,5]), vegetable oil, vegetable fat spread and tap water when thirsty. Elderly people are increasingly aware of the environment and climate change and want to promote sustainability through their dietary choices. However, the fact that older people may have eating habits and taste preferences that limit their acceptance and use of new plant protein products has to be taken into consideration. It is important to offer tasty, familiar food to people with a small or poor appetite. This also reduces food waste.

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3 Finger research project 2009–2024. https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/finger-tutkimushanke. (In Finnish)

4 Instructions provided by the Finnish Food Authority concerning the safe use of fish for elderly people and persons with weakened immunity https://www.ruokavirasto.fi/en/private-persons/information-on-food/instructions-for-safe-use-of-foodstuffs/safe-use-of-foodstuffs/. (In Finnish)

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

Table 1. Promoting health and sustainability through dietary choices that promote health and sustainability (National Nutrition Council, 2014)

Add	Replace	Cut back on
Vegetables (Especially root vegetables) Legumes (peas, beans, lentils)	Refined cereal products → wholegrain products	Meat products Red meat
Berries, fruit	Butter, butter-based spreads → vegetable oils, vegetable oil-based spreads	Drinks and foods containing added sugar
Fish and other seafood	Fat-rich dairy products → low-fat/fat-free dairy products	Salt
Nuts and seeds		Alcoholic beverages

In addition to dietary choices, reducing food waste is an effective way of preventing the environmental burden caused by food. 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. For example, the leftover lunch concept at schools provides the opportunity to sell extra food and thus add variety to the diets of older people.

Eating together and dietary knowledge support health

Tasty food, an appealing meal situation and eating together increase the pleasure of eating, encourage people to try new foods, help those with a poor appetite to eat more, and stimulate the senses. All of these elements can also have an impact on cognitive and memory functions. While studies have shown that there are many positive aspects associated with eating together, the meal rhythm, dietary choices and nutrient intake of people living alone have been identified as factors involving risks that can affect the realisation of good nutrition and health.

If there are problems in arranging meals, counselling given to an older person may spark interest in eating and making meals in a new way. The person providing counselling must be familiar with nutrition for older people. During the counselling discussion, it is important to seek alternatives in cooperation with the client. Products can be searched together on the websites of food manufacturers or stores used by the client. Alternative ingredients and cooking methods, ready-to-eat meals and seasoning them to suit personal taste preferences add ease and variety to eating. Options for meals and snacks are presented in Part 1, Table 2, p. 30.

Tips and ideas: Retirement is a major change in everyday life for anyone. The "Well-being and health survey events" that municipalities and organisations arrange for people who are retiring can provide an opportunity to check personal health habits and measure health and nutritional status. This is a chance for the municipalities and organisations can present the groups that are available and, for example, food preparation courses and volunteer activities, such as food friendship.

Classification of older persons according to functional capacity

In Finnish legislation, 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. An older person means a person whose functional capacity is impaired due to disease or injuries that have begun, increased or worsened with high age or due to degeneration related to high age. As a person ages and functional capacity deteriorates, living at home and managing everyday tasks become more difficult.

When discussing nutrition, it is more appropriate to assess older people according to their state of health and functional capacity rather than their age (Figure 1, p. 19). The food recommendations for other adults also apply to elderly people who are in good condition. On the other hand, ageing and various disease set special requirements for the food being served. Some home care clients are able to prepare their own food and have a good appetite. For people accustomed to domestic work, cooking and baking can be activating and bring meaningfulness to everyday life and provide a rhythm for the day. However, others rely on meal services and may eat very little food. The diet for people living at home emphasises a balance between energy intake and consumption as well as the nutritional quality and taste of food. Home care clients in poor condition often need special support to make meals, while those in residential care may also require assistance with eating. In this case, the significance of professional staff and their competence is emphasised when implementing nutrition for older people. Residential care is home to a greater number of older adults for whom the practice of serving preferred or favourite food and drinks more often is justified.

In all situations, meals should provide the diner with pleasure via the senses, eating together and participation. Family members often play an important role in organising balanced meals for older people.

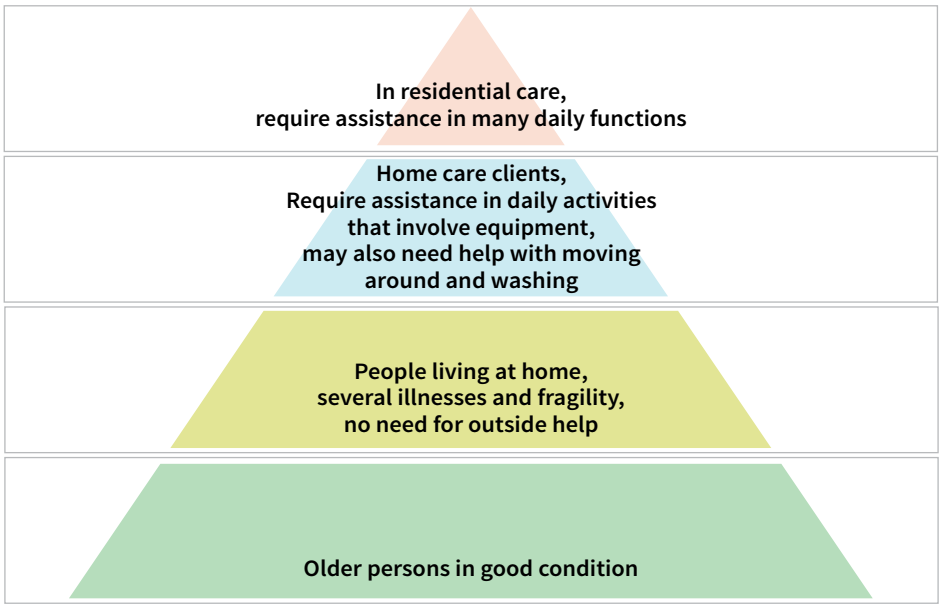

Figure 1. Grouping older persons according to functional capacity

Testing lifestyle and health habits:

- Diabetes risk test[6]
- Finnish Heart Association tests[7] (fat quality, salt, eating habits, diet, physical activity)
- Stress test[8]
- Tests to assess functional capacity and mobility[9]
- MMSE memory test[10]
- AUDIT alcohol use disorder tests[11]
- Fall risk assessment[12]

6 https://www.stopdia.fi/

7 https://sydan.fi/terveysmittaus/ (in Finnish)

8 https://apps.myzef.com/resources/mielenterveysseura/dmlr92/index.html (in Finnish)

9 https://www.voimaavanhuuteen.fi/liikuntaharjoittelu/liikkumiskyvyn-arviointi/testeja-liikkumiskyvyn-arvioimiseksi/ (in Finnish)

10 https://www.terveysportti.fi/xmedia/extra/ykt/mmse-lomake.pdf (in Finnish)

11 https://paihdelinkki.fi/en/tests/alcohol/alcohol-risks-audit

12 https://thl.fi/fi/web/hyvinvoinnin-ja-terveyden-edistamisen-johtaminen/turvallisuuden-edistaminen/tapaturmien-ehkaisy/ikaantyneiden-tapaturmat/kaatumisten-ehkaisy/kaatumisvaaran-arviointi/tyovalineita-kaatumisvaaran-arviointiin (in Finnish)

SOCIO-ECONOMIC DIMENSIONS RELATED TO MEALS AND NUTRITION

Recommendations

- Identification of older people who belong to a risk group for nutrition because of low socio-economic status, including people with low income, comorbidity, and those who have recently been widowed.
- Targeted early support services will be offered to risk groups, for example, meal, transportation and shopping services, food courses and physical activity-nutrition groups.
- Nutrition counselling should be included as part of the plan in accordance with the Act on Care Services for Older Persons.
- Ensure that people working with older adults have up-to-date information on food assistance locations and social workers are involved in planning household management for the older person.

The nutritional status, meals and nutrient intake of older persons are closely linked to health and functional capacity.

Nutrient intake is a basic daily need that must be met regardless of the socio-economic status, condition or service needs of the older person. The nutritional status, meals and nutrient intake of older persons are closely linked to health and functional capacity. Functional capacity limitations are not equally distributed in the population, and socio-economic differences also affect functional capacity among older people. Socio-economic position (for example, education, income or professional status) is linked to people's health. It has an effect on health throughout life, all the way into old age. Socio-economic position affects matters that include people's resources and opportunities to utilise information about physical activity and a health-promoting diet.

Health counselling reaches people who have a higher level of education and interest in their health better than people with a lower socio-economic status. Wealth and disposable income also affect the possibilities to buy a diverse range of food items or use food services. Income level decreases upon retirement, which can further complicate health-promoting choices, especially for people with a low income. The loss of workplace-related benefits, such as subsidised workplace meals and opportunities for physical activity, requires new skills and other resources from people who have been accustomed to those benefits.

According to the Act on Care Services for Older Persons, municipalities must provide counselling services that support the well-being, health, functional capacity and independent coping of older people. In addition, municipalities must offer health examinations, appointments or home visits that support well-being, health, functional capacity and independent coping, especially for members of the older population whose living conditions or life situation are, based on research data or general life experience, considered to involve risk factors that increase the need for services.

PART I

FOOD SERVICES FOR OLDER PEOPLE AND THE FOOD SERVED

1 Supporting good meals and nutrition for elderly people who need support and services at home

This part deals with supporting the meals and nutrition of persons who belong to the middle groups of functional capacity grouping for older persons. The need for assistance in all these groups has increased due to disease and frailness. (Figure 1, p. 19).

Recommendations

- **Living at home is promoted by regularly evaluating the nutritional status of the older person and ensuring that meals take place.**
- **Weight fluctuations, unintentional weight loss and other factors that pose a risk to good nutrition, such as disease and medication, should be identified and taken into account on an individual basis in order to safeguard nutrition.**
- **Cooperation between family members, care staff and food services as well as seamless flow of information are essential for ensuring that eating takes place.**
- **The meal service should take the client's individual needs, favourite foods and preferred products to supplement meals into consideration and, if necessary, ensures adequate assistance during the meal situation.**
- **Food often tastes better when eating together. The social aspect of a meal should be increased whenever possible.**
- **The responsibilities of different operators should be agreed and documented: assessment and monitoring of nutritional status, placing orders for grocery store and meals on wheels, selecting the right diet, monitoring that meals are eaten and diet counselling.**
- **The work units and the organisation have agreed on the division of work and responsibilities: for example, the evaluating service needs, ordering and monitoring the services as well as assessing the client's nutrition.**

The preferences and needs of older people vary with regard to services that support living at home. Older people would like to have flexible services that can be used according to changing situations. Meals on wheels to support living at home should be seen as a basic rather than a support service, consisting of various services to maintain good nutrition and meaningful meals according to the needs at any given time.

Special attention should be paid to reaching older people who live at home and are at risk of malnutrition. It is particularly important to take the situation of elderly couples into consideration and ensure that both of them have good nutrition.

When organising meals, consideration should be given to freedom of choice, meals together, the nutritional quality of meals, ensuring meals throughout the day, the possibility to visit a store, transport services and different types of food services. The food being served should taste good and look appetising. The meals also have to be nutritionally balanced.

Factors that pose a risk in terms of nutrition should be actively reviewed for all older people and individual solutions sought for them. The quality of nutrition may be jeopardised by physical or psychological symptoms and limitations, financial factors, mood, loneliness, attitudes or a lack of knowledge or skills. Special attention should be paid to reaching older people who live at home and are at risk of malnutrition. It is particularly important to take the situation of elderly couples into consideration and to ensure that both of them have good nutrition.

1.1 Services provided at home

Older people living at home should be supported for as long as it is safe in terms of their functional capacity. Services provided at home increase the possibilities to live at home longer than before. Solutions that support good eating and nutrition may consist of several different services provided by different operators. Food support services are described as part of the presentation of services for older persons. Services provided by different operators should be made available early enough to support functional capacity.

Meal services can be provided as part of home service if the client is unable to prepare food due to reduced functional capacity or state of health, or is recovering from disease or injury. Ensuring sufficient and/or balanced daily meals for the client may also require the arrangement of meal services.

Assessment of the need for meal services is made by designated employees in the organisation or unit, usually service managers or home care workers. The meal service is agreed with the client and/or their family members, and a weekly plan is prepared concerning the number of meals and special diets required.

1.1.1 Meals on wheels

In this context, meals on wheels means a meal delivered to the home of older persons living at home and/or within the scope of home care. The term meal service is used as a synonym for the meals on wheels.

The need for meals on wheels may occur unexpectedly, or the transition may be planned as the person's functional capacity declines. Meal services can be provided as part of home care and granted according to certain criteria. Private clients can also order the service without separate criteria. The meal service provider may be a public food service or a private operator.

A good meals on wheels service includes:

- easy use
- reliable delivery
- self-monitoring
- meal delivery if necessary to the client's refrigerator or heated and served
- the opportunity for continuous client feedback and its consideration during development
- clear and easy to read product descriptions
- a clearly marked meal price.

A meal on wheels usually refers to one of the main meals of the day, which as a complete meal must provide approximately one-third of the daily need for energy and nutrients. The meal must meet the minimum nutritional quality requirements (see p. 148–149), and particular attention should be paid to ensuring sufficient protein content. The energy content of the complete meal is approximately 400–600 kcal depending on the daily energy needs of the diner, with a protein content is 25–30 grams. The calculated nutritional content is the sum of the content of all meal components. The protein content of the drink and bread is approximately 7–10 g and this is included in the meal.

Meals on wheels are primarily delivered as cold ready-to-eat meals.

Features of a good meal eaten at home:

- nutritionally balanced and tasty meals
- the possibility to choose a meal from several alternatives or a single balanced and varying meal according to a rotating menu
- main dish, side dish of potato, pasta, cereal or rice, hot vegetable side dish, fresh salad, salad dressing and dessert, grain products such as bread rolls, pasties or similar served with a soup meal
- the possibility to order texture-modified meals, special diets, enriched diets and fortified foods
- the temperature is at least + 60°C for hot meals
- the temperature of meals delivered cold is below + 6°C
- good taste, appearance, texture and other features of the food increase appetite.

Home meals are primarily delivered as cold ready-to-eat meals (below +6 °C).
The advantages of a cold meal include:

- microbiological safety
- ecological considerations and cost-efficiency, when meals for several days can be delivered using the same transport
- the opportunity to choose a favourite meal from several alternatives
- the possibility to eat the food when it's hot
- a flexible transport schedule that does not determine the meal time.

The service provider informs clients of how the meal was composed to ensure sufficient energy and protein content. Home care guides clients and family members regarding how to supplement the meals with nutritionally adequate products that are suitable and tasty for each individual.

Home meals can be ordered with a modified texture. The meal is delivered according to the client's individual needs, for example, a salad can be replaced with a drink product.

Meal composition

A balanced meal is health-promoting, diverse, tasty and attractive to eat. A complete meal consists of meal components delivered by the food service (main dish, dessert), supplementary components in conjunction with eating (side dishes) and individual flavour supplements (see photo on p. 28).

HINTS

Considering the individual preferences of the diner, such as additional spices, choice of drink or where the meal is eaten, has a significant impact on ensuring that the food is eaten. Food usually tastes better with company than it does alone. Let's eat together!

Individual flavour supplements. Diners can make meal delivered to the home more suitable to their taste by adding, for example, lingonberry, pickle, a dab of fat, favourite spices, mustard, or spice sauce.

Any special diets or texture modifications are taken into consideration in food preparation without altering the sensory quality or nutrient composition of food. If necessary, the food or meal component is enriched by supplementing it with clinical products containing energy and protein (see 6.1.1) or food items (see Table 2, p. 30 and Appendix 1, p. 169). It is important for home care employees to know how to order the right diet and take individual nutritional needs into account.

According to studies, older persons living at home have an inadequate intake of polyunsaturated fatty acids, vitamin C, folate and calcium. Product development and nutritional knowledge are needed to ensure a sufficient intake of different nutrients through varying food and product choices in different meal components, main meals and snacks. This is especially important when dealing with texture-modified and special diets. Ensuring a proper diet, such as texture-modified, and taking the taste and appearance of food and the availability of favourite food items into account increases the likelihood that nutritious food will also be eaten.

Various dessert options complement the meal entity.

The home meal service only applies to one of the day's meals, which means it is important to ensure that the rest of the day's food is also available. Evaluating eating habits and, if necessary, providing clients and their family and friends with counselling concerning meals ensures the sufficiency of food and nutrient intake. An evaluation is a way to ensure a sufficient number of meals and snacks, their content and even distribution throughout the day and the length of time between meals. Table 2 summarises methods for supplementing meals and snacks and increasing their appeal.

Home care staff assist their clients with eating if necessary. The amount of support provided by home care when implementing meals varies depending on the client's functional capacity. This support can range from delivering food to supervised meal implementation or feeding. In most cases, the nurse heats and serves the client a ready-to-eat meal/meals and snacks on a daily basis. Some home care clients live in sheltered housing, in which case the sheltered home delivers meals to the client.

Table 2. Options for supplementing meals and snacks and increasing their appeal

AIM: Sufficient energy	Options to increase energy intake when weight decreases unintentionally or the need for energy has increased
Options and side dishes	When a meal has different alternatives and flavours, people tend to eat more without even being aware of it.
Add energy and flavour with soft fats	Fat-free and low-fat options are recommended for dairy products. A fat supplement to food is recommended when the energy need increases or weight decreases: vegetable oil, liquid vegetable fat products, soft fat spreads for bread (at least 60% fat), and plant-based products used like cream. Vegetable oil that has a neutral flavour and contains soft fat, such as rapeseed or canola oil, is suitable as an energy supplement for many foods, porridge and vegetables. Vegetable oils contain 100% fat and thus a lot of energy. Liquid vegetable fat products are suitable for gruels and porridges made of dairy/plant-based drinks. Products like plant-based cream and cooking cream used to balance flavour are good for food dishes, sauces and baking. Use spreads that meet the criteria for the Heart Symbol and contain more fat (at least 60%) on bread.
More energy via food preparation choices	Sauces, gratins, casseroles, potato and vegetable purées are recommended because more energy can be added with plant-based products used like dairy items and fat supplements containing soft fat (see above).
Energy from desserts	Dairy and plant-based products such as yoghurt, quark and similar products, puddings, crepes, pancakes and pastries are recommended as desserts.
A night-time snack reduces the period of fasting and increases energy intake.	Leave a small easy-to-eat portion on the bedside table at room temperature: berry or fruit porridge, berry soup, unopened tetra package of milk or plant-based drink.
Energy from drinks	Instead of water, offer milk, fortified plant-based drinks, buttermilk, 100% fruit juice or a smoothie. However, water is recommended as a drink when thirsty.
AIM: To ensure protein intake	Options to ensure protein intake
Every main meal includes high-protein food	• A plate model divided into three parts, with 1/3 containing fish, poultry, meat, eggs or legumes in different forms • Soup meals contain plenty of fish, poultry, meat, eggs, legumes or cottage cheese • Porridge or gruel is made with milk or a fortified plant-based drink
Every snack, breakfast and evening snack contains protein	• Milk, buttermilk, fortified plant-based drinks or a drink containing these (smoothie, yoghurt drink) as drinks • Yoghurt, curd milk, fruit or berry quark or similar plant-based products • Cheese, cold cuts, eggs, egg butter, plant-based pastes on top of bread. If the meal is small, two slices of cold cuts or cheese • Omelette, scrambled eggs, pancakes, crepes. • High-protein pastries (for example, egg, quark, peanuts or seeds as the source of protein), high-protein snack bars

Dessert completes a meal	• Berry or fruit quark, yoghurt, pudding or similar plant-based products • Berry or fruit purée or nectar with added vitamin C • Berry or fruit kissel topped with flavoured quark or vanilla cream • Layered kissel with a mixture of vanilla and berry/fruit kissel • Pancake or crepes, a favourite cheese
Protein from peanuts, almonds and seeds	• As such, roasted or ground to season and enrich food (hot vegetables, as a separate flavour supplement, powder, shake and in desserts, pastes, spreads)
Eggs served in different ways	• In porridge, mashed potatoes, gratins, smoothies, egg butter
Protein from legumes	• Pea soup, purée soups, stews and soups, pastries for example, beans, peas, lentils, pea and broad bean flour
A diverse range of dairy products	• High-protein milk • Buttermilk, yoghurt, curd milk, powdered milk, cheeses, cottage cheese
AIM: To improve taste	Individual ways of seasoning and tasting foods when appetite is poor
	• Flavour supplements: a pleasant taste makes food more appealing. For example, lingonberry jam, pickles, mustard/ketchup, a favourite spice, sauces, grated cheese, mayonnaise, a piece of cheese • Extra sauces, such as gravy, sour cream-based sauce • The possibility to order a meal component from different options, for example, potato/mashed potato, meatballs and gravy/Karelian stew • When meals are delivered, diners also receive tips on how to modify the meal to suit their own preferences and use flavour supplements. • Dessert can also serve to whet the appetite before eating the hot meal.
AIM: To serve vegetables, fruit and berries in tasty form	Options to increase consumption of vegetables, fruit and berries.
Suitable structure	Steaming, cooking and puréeing reduce the need for chewing and increase juiciness: soups, puréed soups, stews, smoothies, nectars and purées.
Balancing flavour and acidity	Dairy products give vegetables, fruit and berries a milder taste.

When an ageing person has an increased need for energy and/or protein, food can be enriched with oral nutritional supplements (ONS), and ready-to-eat nutritional supplements (Section 6) can also be offered according to the person's estimated requirement for energy, protein and nutrients.

Nutritional care is part of both nursing and medical care and requires a review of the overall situation of the older person as well as a plan, monitoring and evaluation.

Drinks

A drink is included in the nutritional content of a meal, and it is very important in terms of complementing the flavours of the meal. For one person, a sausage dish has to be accompanied by milk, while someone else likes to have berry juice or kissel with semolina pudding. The possibility to choose a drink that is suitable for the food is also important. The significance of drinks as part of a meal:

- ensures liquid intake
- complements meal flavours
- a source of energy and protein
- a source of vitamin C (for example, 100% fruit juice with breakfast)
- source of vitamin D.

1.1.2 Store services

> **Home-made food is the best, but shopping is stressful**

For the most part, older persons who live at home can order their lunch as a food service at this time. Home care can order food items for the other daily meals as a shopping service if the client cannot do this by themselves. When an ageing person is within the scope of services, the meal service provider takes care of the nutritional quality of the delivered meals, but home care is responsible for ensuring that the entire day's meals provide adequate nutrition. Shopping services can also be purchased privately, but the challenge in that case is to ensure the nutritional quality of food. **Ready-to-eat foods can be supplemented at home to produce balanced meals, for example, by adding an egg, cold cuts or dairy products and vegetables** (see the photo on the next page).

There is a need for different types of shopping services, especially for people living outside urban areas who have no stores near them. As shopping services expand and become more widespread, the product range will also become more diverse. Products can also be assessed online at home. The opportunity to choose increases the feeling of autonomy and helps people choose products that are suitable and pleasing for them, thus ensuring that they are also eaten. A good knowledge of food and products on the part of home care employees is helpful when selecting individually suitable products that support good nutrition, for example as a drink or high-protein snack.

A shopping service is usually understood as the delivery of groceries to the home. Older people also want to have help with shopping and making a shopping list.

Food delivery services also operate in different areas. The order is placed with restaurants on the list using a phone application.

HINTS

- **Services related to buying, preparing and eating food should be combined into a single entity.**
- **Food purchases can be made together with the client.**
- **The internet can be used with the client to browse products available at the grocery store and make a shopping list together. At the same time, it is possible to provide guidance on choosing nutritionally good foods and snacks. This requires nutritional competence on the part of the employee.**
- **Arranging with local store owners to provide a transport service to the client's home.**

1.2 Support for eating together

Parishes, associations, restaurants or housing communities can organise social eating in many ways. The opportunity to meet people of the same age that social eating provides is the most important reason for older persons to participate, and the mealtime is considered a highlight of the day Eating outside the home has a positive impact on the functional capacity of older persons, who feel like they eat healthier and more varied meals in comparison to eating alone at home. Participants in club or day activities are particularly satisfied with the opportunity to meet people and receive food and other care services as needed at the same time.

The importance of cooperation and transport services

Day centre and city block club activities maintained by municipalities and associations are an important part of support for older persons in terms of well-being and living at home. The social eating that is a central part of these activities requires cooperation between different parties because in addition to care and meal services, service bus transport or other transport services must be planned in a way that permits social eating.

HINTS

- In many municipalities, it is possible to eat leftover school food made on the same day at a reasonable price.

Tastier together

Service centre activities play an important role in supporting social eating. At best, the service can be supported by combining it with transport services that bring diners together. Clients can participate in menu planning via food panels organised by the meal service provider. Service centre clients can form food circles that bring together diners with similar interests.

Support from home care and cooperation between different operators makes it possible to form various clubs or food clubs or circles that increase social interaction during a shared meal. As digitalisation progresses, technology will allow people to eat together virtually. Good experiences have been obtained from, for example, video-facilitated meals in which the instructor and participant can see other people eating in their own homes.

1.3 Transition phases and anticipation of service needs

Older people living at home are often health centre clients. It is important to assess their nutritional status (Mini Nutritional Assessment, MNA), either in connection with a possible disease follow-up visit or separately. A nurse can perform the MNA. The results of the assessment are used as the basis for agreeing on individual methods to support good meals and nutrition for the client, provide written instructions and, if necessary, refer the client to social work services. It is important for the health centre to appoint a responsible nurse for the client, for example a public health nurse or a named nurse. The role of family and friends is also important.

Client counselling

In addition to other service needs, client counselling should also assess needs related to the food and nutrition of an ageing person. When an ageing person needs food-related home care services, the client or their family members contact a client counsellor to arrange service need assessment. Service coordination is usually organised regionally as a centralised service.

The Ikäneuvo project[13] produced a client guidance manual that contains an operating model for taking the nutrition of an ageing person into consideration as part of client counselling.

Use of a nutritional status assessment is recommended in client counselling (for example, the Mini Nutritional Assessment (MNA) test, see Tools p. 155). Based on the assessment, home meal or shopping help services can be ordered for the client as a home care support service. In addition to a home meal, it is necessary to consider the meal entity for the entire day and how the client can buy food. At the same time, agreement should be reached concerning how the client's situation will be monitored in the future and how nutritional status will be assessed, for example, in connection with health care visits or home care.

The eating and nutritional status of the meal service client are regularly examined in home care as part of functional capacity, service need and health status monitoring according to an individual plan, for example every 6 or 12 months. Nutritional status can be assessed by monitoring changes in weight, the amount of food and drink consumed, changes in appetite, and by using the MNA test.

13 Pirkanmaa Ikäneuvo project. 2018. Asikasohjauksen käsikirja (Client Counsellor's Manual). https://www.tampere.fi/tiedostot/i/szq2RjitP/ikaneuvo_asiakasohjaajan_kasikirja.pdf. (In Finnish)

The client may need home care after a sudden disease requiring hospitalisation, or the need for home care services may have been identified at the health centre. It is important to transfer the previous nutrition information with the client as they move to a new service and to ensure that this information is also utilised. This makes it possible to continue nutritional care that is already in progress. The results of the nutritional assessment (for example, MNA) and the methods selected to support eating and nutrition should be recorded in different stages in the agreed manner.

Ensuring the flow of information

The relatives of older people who are living at home have an important role. For example, they may be involved in purchasing food supplies and helping with practical matters. Family members require guidance in matters related to the older person's meals and nutrition. Services to support eating should be planned and implemented in agreement with the client, in a manner that supports their own initiative and independence. The service and care plan is a good tool for transferring information on what has been agreed between different operators.

An ageing person living at home may move between several services. They may be home care clients, require short-term care, participate in day activities, open group activities at a service centre, and use health centre and emergency services. All of these units need to ensure the transfer of information about needs related to the client's eating and nutrition needs. The reasons for nutrition problems should be investigated without delay and solutions sought in cooperation, because a long-term deterioration in nutritional status is difficult to correct.

Older clients regularly participate in different open service centre activities, such as recreational and physical activity groups. Service centre personnel should actively monitor the client's situation and direct them to individual services if necessary. It is important to identify the need for guidance, especially in the case of emerging memory disorders if the client has no relatives.

Ensuring the flow of information between professionals

It is important to ensure that information regarding the health, functional capacity and nutrition of an older person is transferred from one service provider to another with the client. A key element in this work is integrated information systems for social and health care services, which make information concerning the client available to each expert. Nutrition-related assessment and monitoring are an important part of client information.

Reporting the service need of an older person

Are you concerned about the well-being of an older person?

- An older person's need for services can be reported to the person responsible for social and health care services in the municipality of residence.

When should a notification be made?

- A notification should be made when there is concern about an older person in need of social or health care services who is obviously unable to take care of themselves or their health or safety. A notification can also be made when an older person is no longer able to prepare meals and eat in a way that maintains good nutritional status.

Who makes the notification?

- A private person or official can make a notification about an older person's service need. The purpose of the notification is to ensure that an older person receives the care they need even when the person does not recognise that need or understand to ask for it themselves.
- Section 25 of the Act on Supporting the Functional Capacity of the Older Population and on Social and Health Services for Older Persons (the so-called Act on the Care Services for Older Persons) and Section 35 of the Social Welfare Act contain a special notification obligation for persons employed by the social service system, rescue services in the area, Emergency Response Centre, the police, sports services, education, children's day care, the Social Insurance Institution of Finland (Kela), employment and economic services authority, Customs, the enforcement authority, and the Criminal Sanctions Agency.
- Furthermore, according to section 25 of the Act on the Care Services for Older Persons, a health care professional must notify the authority responsible for social welfare when an older person is about to be discharged from a care unit providing institutional health care so that person can receive sufficient, safe and rehabilitative services after being discharged. The notification must be made in good time prior to the discharge.

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2 Implementation of meals in residential care

Food distribution in residential care is implemented in a centralised or decentralised manner. Centralised distribution involves dispensing the food at a catering service centre. Most food distribution is decentralised, which means that the food is brought to the unit for dispensing. The order is delivered according to an average energy level of between 1800 and 1900 kcal per day. It must be possible to order more food if the unit has more clients who need more energy than average. It is important to ensure that even the last diners receive, for example, enough meat or chicken from sauces. Sufficiency of food and also the amount of waste should be checked regularly.

Illustrated models for help

In decentralised distribution, the care staff's task is to ensure good nutrition by handling the ordering, distribution and meal situation in a thorough manner.

In order to support the client's personal meal plan and eating situation, the nursing staff, assisting staff and nutritionist need the following:

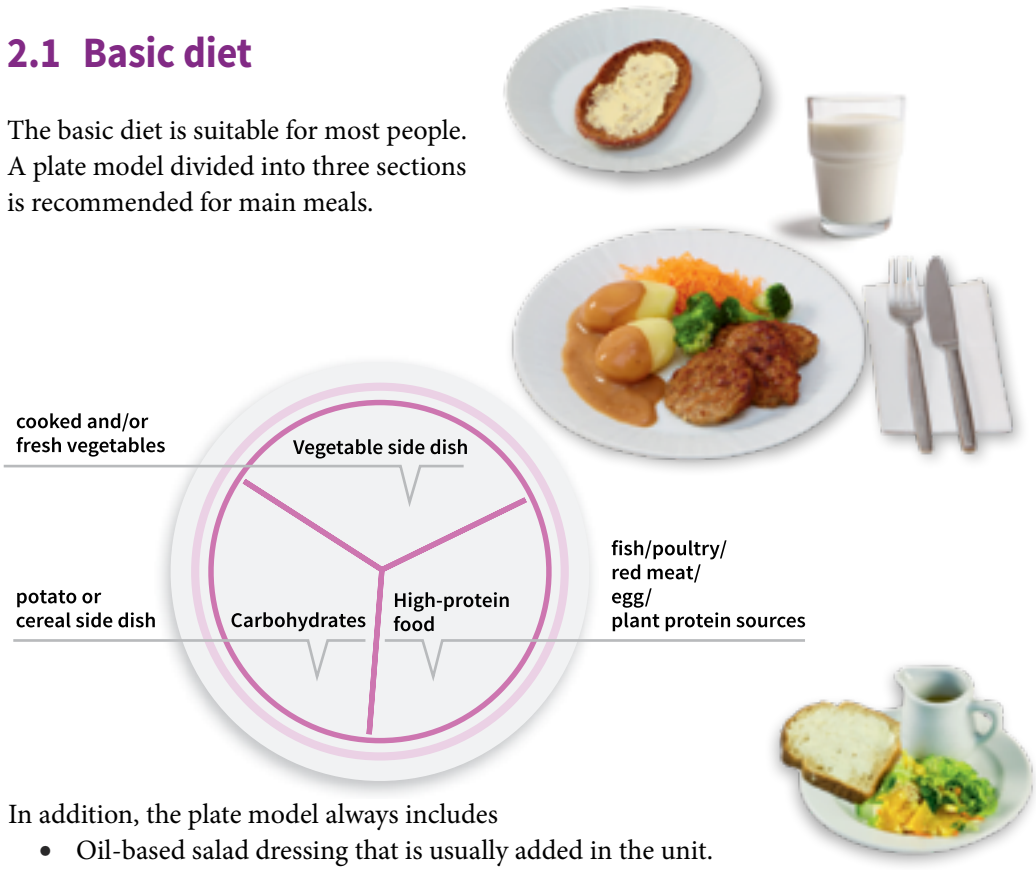
- **Recommended energy levels with illustrations**
- **Lists of portion size**
- **Nutritional content information for different diets.**

The provider trains its own food service employees to prepare food according to the instructions.

Illustrated models with instructions should be kept on display in the dining facility.

2.1 Basic diet

The basic diet is suitable for most people. A plate model divided into three sections is recommended for main meals.



In addition, the plate model always includes

- Oil-based salad dressing that is usually added in the unit.
    - Alternatively, oil or a liquid or soft vegetable fat product can be mixed with the vegetables.
- Bread, fat spread, milk or buttermilk, which is served in the unit.

Clients are asked about their preferences concerning bread and drinks at the meal. The client is served a familiar and tasty type of milk or buttermilk. Overweight clients should be encouraged to choose fat-free options. Bread is served with a vegetable fat spread that contains at least 60% fat and meets the Heart Symbol criteria.

The food and meal components handled in the units provide a significant part of the energy and protective nutrients needed by the client, so the unit supervisor, person responsible for nutrition and every employee participating in the meal should ensure the unit meets its obligations concerning the provision of food.

Basic diet meal models are helpful

- when assessing the size of meals the client is accustomed to eating
- when dispensing the food
- for example, to understand the amount of fish at different energy levels

Basic diet energy levels

1,600 kcal/6.7 MJ

- suitable for a small woman who is not very active.
  This cannot not be used if weight is decreasing or at risk of decreasing unintentionally!

1,800–1,900 kcal/7.6–7.9 MJ

- basic portion, size suitable for most people

2,200-2,300 kcal/9.2–9.6 MJ

2,700 kcal/11.3 MJ

- suitable for large men or others who for one reason or another have a high need for energy

The amount of protein in the basic diet should be **18 E% and 1.2–1.4 grams per kg of body weight**. The need for persons recovering from an disease can be 1.5 g or more/kg of body weight. A balanced evening snack ensures adequate protein intake. The evening snack should also be a source of protein. If it only consists of coffee and a sweet bun or cookie, protein intake may remain insufficient for the day. According to the recommendation, every meal should provide protein. (Table 2, p. 30). The suitability of energy intake is ultimately determined by monitoring weight. Possible bloating should be taken into account. The assessment provided by the MNA test does not take wandering, compulsive movements or other actions that increase the need for energy into account.

When a client's weight decreases without a weight loss target and the client can and wants to eat more, additional food should be offered as described earlier in this part or an extra snack should be ordered. In other cases, an enriched diet should be ordered. Alternatively, it is also possible to supplement food (Table 2, p. 30) and use oral nutritional supplements (Section 6). In institutional care, supplements are included in the price of a day of treatment.

A vegetarian diet as the basic diet

Clients often select a vegetarian diet for ethical, religious or health reasons. In addition to plant products, a lacto-(ovo)-vegetarian diet includes dairy products while the ovo version also includes egg. Some people also supplement a vegetarian diet with fish and/or poultry. A vegan diet includes only plant products. Satisfying the increased need for protein for an older person and an older person who is sick can be challenging with a vegan diet. With the exception of soya drinks, oat and other plant-based beverages contain less protein than products made from cow's milk. This should be taken into account when estimating protein intake. Products fortified with nutrients are selected from the above-mentioned products.

If the client follows a vegan diet, a nutritionist's instructions are needed to ensure a varied and balanced diet. Even if the client has been following an adequate vegan diet for a long time, the nutritional needs may have changed a lot over time. A vegan diet should always be supplemented with vitamin and mineral products (Section 6).

2.2 Enriched diet

A diagnosis or risk of malnutrition in connection with unintentional weight loss usually requires a higher intake of energy and protein from food. However, the food portions should be small. An enriched diet is not the same as a high-energy density diet. The purpose of an enriched diet is to prevent unintentional weight loss or raise low weight if necessary.

An enriched diet is needed when the client is unable to eat enough basic food to meet their energy needs. Rather than waiting and monitoring weight loss, food enrichment should be started without delay.

The objectives, methods and response to nutritional care are recorded in the care information. If the nutritional status does not clearly improve, the reason for this should be investigated and the methods and objectives changed accordingly. The client's weight development shows whether the enhancement measures are sufficient. A consultation with a nutritionist should be requested if necessary.

The food service may, as agreed, use special foods or oral nutritional supplements and meal components containing protein (see Appendix 1, p. 169, Appendix 3, p. 174 and Section 6, p. 73) for information about implementing an enriched diet. A nutritionist is involved when a diet is modified. The care staff and physicians must have information about the content of the diet. An enriched diet is based on the portion size of basic food. The portion size is ½-⅔ of the basic food portion size. For example, portions at the 1,200 kcal energy level provide an energy intake of between 1,800 and 1,900 kcal/day. The protein level complies with the recommendation when a protein amount equivalent to 20% of the energy is used when planning the menu and portion sizes.

If clients or their family members want to purchase oral nutritional supplements from a pharmacy, they must receive guidance in their selection. A nutritionist can provide advice concerning the appropriate product and the required quantity.

Implementing an enriched diet

Basic food portion: Potatoes 2 pcs, pork roast sauce 150 g, baby carrots 0.75 dl, mandarin-iceberg lettuce salad 1 dl + 1 tsp salad dressing, berry kissel 1 dl, fat-free milk 1.7 dl and a slice of bread and 60% vegetable fat spread. The basic meal contains approximately 500 kcal and 20 g of protein (16 E%).

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%).

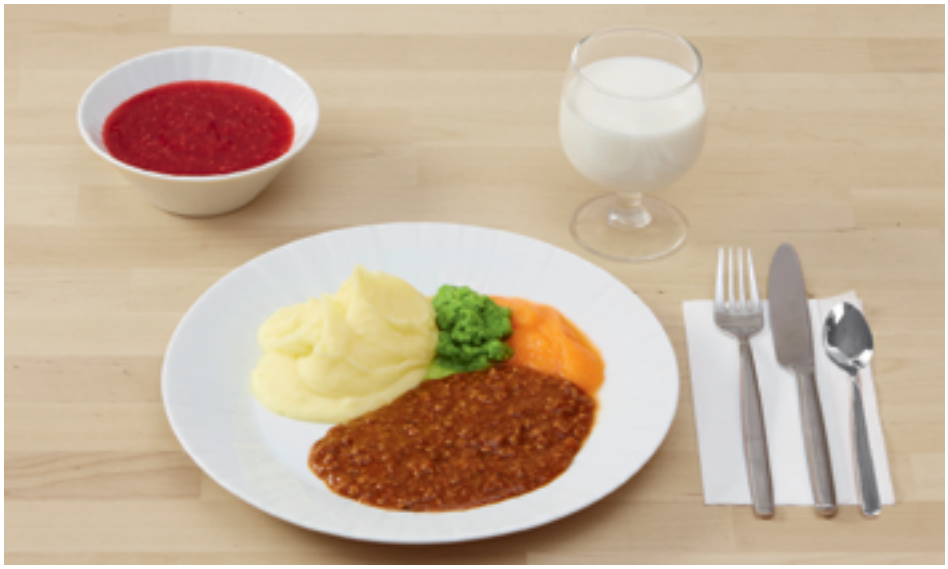
2.3 Texture-modified diets

All diets should be available in texture-modified form. Texture-modified foods should be attractive in appearance and comply with the recommendations in terms of nutritional content. The client should be informed of the foods (ingredients) in their meal. The dishes are puréed separately and the meal must have different colours. The transition to a texture-modified diet should be well justified. A texture-modified meal should also provide fibre according to the recommendations, but the use of a fibre supplement should be considered on an individual basis (Constipation, p. 106).

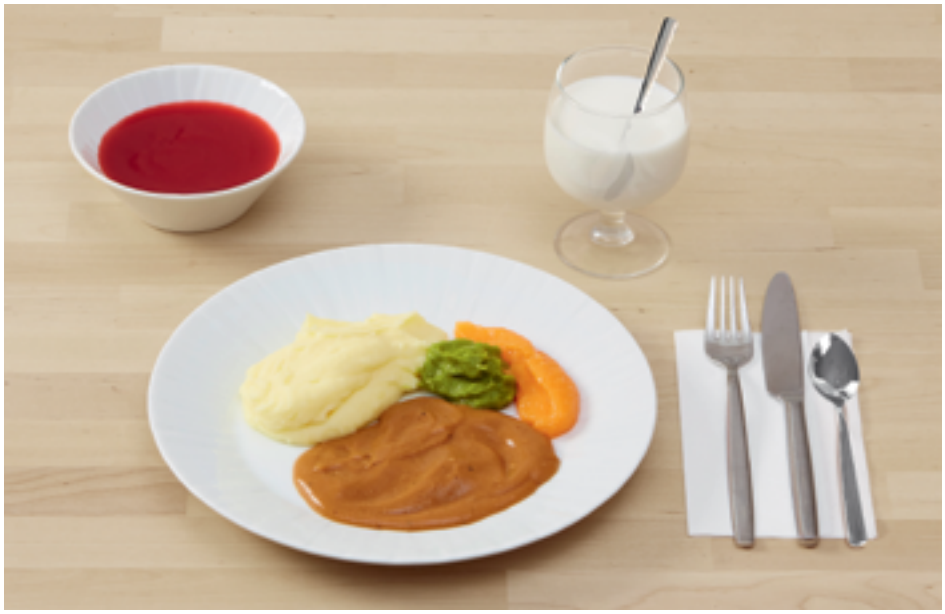
Changing the texture of food makes eating easier for people with dry mouth, chewing or swallowing disorders, oral and dental disease, diseases related to the pharynx and oesophagus, or neurological diseases such as ALS, MS or Parkinson's disease. The food texture can be **soft**, **coarse purée**, **smooth purée** or **liquid**. The change in texture may not reduce the supply of energy or nutrients. There must be images, portion lists and calculations for the diets. The more liquid form the food is served in, the more important it is to supplement the food with oral nutritional products and/or conventional energy and high-protein foods.

Texture-modified diets

Soft food is needed by people whose ability to chew has decreased. Soft food may be required for only a few days or for several years.



A coarse purée diet is needed when the ability to chew is insufficient to eat soft food or when food that is easier to swallow is needed for some other reason. Coarse puréed food is also served after digestive tract surgery during the transition from a liquid diet to normal texture.



A smooth purée diet is needed when a client has difficulty swallowing because of neurological diseases. In more severe swallowing disorders, a speech therapist assesses whether it is safe to eat orally.

A liquid diet is used when the client cannot eat solid, soft or puréed food because of a possible disease or surgery involving the mouth, pharynx, oesophagus or stomach.

The different foods in a soft diet must be soft enough that the diner can mash them with a fork. In a coarse puréed diet, all the ingredients that require chewing are mashed in the food preparation stage. Since the structure of the food is always the same, special attention should be paid to flavour, colour and temperature. Liquid is usually added to the food when it is mashed, and this dilutes the energy and nutrient density. As a result, the food has to be supplemented with ordinary food items or clinical nutritional preparations. This is important when puréed food is required for a long time. In a smooth puréed diet, the food is smooth and thick and does not release any liquid. It is based on a puréed diet.

Choices and implementation of a smooth puréed diet:

- Cereal products are served in the form of smooth porridges or gruels.
- A variety of dairy products are used. Curd milk, pudding, smooth quark, yoghurt and ice cream are suitable for snacks and desserts.
- Fish, poultry, red meat and eggs are offered in a versatile manner as ingredients in sauces and *fine-textured* individual timbale portions.

- Vegetables are served in the form of smooth purées, either as a warm vegetable side dish or a cold salad.
- Berries and fruit are served as a purée or smooth kissel.
- Vegetable oil and/or a liquid vegetable fat product are added to the food.
- Drinks are thickened with a thickening agent purchased from a pharmacy (see p. 77). Assessment of swallowing (see Tools, p. 164).

A liquid diet is only intended for short-term use due to its inadequate nutritional content. The nutrient content can be improved by adding foods containing protein and soft fat as well as powder-like nutritional supplements at the catering service centre. Nutritional supplement drinks can also be added to the diet.

2.4 Meal times and number of meals in residential care

In residential care, it is important for the client to be able to eat according to their own individual daily rhythm (Table 3, p. 48). At least for breakfast and evening snacks, the sleeping rhythm means that breakfast can be very early while the evening snack is very early in the evening. Clients who have a small appetite or lack of appetite need an extra early breakfast or a late evening snack. If breakfast is only served at 10 in the morning, lunch time comes too soon and the meal may not be eaten at all.

The majority of clients in residential care are either at risk of malnutrition or already suffer from malnutrition. Although these people may not feel hungry, they benefit from frequent meals. Deviations from the meal time recommendations can be made on an individual basis if this is required due to treatment or client need. In such cases, the instructions for keeping food warm and storage must be taken into account.

Table 3. Meal times in residential care

• Breakfast 6–9 am
• Lunch 11 am to 1 pm
• Snack 2–3 pm
• Dinner 4–6 pm
• Evening snack 7–10 pm
• A late evening snack, night-time snack or early morning breakfast on an individual basis

2.5 Meals served and menu planning in residential care

During the day, all clients are served breakfast, lunch, coffee and a snack, dinner and an evening snack. In addition, one or more extra snacks are served if energy and/or protein intake remains too low. Meals are served individually according to a regular and flexible schedule throughout the day. The night-time fast may not exceed 11 hours. All meals are important for clients in residential care. There should be 5–6 meal times during the day. Food or an energy or high-protein drink is served more often to older persons with a small appetite and malnutrition. It is especially important to focus on sufficient protein intake. The teeth can withstand an acid attack 5–6 times a day.

Lunch and dinner each provide about 30% of the daily energy requirement, breakfast approximately 20% while the snack and evening snack account for the remaining 20%.

- **Lunch and dinner** are warm meals containing fish/poultry/meat or a high-protein vegetarian dish, potatoes/rice/pasta and a warm vegetable side dish and/or salad, bread and fat spread, a drink and dessert.




- **Breakfast** consists of porridge/gruel, a variety of breads, fat spread, cold cuts/cheese and vegetable or fruit as well as a dairy product and a warm drink enjoyed by the client. Fruit can also be replaced with 100% fruit juice or a berry shot.

- **The afternoon snack** includes coffee or tea and, on a rotating basis, coffee bread, quark pie, ice cream, yoghurt, fruit, bread roll with cheese or cold cuts. The aim is to fulfil personal preferences so that the protein intake averages at least 5 g per snack on a weekly level.

- **The evening snack** contains bread and fat spread, pie, cold cuts/cheese, vegetable or fruit, yoghurt/curd milk/milkshake, berry porridge and milk, and tea.

The menu is varied and balanced and the nutritional recommendations for older person are fulfilled for weekly periods. The menu should be compiled for 3–5 weeks at a time to ensure sufficient variation. Themes and holidays should be taken into consideration in the menu. Fruit should be available throughout the day so that the clients can eat them whenever desired. The daily menu should be displayed for clients and family members. Special diets should be implemented individually, and especially persons with a small appetite or no appetite should be actively offered options from a menu of favourite foods.

A night-time snack should be offered actively to clients with or at risk of malnutrition or who are losing weight. Based on the sleep rhythm, a night-time snack can also be offered as in the late evening or as an early morning breakfast.

Content of a night-time snack

- An adequate night-time snack contains at least a moderate amount of protein and energy.
- Only juice or fruit juice soup does not interrupt the night-time fast sufficiently.
- Medicines are never mixed into the night-time snack.

Examples of night-time snacks containing approx. 200 kcal and 10 g of protein

- A large ham, cheese, herring or egg sandwich + a glass of milk
- 2–3 dl milk porridge with a dab of fat and milk/fruit juice soup
- 2–3 dl quark shake and a small sandwich
- 2 dl cottage cheese-fruit salad and crackers
- Rice pasty with egg butter and cheese + a drink
- Curd milk sprinkled with talkkuna (powdered mixture of dried oats and barley) or rye bread flour + 2 tablespoons of ground or chopped nuts
- 2 dl of high protein milk + 2 biscuits
- 1 dl milk + fruit purée
- 50 g cheese plate + jam

Examples of night-time snacks: Raspberry milkshake, purée sandwich (herring and egg), grated carrot-pineapple with oil and cottage cheese, Karelian pasty with egg butter.

People with a small appetite or lack of appetite should be offered

- plenty of spread containing at least 60% fat for bread
- dairy products
- porridges made with milk
- favourite dishes
- In addition, soft fat such as oil or an oil-based salad dressing should be added to warm vegetables and salads and a liquid vegetable fat product to gruel.

The client should be encouraged to take more food.

A client who does not eat dairy products or bread and regularly leaves part of their food uneaten requires attention.

3 Good practices when implementing food services and nutritional care

Service centre's restaurants are an important place where older persons living at home can eat together with others. Eating together is refreshing and helps people cope longer at home. Restaurant clients may form special food circles that share an interest and agree to meet for regularly for lunch, for example, on a certain day of the week.

The opportunities for older people to eat at, for example, daycare centres or schools can be increased. Bringing different age groups together would bring provide an enjoyable food experience for both sides. Common club and kitchen facilities can already be taken into consideration during the construction planning stage. Eating together can be promoted through various projects, as in the Shared Kitchen model that encourages social eating.

New production methods can be utilised in meal services provided in sheltered housing in order to take individual meal times and a home-like atmosphere into account while still being efficient. A home-like atmosphere is created when preparation of the food is completed at the sheltered housing unit. The fragrance of freshly baked bread and fresh food as well as the colour and suitable size of salads make meals appealing. Enjoyment of food comes from the feeling of eating together.

In sheltered housing where it is possible to eat together, residents can participate by, for example, setting the table. When permitted by their condition, a meal can be prepared together: residents can, for example, make a salad, dessert or bake something. The meal service provider and care staff can cooperate to modify the product range based on feedback from the clients. A guide for implementing various common functions can be drawn up together for the staff.

In Tampere, clients can spend a special restaurant day together with their relatives or friends in sheltered housing units that also have a service centre restaurant. In cooperation with care staff, a meal for the entire unit can also be arranged in the restaurant. In this case, the preferred meal can be selected from the menu, and the dining room is nicely set and decorated. Preparations for the restaurant visit already begin at the sheltered housing unit as residents dress up and get ready. Experiences of such events have been positive and refreshing and added variety to everyday life.

Harvest soup has become a tradition at Helsinki's service centres, which are open to all pensioners and unemployed people. The event offers free soup and various information bulletins as well as pleasant time spent together, including music, visits from children attending day-care centres, etc. Participants are instructed to bring their own bowl and spoon, as is the case at playgrounds. The soup is selected according to the annual theme.

Seasonal food theme days with suitable activities provide a nice change in everyday life. In sheltered housing, the daily programme can be built around the residents' taste memories. Various excursions to the environment with snacks, summer grill parties and other events are refreshing and empowering.

Enjoyment from food can also be created through special situations. Various celebrations, such as birthday parties and other special days, bring joy to the person who is celebrating and the other people attending. The taste memories, such as favourite cakes and pastries, and traditions of the person being celebrated can be taken into account. The day can include a garland of flowers and place at the head of the table for the star of the day, cake and coffee eaten together and congratulations songs.

Procedures can be agreed with the food services provider to ensure that favourite food items are available, for example, by producing a menu of favourite foods from which residents can order their preferred alternatives according to the agreed order schedule.

The City of Ikaalinen has tested a home chef service in which the food service and home care cooperated to bring a chef to clients' homes to prepare meals, with all the related aromas and atmosphere. Good experiences were gained from the service and it also attracted a lot of publicity.

Digestive system function is also related to food and nutrition. Constipation continues to be a common disorder among older persons, especially in residential care. A project called "Operating model for preventing constipation" that began in 2012 at Koskela Senior Centre in Helsinki produced good results.

A project group representing all the units focused on evidence-based prevention and treatment of constipation. The project involved an expert lecture organised for the staff, presenting the use of an osmotic laxative in all units, reviewing each resident's medication, agreeing on operating practices (for example, fluids, mobility, Pajala porridge), ensuring the immediate supervisor's commitment to the project, regular discussing the progress of the project at unit meetings, and agreeing on operating practices in the units. RAI assessments were used to monitor project results.

The impacts of the project could already be seen in the RAI results at the end of the same year. The results have continued to improve and remain at a good level. For example, less than 5% of residents suffer from constipation and 1% from severe constipation (national average of 4%), while 86% of residents have regular bowel function without an enema. Good practices are regularly reviewed: RAI comparison data obtained from the Finnish Institute for Health and Welfare is reviewed twice a year, and treatment of constipation is monitored every three months using the quality module of the RAIsoft.net software. This has linked the project to overall operational development made it part of good practices.

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PART II

NUTRITIONAL CARE FOR OLDER PERSONS

4 Monitoring and assessing nutritional status and food use

It is important to identify a deterioration in nutrition as early as possible. Correcting nutritional status is easier than treating malnutrition.

Good nutritional status is an important factor in maintaining functional capacity and quality of life. Studies show that a decline in nutritional status increases morbidity and mortality. It is estimated to cause considerable health care and social welfare costs due to prolonged disease and slower recovery as well as an increased need for services.

Nutritional status may deteriorate due to inadequate nutrient intake or inadequate utilisation of nutrients in the body. Low-grade inflammation associated with disease and other ageing-related mechanisms can weaken nutritional status. Appetite decreases as a result of disease and, in combination with low-grade inflammation, the body's composition gradually changes and cell metabolism weakens. This can lead to weight loss, low BMI and anorexia in an older person. Muscle mass may also decrease without weight loss.

- **Regular weighing is the simplest and most reliable way to monitor the nutritional status of an older person, and it should always be part of a health examination.**

Changes in weight are more important than individual weight measurements or routine weight checks. Weight should be checked once a month, and more frequently if necessary. The faster and larger the unintended weight loss, the more reason there is to suspect a deterioration in nutritional status.

The criteria for unintentional weight loss that predispose a person to malnutrition are: >2% per week, >5% per month, >7% per 3 months, >10% per 6 months.

In addition to monitoring weight, the amount of food eaten is assessed using, for example, the monitoring form presented in the tools segment (p. 157). C-reactive protein (CRP) combined with weight monitoring has also been proven to be a good indicator of malnutrition. It can be measured in conjunction with other laboratory tests.

Nutritional status should be assessed in more detail using validated tools developed for the evaluation of nutritional status. Hospitals use the NRS 2002 (Nutrition Risk Screening) method (see Tools, p. 154), but we encourage use of the MNA test (see Tools, p. 155) in this recommendation. The MNA test is better than the NRS 2002 method in terms of taking low BMI into consideration when assessing the risk of malnutrition.

The nutritional status of older persons should be assessed regularly in order to identify deterioration at the earliest possible stage. The risk test should be repeated every six months for those within the scope of regular services, such as home care and residential care, and once a year for those monitored in primary health care. The nutritional status of people with memory disorders who are still living at home should be assessed at least twice a year and they should be weighed once a month. The MNA score and weight are recorded in the electronic patient information system. Up-to-date and correct information is essential in the planning, implementation, assessment and monitoring of nutritional care for an older person.

Unnecessary restrictions related to eating, such as unjustified special diets, should be avoided and older persons should be encouraged to eat as diversely as possible. When assessing nutritional status, careful attention should be paid to factors affecting eating, such as difficulties with chewing and swallowing (Section 10, p. 114), the ability to eat independently, the need for drinking and eating aids, depression/loneliness, cooking skills and opportunities, the food environment and the availability and use of shopping services.

Assessing food use

Assessment of the intake of energy and protein (Appendix 1, p. 169) and information on acquiring food and eating are key tools for assessing nutrition and planning nutritional care (see Tools, Monitoring Nutrient Intake, p. 157). The assessment of nutritional status and nutrition must guide the nutritional care in a manner suitable for that individual.

Nutritional status, meals and nutrient intake are closely linked to health and functional capacity in older persons. Nutritional status may deteriorate for many

reasons. The person may have a poor appetite and consume less food than needed, causing a decrease or fluctuation in weight and a deterioration in muscle strength. A decline in nutritional status is strongly related to other disease and reduced functional capacity in older persons (Figure 2).

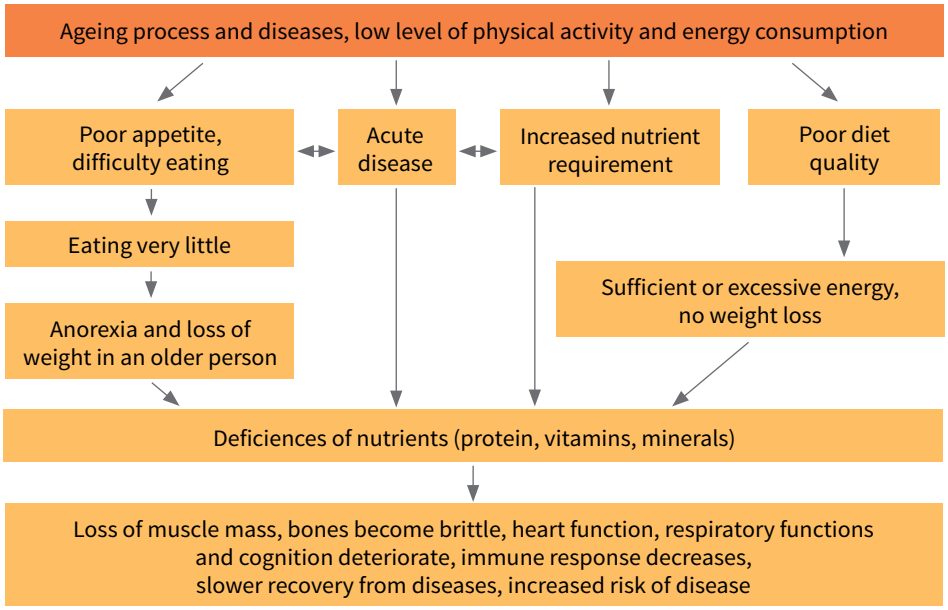

Figure 2. Development of weakened nutritional status in an older person

Sources

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5 Nutritional care as a whole for persons in residential care, division of responsibilities and multi-professional cooperation

Good nutrition has a decisive impact on the well-being and functional capacity of older persons. It is based on individual nutritional needs and ability to eat. Multi-professional cooperation in various services is needed in to ensure good nutrition for older persons (Figure 3, p. 61). Each professional has their own role and responsibility. The staff's nutrition knowledge has to be continuously maintained. The service and care plan takes issues affecting the client's nutrition into account in a wide-ranging manner. Quality criteria are used to evaluate and develop nutritional care. The quality of nutritional care is regularly monitored both in the food service and in care work (see Tools, Quality criteria for nutrition in residential care, p. 158). It is important to listen to the needs and preferences of clients and their families and guide them with regard to implementing good meals and nutrition.

Figure 3. Issues to consider in multi-professional cooperation

5.1 Meal situation from the client's perspective

A home-like meal situation

Appealing food, a beautiful table-setting and a pleasant meal environment provide pleasure and lead to better eating. Afternoon coffee is a refreshing highlight in the day. An evening snack can improve sleep quality and reduce the use of sleeping medication. Clients should be given the opportunity to eat in unit's own dining room or alone if desired.

In addition to normal food, restless clients should be given food that can be eaten with the hands so that they can eat while moving around if necessary.

A more home-like atmosphere can be created by

- ventilating and tidying the dining facility, setting the table with nice dishes
- telling the clients what food will be served today
- letting the client choose what and how much they eat
- seating clients in sturdy chairs around a table and
- having staff eat or be otherwise present with the clients.

During each meal situation, the named nurse should have an understanding of what is important for each client from a nutritional care standpoint.

The named nurse must assess the client's eating and pass this information on to the next nurse. If the client has not eaten enough, the responsible nurse records the way in which insufficient energy and/or protein intake should be compensated in the following meal. If possible, the client should be included in meal planning. All employees involved in serving food, including assisting personnel, must have induction regarding the implementation of good nutritional care.

Providing assistance with eating

Independent dining is supported, but all clients should receive sufficient help with tasks such as opening packages, buttering bread, cutting meat or pouring milk. Independent dining is supported with assistive devices for eating.

Basic instructions for people who handle feeding for an older person:

- Always reserve enough time for feeding. The faster feeding takes place, the more likely it is that food will get into the trachea.
- Choose a quiet place where the client can focus on eating.
- Sit so that the feeder can make eye contact with the person being fed.
- Sit comfortably.
- Talk as little as possible during meals, but always explain what is being put into the client's mouth.
- Feed small mouthfuls slowly one at a time and alternate between food and drink on a varied basis. Check to ensure the mouth is empty.
- Use smaller utensils if necessary, such as a dessert spoon or teaspoon.
- Keep the dishes separate so the client can taste different flavours.
- Use a napkin frequently enough.
- Concentrate on the feeding.
- Ensure that the food doesn't get cold, for example, with a warming plate or cover.
- Ensure that the position of the person being fed and the lighting at the table are good.
- Use special assistive devices if necessary (see figure below).

Eating can be facilitated with dishes and utensils that are suitable for the client.

Medication is not mixed with the food. Medication is administered according to the manufacturer's instructions, which means that it is administered either close to a meal or at a completely different time based on the instructions. Follow the dosage instructions given by the doctor. Medication can reduce appetite and incorrectly administration can hinder or intensify the effect of the medicine.

The food should not be allowed to cool off, so it should only be distributed when feeding starts. It is important for the client to have the chance to eat in peace. Approximately 30 minutes should be reserved for this purpose. Do not force the client to eat. The reasons for not eating should always be investigated and treated. These reasons can include pain in the mouth or elsewhere in the body, depression, loneliness, malnutrition, the eating environment, medicines and disease.

5.2 Nutritional care and recording information

Implementing good nutrition as part of overall care is the sum of many factors and the efforts of different professional groups.

At the beginning

When the therapy starts, the client should be told that the food being served is included in the cost of a care day. If the basic diet is not sufficient, an enriched diet should be ordered. The client should also be told that they can give feedback on the food served and the meal arrangements during their residence.

The following information is discussed with the client and a family member and recorded (see Tools, Selecting and ordering food, p. 162).

- weight, height, weight development
- unsuitable ingredients
- a special diet is ordered for medical reasons
- the diet and its structure and a preliminary estimate of a suitable portion size
- meal rhythm
- favourite foods and eating preferences
- supplementing food on a preliminary basis: Vitamin D, fibre supplement and oral nutritional supplements
- ethical and religious aspects
- need for help with eating and assistive devices.

When the addition of oral nuritional supplements to a client's food begins in a hospital, the client and family members should be told that, according to law, the supplements are included in the price of a treatment day in hospital care. In other types of residential care, such as housing and nursing service units (sheltered housing), and home care the client is responsible for the cost of the products. Kela pays compensation for the use of clinical nutritional products[14] in the case of certain disease.

A Resident Assessment Instrument (RAI) assessment should be performed within 14 days of arrival for treatment, whenever the client's condition changes substantially and at least every six months.

The client's nutritional status should be assessed using the MNA test upon arrival for treatment. The assessment of nutritional status should be repeated every six months, and more frequently if necessary. (See Section 4)

The care negotiation involves discussing the contracts recorded in the nursing plan with the client and their family member. These contracts also include nutritional objectives and their implementation, and deal with topics such as food gifts.

Determining the care need

The care and service plan takes into consideration

- the clients' ability to dispense their own food and go to the dining room to eat
- the condition of the mouth, teeth and possible dentures, the ability to chew and swallow food
- appetite
- mood, psychological symptoms such as depression or binging
- nutritional status, (weight, BMI and MNA test) and its modification, fluid balance/desire and ability to drink.

14 Kela. Oral nutritional supplements. https://www.kela.fi/laakkeet-ja-laakekorvaukset_kliiniset-ravintovalmisteet. (In Finnish)

Compiling a care and service plan

The care and service plan of each client takes into account individual factors affecting nutrition, such as the client's functional capacity, nutritional status as well as oral and dental health and their maintenance.
The plan is drawn up using information obtained from the RAI and MNA assessments and other situation-related information.

The plan includes entries concerning

- the objectives of nutritional care and the methods for achieving them
- weight. The client should be weighed regularly, at least once a month. Clients who are at risk of malnutrition should be weighed on a weekly basis.
- maintenance of oral and dental health:
  - daily self-care (with assistance if needed)
  - oral health examinations by a dentist / health checks by an oral hygienist performed at intervals specified for the client
  - professional treatment as needed
- measures to increase daily activity, improve muscle strength and balance

The plan assesses the client's nutrition as needs change, for example, when the client loses weight, or at least every three months.
The plan must always be kept up to date.

In sheltered housing and institutional care, special attention should be paid to providing a pleasant meal situation and supporting the client's freedom of choice, independent coping and social interaction.

5.3 Personnel competence and professional responsibilities

The care staff play an important role in the implementation of nutritional care. Everyone who is working with older persons must have completed a unit on the special features of nutrition for older people in their basic education. Induction training for new employees should focus on the unit's meal arrangements and nutritional care practices. After induction, the competence can be verified with a test. The staff should participate in continuing education (online training, work community training, training videos, lectures) each year. In addition to food and nutrition, this training should also deal with oral health and physical activity.

In order to promote nutritional care, it is important to agree on the responsibilities of different actors and form a network of nutrition contact persons and responsible persons. The nutrition contact persons can be responsible for an entire sheltered housing or home care area, while the responsible persons work in group homes and in local home care service areas. The nutrition contact person ensures that up-to-date information reaches all employees. The nutrition contact person also examines the implementation of food services and nutritional care and ensures that their own concerns and those raised by other staff are forwarded for resolution. The person responsible for nutrition handles similar tasks in their own unit. A nutritionist can serve as a network coordinator and developer. Networks can also be formed regionally. Supervisors ensure that nutrition issues are dealt with regularly inside the organisation and the necessary resources are provided.

Professional responsibilities

Registered nurse / public health nurse and practical nurse

The central task of a registered nurse/public health nurse is to guide and advise the client and assess their nutritional status and nutrient intake comprehensively as part of nursing work. Registered nurses/public health nurses are able to apply Finnish nutrition recommendations to promote public health, prevent and treat chronic diseases, and in care/nursing work. They are also able to implement nutritional care and counselling in cooperation with a multidisciplinary network of experts. Registered nurses/public health nurses are familiar with the significance of nutrition in the care of an older person and they can identify the factors affecting the nutrition of clients in a wide-ranging manner as well as plan, implement and assess the nutrition of individual clients. In counselling services and at health centres, registered nurses/public health nurses ensure that the client's nutritional matters are addressed during appointments and that their nutritional status is assessed with, for example, a short MNA test. This should be done proactively and not only when problems arise.

Early assessment of nutritional status and identification of problems is important in the work of memory nurses, wound care nurses and adult health clinic nurses/

public health nurses, because they reach older person who are outside the scope of home care. Assessment of nutritional status and nutrition counselling should also be taken into account as part of home visits and client counselling to support well-being. When assessing service needs, a registered nurse/public health nurse also assesses the client's nutrient intake and nutritional status. In home care and residential care, the registered nurse/public health nurse can also handle practical eating arrangements, for example, order home meals and meal supplies, organise meals in practice, assess the suitability of meals and monitor the client's energy intake. Registered nurses/public health nurses work in cooperation with practical nurses and guide them concerning the implementation of nutrition-related matters. Registered nurses/public health nurses also ensure that oral health is evaluated and directs the client to other services as necessary. Registered nurses/public health nurses cooperate closely with family members/close friends.

Practical nurses play a key role in terms of implementing nutrition and meals in home care and residential care. Practical nurses understand the importance of nutrition in the care of older persons and when treating their disease. Practical nurses are able to assess the client's nutritional status and implement a nutrition plan. Practical nurses handle daily meal arrangements for the client in accordance with the plan and assess the need for changes. Practical nurses ensure that oral care is performed and, if necessary, assist with this and are able to guide the client as needed. Practical nurses work in close cooperation with the registered nurse/public health care nurse to ensure the client has good nutrition. Practical nurses also cooperate closely with family members/close friends.

Instructions for compiling a care plan, the meal situation and supporting the client's meals are discussed in sections 5.1 and 5.2 (p. 61–66).

Assisting personnel

People who have no education in the field of social or health care or a very short training period work under different titles in home care and residential care. Their tasks and skills may vary greatly, and it is therefore important that the units agree on their responsibilities with regard to nutrition and meals. Institutional cleaners can participate in the distribution of food and collecting dishes from clients in residential care. The division of work should be agreed so that trained nursing staff can monitor the clients' food consumption and need for help.

Nutritionist

Nutritionist are experts in nutritional care, who support the nursing staff in multi-professional cooperation. For example, nutritionists are responsible for tasks such as staff training, induction, production of support material, and consultation. They develop care with the other personnel.

Nutritionists assess the client's nutrient intake and need as well as their nutritional status. They draw up a plan taking into account the client's symptoms, disease, functional capacity, test results, medication and dietary preferences. The main emphasis is on preventing and treating malnutrition, especially with regard to nutritional care for older persons in poor condition. Nutritionists prepare or update a nutrition plan for clients moving from hospital to home care or residential care, including enteral feeding. Consultation with a nutritionist is needed in the case of digestive tract symptoms or weight fluctuation. If necessary, a nutritionist is also asked to consult on the selection and use of oral nutritional supplements. The tools include an example of the criteria for referral to a nutritionist. The referral is made by a doctor. A nutritionist's expertise should be available in all services used by older persons.

Physiotherapist and occupational therapist

Physiotherapists are experts in mobility and functional capacity. Physiotherapists assess the mobility and functional capacity of a client or person receiving rehabilitation, and functional limitations in their environment. Based on the assessment, they plan and implement a training programme to promote functional capacity in cooperation with the client. Physiotherapists are familiar with mobility aids. Physiotherapists also advise and guide the client's family and professionals. Cooperation between physiotherapists and other professional groups is important in meal situations and especially when considering nutrition and meals related to rehabilitation.

The professional skills of occupational therapists can be utilised to identify methods and habits as well as individual preferences and relevancies that enhance a client's eating. Occupational therapists assess the client's possibilities to participate in selecting food and, if necessary, also more extensively in preparing and purchasing food. This supports the client's independence and functionality. Occupational therapists assess

and guide the feeding position and situation so that it supports the client's physical and cognitive performance in the best possible way. If necessary, occupational therapists modify the environment and activities or use assistive devices to achieve this goal. Occupational therapists also advise and guide the client's family and professionals.

The role of a physician

Physicians are responsible for the overall care of older persons, their pharmacotherapy, issues related to the prevention and treatment of disease and deteriorating functional capacity. They also take the promotion of good nutritional status into account. In the case of nutrition problems, the physician is responsible for investigating and finding a possible cause. Geriatric specialists who treat older patients perform comprehensive geriatric assessments and provide treatment in cooperation with other professional groups.

The role of oral health care

Dentists and, where applicable, dental hygienists and dental nurses are responsible for assessing the status of oral health. The assessment should be included in the care and service plan and it should be repeated regularly according to the plan, at least once a year. Oral health care should be contacted if chewing and swallowing disorders, pain or other oral problems occur. The nursing staff should also assess the condition of the mouth continuously as part of basic care and nutritional care. The Oral health assessment indicator can be used for evaluation (see Tools, Oral health assessment, p. 163). Different services should ask clients about the condition of their mouth and their use of oral health care services. Asking about the condition of the mouth is particularly important when assessing the need for services so that problems can be dealt with.

An example of multi-professional competence:

Treatment of swallowing difficulties

As the population ages, problems related to swallowing are becoming more common. Difficulty swallowing is a common disorder and a symptom of many disease (see Tools, Assessment of swallowing, p. 164). The problem may come up at the emergency clinic, during a non-urgent appointment in primary health care, at a rehabilitation unit, nursing home or during a home nursing visit. There may be several reasons for swallowing difficulties, such as dry mouth, chewing problems, high age or a primary disease. As a person ages, motor functions may slow down, coordination can deteriorate and swallowing becomes less effective. Studies show that sarcopenia is also connected to problems with swallowing. There is a risk of malnutrition, which further aggravates the sarcopenia.

Assessments by a nutritionist and speech therapist

A nutritionist assesses the client's nutritional needs and plans effective and safe nutritional care to prevent or treat malnutrition, with consideration to the client's habits and a speech therapist's assessment. Oral nutritional supplements (Section 6, p. 73) may be used as support as well as enteral feeding if necessary. Enteral feeding should not be used during the final, dementia stage of memory disorders. It is not beneficial for the patient and it may only increase their suffering.

There is not always a specific treatable cause for an older person's swallowing disorder. In these situations, the aim of the counselling by a speech therapist and nutritionist is to ensure that deterioration in swallowing ability does not lead to malnutrition and reduced functional capacity. It is also important for the patient to avoid aspiration pneumonia that would cause a further decline in general condition.

Information about individual implementation of the nutrition management plan is recorded in the management plan

The causes and extent of swallowing difficulties are often clarified in a clinical and/or instrumental (x-ray of swallowing, endoscopic evaluation of swallowing,) assessment performed by a speech therapist during an appointment or in the care unit. Based on the examination, the speech therapist gives the patient a recommendation concerning a suitable and safe way to implement nutrition and the food composition. If the cause of the swallowing difficulties has been identified and the symptoms are mild, the client may benefit from simple instructions: planning the composition of food so it can be easily and safely swallowed and allowing adequate time to concentrate on eating. An assessment by a speech therapist must provide the basis for selecting a diet texture. A nutritionist plans implementation of the diet. If necessary, the liquids are thickened with a thickening agent available from a pharmacy (Section 6, p. 73) to avoid aspiration pneumonia. The mucous membranes of the mouth can be moistened in advance with cooking oil or with mouth moisteners available from pharmacies (Dry mouth instructions in Section 10.2, p. 116).

Sources

Ilmarinen T, Rousselle R, Apajalahti M, et al. Nielemisvaikeuden arviointi. Yleiskatsaus. Suomen Lääkärilehti 2019;74:1811–1816. (In Finnish)

6 Oral nutritional supplements and food supplements

6.1 Oral nutritional supplements

In order to improve the efficiency of nutrient intake, meals can be supplemented with food items or oral nutritional supplements (ONS), or by offering ready-to-eat nitritional supplements, switching to enteral feeding and – in situations where the gastrointestinal tract cannot be used – to parenteral nutrition. This section focuses on the use of oral nutritional supplements. These products are only sold in pharmacies. The use of food items to enrich meals is discussed in Section 6.

Indications for use of oral nutritional supplements are:

- insufficient nutrient intake
- poor appetite
- increased nutrient requirement
- eating difficulties
- malabsorption.

Optimally timed and implemented use of oral nutritional supplemets products can be used to effectively prevent malnutrition efficiently and to treat it in a cost-effective manner.

Oral nutritional supplements can be divided as follows:

- powdered products
- balanced, ready-to-eat products (ready to drink liquids, puddings, soups)
- fat supplements.

The priority is to ensure adequate energy intake. Using a balanced product often satisfies the need for protein at the same time, since protein usually accounts for 18% of energy in these preparations. High-protein products (protein 24–30% of energy) are suitable for special situations (particularly high requirement for protein, very low dietary protein intake, protein loss).

It is important to remember that a protein supplement is not useful if the clients's energy intake is not adequate, as this means that the protein is used as energy rather than for tissue building, which is the primary function of protein.

Oral nutritional supplements are almost always unfamiliar to clients and their families, so careful and concrete instructions concerning their use are needed. The staff must be familiar with the products.

6.1.1 Ready-to-eat nutritional supplements

The majority of ready-to-eat nutritional supplements are beverages. The energy content of the products is often prominently displayed on the container in kilocalories/ml, for example, 1.5, 2.0 or 2.5. The maximum energy content is 3.2 kcal/ml. Container sizes vary between 125 and 200 ml. This means that they contain between 250 and 400 kcal/container of energy. The protein content is 8–20 g/container. For the majority of people using these products, the option containing this normal amount of protein is optimal. In the worst case, a product with an overly high protein content may cause a strong feeling of fullness and suppress the appetite for a long time, which can inappropriately reduce nutrient intake. The protein content in high-protein products is 18–20 g/container. These products are intended, for example, for wound patients in situations where the need for protein has clearly increased, sufficient intake is difficult to achieve or the client has protein loss. These people are often in hospital care. These situations are less common at home.

The majority of the products are similar to milkshakes. Some are bright, juice-like and may be more suitable if the client suffers from nausea, mucous or has difficulty swallowing. Juice-like products contain less protein than milkshake-style ready-to-drink liquids. Some of the milkshake-style products contain fibre. At this point, there are no such juice-like products on the market.

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

There are many taste options, most of which are sweet. The latest newcomer to the market is beverages with a neutral flavour, which are better than a sweet option for persons who, for example, have taste changes. It is important to encourage the client to try new flavours if previous ones were not to their preference (see also Ideas for use, Appendix 3, p. 174).

Some ready-to-eat nutritional supplements have been created to be particularly suitable for supplementing the nutrient intake of certain patient groups: diabetics, predialysis and dialysis patients, patients with congestive obstructive pulmonary disease and older persons. 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 number of products used should be planned according to the situation. A nutritionist plans use of the products in relation to the patient's nutrient intake and special needs. They are usually served as snacks, but also as the primary or even only nutrition if necessary. An optimal product can be used flexibly, but if no suitable flavour options are found or the product is otherwise unsuitable, another product should be selected.

Serving temperature has an important impact on taste. 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.

There are also pudding-style products on the market that can be eaten with a spoon. These are particularly suitable for people who have difficulty swallowing. They also provide variation in the diet, especially if the need for oral nutritional supplements continues for a long time.

The only savoury option on the market is a soup that requires heating. Bouillon powders can be added to beverages with a neutral flavour if, for example, the client does not like the sweet flavours.

One container of high-energy nutritional supplement ready-to-drink liquid (400 kcal/container) corresponds to an average lunch in terms of energy and protein content.

6.1.2 Fat supplements

Fat supplements are used to increase energy intake in situations where food amounts are small and a person has difficulty getting enough energy. Some of the products require absorption of normal fats. Others are suitable for people 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 include a small amount of proteins and carbohydrates.

> **Example:** 2 containers of high-energy nutritional supplement beverages (á 125 ml = 300 kcal) + a fat supplement 3 x 30 ml = 1,025 kcal (340 ml), which corresponds to nearly 60% of the average nutritional need for a woman.

6.1.3 Oral nutritional supplements in powder form

The following types of products are available on the market in powder form:

- products containing only energy (maltodextrin)
- products containing nearly only proteins (appr. 90%)
- balanced products
- a protein-free product
- 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, such as yoghurt, mashed potatoes, sauces and other light-coloured foods. The fibre supplement feels crispy in the mouth, so it tastes best when mixed with coarser food.

Powder products are suitable when the amount of food eaten by the patient is sufficient to allow the use of powdered nutritional supplement products. They are often used in combination with ready-to-drink liquids.

6.2 Thickening agents

Thickening agents are used to thicken thin liquids so that clients with difficulty swallowing or broken mucous membrane in their mouth can swallow safely and without pain. The degree of thickening can be adapted flexibly to the client's needs. Thickening agents do not change the taste of the food and are suitable for use in both cold and warm liquids. The latest, so-called clear products, blend very easily and do not form clumps. Older generation thickening agents are slightly more susceptible to clumping. It is important to only use the amount of thickening agent needed to allow safe swallowing. Excessive thickening can make consumption of the liquid unappealing.

6.3 Food supplements

A vitamin D dose of 20 µg per day is recommended for everyone aged 75 or over on a routine basis. A smaller dose of vitamin D (10 µg) may be recommended if a client regularly consumes a lot of vitamin-fortified milk products, dietary fats and/or fish. If a person does not consume dairy products fortified with vitamin D, fat spreads and/or fish 2–3 times a week, a 10 µg vitamin D supplement is also recommended for those under 75 during the darkest period of the year (October to March).

Other food supplements are used as necessary. For clients who eat small amounts of food, a balanced multivitamin-mineral product usually supplements the diet appropriately. A B_{12}vitamin deficiency is more common among older persons than younger ones, for example, due to atrophy of the gastric mucosa and the use of certain medicines, such as metformin.

The most common other food supplements are an iron product if the haemoglobin level has decreased. However, it is important to establish that the iron deficiency is not due to gastrointestinal bleeding. A calcium preparation is needed if the diet contains very little dairy products or fortified plant-based products used like milk, or if the client has an increased requirement for calcium that cannot be met with food. A vitamin C preparation is often necessary if the client cannot or does not want to eat fresh vegetables, berries and fruit and does not enjoy beverages containing vitamin C. Persons who follow a vegan diet always receive vitamin B_{12} and iodine supplements.

PART III

SPECIAL CHARACTERISTICS OF NUTRITION FOR OLDER PERSONS

7 Increased nutrient requirement

7.1 Adequate energy intake that meets the needs

An older person must receive energy that corresponds to energy expenditure. The energy needs of older persons are very individual. It depends on the amount of muscle mass, physical activity and hormonal factors. When a person is sick, the need decreases in line with a reduction in physical activity. On the other hand, disease like fever and infections increase the need for energy. Weight monitoring at sufficiently frequent intervals is a prerequisite for assessing the adequacy of energy intake. Sometimes the energy expenditure of an older person may be very low. If the weight remains stable, energy intake and expenditure are balanced.

7.2 Nutrient density of food

The amount of nutrients per specific energy unit (usually 1 MJ or 1,000 kcal) is called nutrient density. Good nutrient density requires the use of low-fat and low-sugar foods and low-fat cooking methods. A high proportion of cereal products and vegetables is also emphasised to ensure adequate intake of dietary fibre. For older people, energy intake is usually between 6.5 and 8.0 MJ/day (1,500 and 1,900 kcal/day). Vitamin and mineral intake may remain low if the nutritional quality of the food is not taken into account. A very low energy intake (< 6.5 MJ/day, < 1,500 kcal/day) is usually linked to low physical activity or low body weight. Such groups include older persons who, for example, have a low level of physical activity. Diet planning for these groups must pay particular attention to ensuring sufficient nutrient intake. If necessary, the diet should be supplemented with food items, a multivitamin-mineral product and/or oral nutritional supplements.

7.3 Protein requirement

The recommended protein intake for persons over the age of 65 is 1.2 to 1.4 g/kg body weight/day (15–20% of energy intake). The person's current weight is used as the weight. For those recovering from disease, the recommended intake is higher, for example, approximately 1.5 g/kg/day. The requirement may be even greater in special situations, for example, if there is a loss of protein. Attention should be paid to ensuring adequate protein intake when ageing reduces the need for energy. Disease and acute stress situations, such as surgery, increase the need for protein. As functional capacity deteriorates and disease increases, the intake of protein often falls below the recommended level. According to a study conducted in Finland, up to 75% of people with chronic diseases and their informal caregivers had less protein intake than recommended.

Attention should be paid to the quality of protein for older people whose diet does not include sources of animal protein. In this case, a wide range of tasty sources of plant protein should be offered to ensure a sufficiently diverse amino acid composition.

In addition to protein intake, it is important to make sure that an older person receives sufficient energy. If the energy intake is not adequate, the body uses the protein in food as a source of energy and it does not support the preservation of muscle mass. Table 4 lists good natural sources of protein. (See Appendix 1 on the protein content of different dishes, p. 169).

Table 4. Protein sources

	Portion	Protein
Milk, buttermilk, yoghurt	2 dl (glass)	6–7 g
Cottage cheese	100 g	16 g
Quark and protein quarks	100 g	10–12 g
Porridge made with milk	200 g (small portion)	8–10 g
Hard cheeses	10 g (cut with a cheese slicer)	2–3 g
Egg	1 pce (60 g)	7 g
Fish	100 g	10–25 g
Meat	100 g	20–30 g
Meat and sausage cold cuts	10 g (slice)	1–3 g
Bread	30 g (slice)	2–3 g
Soya beans or mince, cooked	100 g	15–16 g
Other beans, cooked	100 g	10–16 g
Peas, fresh and cooked	100 g	5–6 g
Soya drink and yoghurt	2 dl (glass)	6–8 g

Source: http://www.fineli.fi/ and food package markings

7.4 High-fibre alternatives as a source of carbohydrates

High-fibre alternatives should be favoured as sources of carbohydrates. Wholegrain cereal products, vegetables, berries and fruit are recommended because, in addition to fibre, they contain vitamins, minerals and other protective nutrients such as flavonoids. The health-promoting impact of dietary fibre has been linked to properties that prevent cancer and type 2 diabetes, and on the other hand, also the cholesterol lowering effect and to the post-prandial glycemic control of soluble fibre. The significance of dietary fibre in promoting bowel function is higher for older people. Adequate dietary fibre intake prevents and alleviates constipation and symptoms caused by diverticulosis of the colon.

The recommended intake of dietary fibre for normal colon function in older people is at least 25 g/day for women and 35 g/day for men. In order to ensure adequate dietary fibre intake, wholegrain cereal products, roots and vegetables, berries and fruit, nuts and seeds should be included in the diet and the use of sugar and high-sugar foods and drinks should be limited (Table 5). High sugar content in food reduces its nutrient density and poses a risk to oral and dental health. Limiting excessive and frequent consumption of sugary beverages and sweets is important in order to safeguard the nutrient density of the diet and prevent oral health problems.

Table 5. Foods and food portions containing an average fibre content of 3 g

	Portion
Rye bread	1 slice
Multigrain bread	2 slices
Oat porridge	2,5 dl
Rye lingonberry porridge	1,5 dl
Grated carrot	2 dl
Fresh and frozen berries	2–3 dl
Tomato	2 pcs
Boiled potato	4 pcs
Apple	1 pce
Orange	1 pce
Prune	6 pcs
Nuts, almonds	2–3 tbsp

Source http://www.fineli.fi/

7.5 A sufficient amount of soft fat in the diet

Fats can be divided into soft (unsaturated) and hard (saturated) fats. The use of soft fats and limiting the intake of hard fats is recommended in order to maintain health. Hard fat should account for less than 1/3 and soft fat for at least 2/3 of total fat.

The recommended quality of dietary fat has a favourable effect on, for example, serum cholesterol and triglyceride levels as well as glucose metabolism and also helps control low-grade inflammation. It has also been proven to have a connection with the condition of the skeletal system and maintaining muscle mass in older people. Soft fat is also a key element in a health-promoting diet in terms of maintaining cognition, preventing and treating type 2 diabetes, treating elevated blood pressure, and in the prevention and secondary prevention of coronary heart disease. Secondary prevention refers to actions aimed at preventing the disease from progressing.

Soft fat is contained in, for example, liquid vegetable oils (such as rapeseed oil, olive oil), vegetable oil-based products, fish as well as nuts and seeds. Some of the fatty acids in fats are essential because the body cannot produce them itself. These are linoleic acid (n-6 fatty acid) and alpha-linolenic acid (n-3 fatty acid). Linoleic acid is found in many soft fat sources, but sources of alpha-linolenic acid are less common. Vegetable oils containing alpha-linolenic acid include rapeseed, canola, linseed, camelina, hemp seed, soya and walnut oils. It is also found in walnuts. In order to ensure adequate intake of alfa-linolenic acid, daily use of rapeseed or canola oil or spreads made from these is recommended. Two to three fish meals per week supplement the intake of n-3 fatty acids, even if fish fat does not contain the essential alpha-linolenic acid. Attention should be focused on ensuring a sufficient amount of soft fat in the diet. This is because a study conducted in Finland showed that up to 85% of people over the age of 75 years who have chronic diseases and their informal caregivers consumed less polyunsaturated fatty acids than recommended.

Hard fat is contained in high-fat milk products, cheeses, butter and other butter-based spreads, meat and sausages, coconut fat and oil, and pastries baked with hard fats such as butter. Consumption of hard fats should be limited and replaced with soft fats.

The quality of dietary fat can be ensured by:

- using vegetable oil, a liquid vegetable fat preparation (so-called bottled margarine) or vegetable oil-based vegetable fat spreads (spreadable margarines) in cooking and baking, and added to vegetables
- selecting low-fat or non-fat dairy products (skimmed milk/buttermilk, other liquid dairy products and quark with a maximum of 1% fat, cheeses with a maximum of 17% fat)
- selecting vegetable fat spreads for bread that contain at least 60% fat and meet the Heart Symbol criteria
- choosing vegetable oil or an oil-based dressing for salads
- eating fish 2–3 times a week
- choosing lean meat products.

A medium-sized woman needs an average of 60 grams of fat per day, and at least 40 grams of that should be soft fat. For medium-sized men, the corresponding amounts are 85 grams and at least 60 grams.

The intake of essential fatty acids can be ensured, for example, by using a high-fat (at least 60% fat) spread that meets the Heart Symbol criteria on a daily basis. The recommending daily serving is 6 teaspoons (women)/ 9 teaspoons (men) and a tablespoon of vegetable oil.

7.5.1 Average nutritional content of meals

Recommendations for the intake of energy nutrients are presented as ranges in Table 6. The objective is for the majority of older people to have an energy nutrient intake that complies with the recommendations. If a specific number is needed, for example, when planning meal services, the average of the lower and upper limits of the range should be used. This means 18 E% for proteins.

Table 6. Average nutritional content of meals served, at the weekly level

	% of energy (E%)	g/day
Carbohydrates	45–60	
Dietary fibre		at least 25 for women, at least 35 for men
Protein	15–20 / 18	1.2–1.4 g/kg bodyweight/day
Fats	25–40	
• Saturated fatty acids	< 10, less than 1/3 of total fat	
• Polyunsaturated fatty acids	5–10	
• Essential fatty acids (linoleic and alpha-linolenic acid)	3	

7.6 Fluid requirement

Fluid need is individual and influenced by factors such as physical activity, age and the temperature in the surroundings. The calculated fluid requirement for people aged 55 or over is 30 ml/kg of bodyweight. Fluid deficiency is more harmful for older people than it is for younger people, because

- older people have less water in their bodies
- older people have a weaker sense of thirst than younger people
- many older people eat very little, which means they consume less fluid via food than normal.

Fluid deficiency and the resulting dehydration can be caused by

- fever, diarrhoea and vomiting; dehydration can develop very quickly
- medicines that cause dehydration
- very hot weather
- disease and frailty.

It is also important to note that certain diseases, such as heart and advanced renal failure, may require restriction of fluid intake.

As memory deteriorates, an older person may not remember whether they have had enough to drink or eat. The feeling of thirst is generally delayed and only indicates a fluid deficiency that has already started. When a person with a memory disorder is living at home, it is especially important to ensure that liquids are consumed, for example, by keeping a drink jug (see recommended beverages) within easy reach. If necessary, a note can also be left to remind the person to drink.

A decrease in drinking is often associated with incontinence. Loneliness can also disrupt drinking routines, and in some cases reduced mobility can complicate accessibility to beverages and lead to a decrease in drinking.

The recommended fluid intake is 1–1.5 litres (5–8 glasses) per day in addition to the fluids obtained with foods (Figure 4, p. 86). When sweating increases in hot weather, it's a good idea to add a few glasses of fluid to this number, while remembering that consuming a sugary drink always causes an acid attack in the mouth. Repeated consumption of sugary beverages between meals is harmful to the teeth.

Recommended beverages include:

- *water, mineral waters*
- *milk, buttermilk, yoghurt drinks, milkshakes*
- *100% fruit juices and juice soup.*

Milk-based beverages can increase daily energy and protein intake. The drinks should be something that the older person enjoys. If a person has difficulty swallowing, fluids that are thicker by nature, such as buttermilk instead of milk, and juice soup instead of

juice, should be the preferred choice. If necessary, thin beverages can be thickened with thickening agents available from pharmacies (see p. 77). Even slight thickening is often enough to facilitate swallowing. Excessive thickening should be avoided. Ingredients and foods with a high fluid content, such as vegetables, berries and fruit, and various soups, porridges and fruit or berry kissels, are also a good choice.

Signs of insufficient drinking are:

- thirst, dry mouth
- reduced need to urinate and darker urine colour
- other possible symptoms include headache, fatigue, reduced functional capacity, increased body temperature, constipation, confusion, dizziness and falling.

The fluid intake of people in long-term care should be monitored if there are problems with fluid intake. A person can drink more in the morning and during the day, but it is also important to offer sufficient fluids in the late afternoon and evening, because failing to provide enough fluids is harmful. Normal ageing involves daily variation in the anti-diuretic hormone, which means an older person may need to urinate 1–2 times a night.

Alcohol causes special problems for older people. Ageing decreases the fluid concentration in the body and slows down metabolism, which intensifies the effects of alcohol in the body (Section 8.7, p. 104).

Figure 4. Recommended drinking instructions for older people. Green: primary beverages. Yellow: other daily drinks. Red: alcohol in moderation.

7.7 Salt

Iodised salt is recommended for older people, as is the case with the rest of the population. The amount of salt should be kept at a moderate level and the taste of food enhanced by versatile use of spices, herbs and flavourful vegetables (Figure 5).

Studies indicate a direct link between salt intake and blood pressure. The population-level recommendation for salt intake is no more than 5 g per day, which corresponds to 2 g of sodium.

Older persons also experience hyponatremia, or a low level of sodium in the plasma. A low plasma sodium concentration does not directly refer to the total amount of sodium in the body – or sodium deficiency. It describes the relationship between total sodium and water volume in the extra-cellular fluid. This is why hyponatremia should not necessarily be interpreted as a deficiency in sodium (salt). The condition cannot be corrected by administering salt. Important causes of hyponatremia include medicines or alcohol use. It may also be related to heart, kidney and liver failure or some other disease. Hyponatremia can also be a sign of cortisol deficiency. When treating hyponatremia, it is essential to assess the urgency of correcting the condition and the patient's symptoms. Hyponatremia always requires a doctor's examination.

Figure 5. The flavour of food can be enhanced with various herbs and basic spices.

Sources

Jyväkorpi SK, Pitkälä KH, Puranen TM, ym. Low protein and micronutrient intakes in heterogeneous older population samples. Arch Gerontol Geriatr. 2015;61:464–471.

8 The impact of ageing and chronic diseases on nutrition and nutritional care

8.1 Physiological and pathological changes in body composition from the nutrition standpoint

Body composition and nutrition

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 (see below), extended hospitalisation and recovery time, risk of falling and death. Women are at greater risk of decreased capacity, because the protective effect of oestrogen ends after the age of 50 and they have less muscle than men to begin with. 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.

As the amount of muscle tissue decreases during ageing, the level of basic metabolism decreases. The reduction in muscle mass and muscle strength is explained by factors such as disease, low protein intake from the diet, as well as changes in physical activity and muscle nerve systems. Reduced muscle mass increases the risk of sarcopenia.

Sarcopenia

Sarcopenia is a muscle disease or disorder caused by changes in the muscles. The changes are primarily related to ageing, but muscle loss may also occur in middle-aged people in connection with disease. Sarcopenia is a progressive and comprehensive skeletal disorder that involves loss of muscle mass and reduced muscle strength. Sarcopenia increases the risk of falls, fractures, reduced immune response and functional capacity, and death. The diagnosis, prevention and treatment of sarcopenia should be a routine part of clinical patient work. It's underdiagnosed among older adults.

The underlying risk factors for sarcopenia include ageing, decreased physical activity, anorexia and unintended weight loss of weight in older people, and hormonal changes (oestrogen, testosterone). Women have a higher risk of decreased functional capacity due to sarcopenia than men, because oestrogen production decreases after menopause (Table 7). 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.

Table 7. Background factors for sarcopenia:

Nutrition	inadequate protein intake energy intake that is less than energy expenditure vitamin and/or mineral deficiency disturbances in nutrient absorption or other gastrointestinal disorders anorexia of aging
Activity	bed rest, immobilization low activity level
Diseases	musculoskeletal disorders cardiac and respiratory diseases metabolic diseases, especially diabetes neurological diseases, memory disorders liver and kidney diseases
Others	reduction in sex hormone secretion discharge from hospital substance use

The criteria for sarcopenia are (European Working Group on Sarcopenia in Older People):

1 low muscle strength
2 low muscle quantity or quality
3 low physical performance

Interpretation: 1 = probable sarcopenia, 1 + 2 or 3 = sarcopenia, 1 + 2 + 3 = severe sarcopenia

Assessment of sarcopenia

There are no precise indicators available for assessing sarcopenia. If an older person has difficulty coping with daily chores, feels weak or has fallen often, there is reason to suspect sarcopenia. The SARC-F questionnaire (see Tools, p. 153) is suitable for indirect assessment of muscle loss in practical work.

The quantity of muscles in clinical work is evaluated using a DXA measurement or bioelectrical impedance analysis (BIA). Tests to assess physical functional performance measure whole-body function in a diverse manner. These tests include Short Physical Performance Battery (SPPB), time required to walk 400 metres or simply walking speed. The SPPB test battery consists of three sections: balance, walking speed and chair rise test. The total SPPB result is calculated from the combined score of these separate sections. The muscle strength of the lower limbs is measured using the chair rise test, in which the person rises five times from a seated position as quickly as possible.

Recommendations

- Sarcopenia should be assessed in health care using the SARC-F questionnaire (see Tools, p. 153).
- Muscle strength should be assessed using a grip strength meter or a chair rise test.
- The recommendation and instructions for muscle strength training should be administered to every older person with suspected or diagnosed sarcopenia.
- Protein intake of 1.2–1.4 g/kg/day in combination with physical training is recommended for a person with sarcopenia or probable sarcopenia. For those recovering from disease, the recommended intake is higher, for example, approximately 1.5 g/kg/day.
- Adequate energy intake should be ensured.
- If possible, the amount of fat-free tissue should be evaluated by X-ray (DXA) or bioelectrical impedance analysis (BIA).

Regular exercise, muscle strength training, good nutritional status and sufficient protein and energy intake can slow and prevent the advancement of sarcopenia.

Gerastenia (Frailty)

Frailty 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. Although gerastenia is often connected to comorbidity, sarcopenia and deterioration in functional capacity, it is a separate phenomenon.

So far, there is no precise and generally accepted definition for gerastenia. The most commonly used methods for diagnosing the condition are related to phenotype (phenotype criteria or frailty index).

The phenotype criteria of Fried and colleagues comprise the following five findings or symptoms:

1) unintentional weight loss (over 4.5 kg during the previous year)
2) subjective exhaustion
3) low physical activity
4) slowness (falling into the bottom one-fifth in walking speed in relation to height and gender)
5) weakness (falling into the bottom one-fifth in grip strength in relation to gender and BMI).

According to this definition, a person is frail if three or more of the criteria are met, and pre-frail if 1–2 of the criteria are met. Defined in this manner, the incidence of gerastenia in people over the age of 70 is approximately 10%. It should be noted that weight loss is only one of the phenotype criteria for frailty. Other possible causes of weight loss must also be taken into account (see section 8.4, the effect of disease).

Frailty index is calculated on the basis of a combination of an individual's symptoms, disease and functional deficiencies. A physician calculates the index. There is currently no uniform practice for this calculation in Finland, but it can be combined with data collected electronically from the patient, making it easily accessible from the IT system. 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.

Gerastenia and nutrition

In addition to a low level of physical activity, deterioration in nutritional status and unintentional weight loss are considered the most important risk factors in gerastenia. 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 gerastenia. 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. However, the connection between gerastenia and nutrition is complex at the individual level. A weakened nutritional status, sarcopenia and gerastenia are often interconnected, but they may also occur independently. In combination, they can strongly accelerate the impairment of functional capacity (Figure 6, p. 92).

The diet of a frail patient should contain sufficient energy. Increasing energy intake by 250–500 kcal per day for 1–3 months can bring about a weight increase of 1–3 kg. Food containing hard fats should be restricted in favour of those containing soft fats (Section 7.5, p. 82). Protein intake should be 1.2–1.4 g/kg/day (Table 6, p. 84). 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 gerastenia, weight loss should be stopped in order to slow progress of gerastenia. The best results may be obtained through broad-based treatment that addresses nutrition as well as physical and cognitive training.

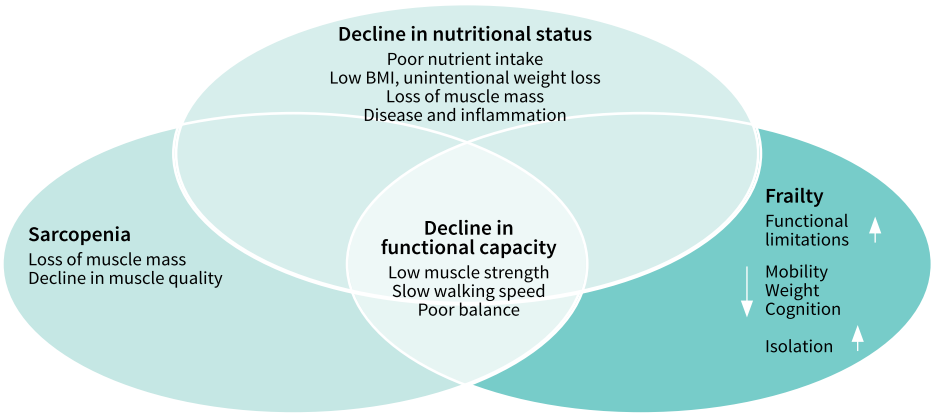

Figure 6. The combination of a decline in nutritional status, sarcopenia and frailty accelerate deterioration in functional capacity

Cachexia (wasting disease)

Cachexia refers to tissue and weight loss associated with an underlying disease, 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. 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 (elevated inflammation indicators, low albumin level and anaemia). Cachexia cannot be corrected by means of nutritional measures, and since the underlying disease is usually advanced, treatment is mostly palliative and strives to preserve existing reserves.

8.2 Changes in the digestive tract

The feeling of hunger and thirst and sense of taste and smell

Older people often have less appetite and a weaker feeling of hunger than younger people. Sensations of hunger and thirst are suppressed because ageing changes functions in the hypothalamic control centre. The control centre also becomes more sensitive to disturbances with age. The secretion of digestive enzymes decreases and the stomach empties slower, which causes a feeling of fullness to develop rapidly. Peristalsis of the intestinal tract also slow, making an older person more susceptible to constipation.

The senses of taste and smell often diminish as a person ages. The reasons for this include a decrease in the number of taste and smell receptors caused by ageing, disease or medication. A decline in the senses of taste and smell can predispose a person to poor appetite and weaker nutrition (see Tools, SNAQ Evaluation of appetite, p. 166). Changes in senses may reduce the amount of food eaten or restrict the variety of food.

Mouth and teeth, saliva secretion

The senses of taste and smell weaken with ageing. This decreases the appetite and makes a person susceptible to poor nutritional status. An older person may also experience difficulties with chewing and swallowing. Saliva secretion also decreases. Dry mouth is common among older people due to age-related physiological changes, diseases and medications. The oral health of older persons is described in more detail in Section 10 (p. 114).

Stomach

Emptying of the stomach slows as a person ages. This increases the feeling of fullness and weakens appetite. Secretion of gastric juice also decreases with age. As the amount of pepsin in gastric juice decreases, there is a decline in the breakdown and utilisation of protein. This leads to a slight increase in the need for protein. A decrease in secretion of gastric intrinsic factor reduces absorption of vitamin B_{12}.

In addition to the physiological changes brought about by age, older people may have medications or disease that affect stomach secretions. Commonly used proton pump inhibitors reduce the secretion of hydrochloric acid and, when used on a long-term basis, may decrease the absorption of vitamin B_{12}, iron, calcium and magnesium. Atrophic gastritis is more common among older people than in people of working age. Atrophic gastritis may be caused by helicobacteria or associated with some autoimmune diseases or medications. Atrophic gastritis reduces absorption of vitamin B_{12} and folate. When a vitamin B_{12} deficiency is diagnosed, the client is given a prescription for a vitamin B_{12} preparation or, in the severe cases, vitamin B_{12} injections.

Pancreas and liver

Secretion of pancreatic enzymes often decreases with age, but the significance of this is probably slight. The blood circulation of the liver also weakens and elimination ability slows. This affects the metabolism of medicines and slows their elimination from the body.

Small and large intestine

The degeneration of small intestine villi caused by ageing reduces the surface area for absorption. The effect this has on nutrient absorption is still unclear. Transit time in the small and large intestine slows, which can predispose a person to constipation and may affect the intestinal microbes. However, there is still very little research on this topic.

Table 8 lists the physiological factors associated with normal ageing that have an effect eating and nutrition response.

Table 8. "Physiological" factors affecting eating and nutrition response when ageing

Increase in adipose tissue
Decrease in lean body mass (muscle mass, internal organs)
Decrease in water content
Decline in glucose metabolism
Decreased protein synthesis
Hormonal changes (growth hormone, sex hormones, cortisol)
Impairment of mechanisms in apetite regulation
Impairment of sense of thirst
Impairment of sense of taste or smell
Changes in the mouth and teeth
Decrease in physical activity
Decrease in absorption of vitamin B_{12}

8.3 Obesity and weight loss

Obesity is linked to cardiovascular diseases, type 2 diabetes, hypertension, non-alcoholic fatty liver disease, reduced functional capacity and increased need for assistance. The decline in functional capacity increases the risk of falling and likelihood of having to enter institutional care. According to the FinHealth 2017 Study on Finnish pensioners, 59% of women and 53% of men had abdominal obesity. In addition, based on BMI, one in four men and one in three women aged 65 or over were overweight.

On the other hand, the concepts of overweight and slightly overweight are not unequivocal among older people. This has been referred to as the so-called "obesity paradox", in which overweight appears to be a protective factor, especially for the oldest segment of the population. For example, overweight and – in connection with some disease – even mild obesity in people over the age of 70 years of age are connected to a smaller risk of premature death. This does not necessarily represent a causal link, and the negative impacts that overweight or obesity have on quality of life also have to be taken into account.

The risk of premature death appears as a U-shaped curve. In the different BMI categories, with the highest risk of premature death risk occurring in people who are underweight or very overweight while those who are slightly overweight have the longest life expectancy. However, BMI alone does not distinguish between people who have always been slim and have intentionally lost weight and those who lose weight unintentionally, usually in connection with disease and reduced functional capacity. Furthermore, height usually decreases as a person ages, which makes it seem like BMI is increasing even when the weight of an older person remains the same.

As a result of the above-mentioned factors, a slightly higher BMI of 24–29 kg/m^2 is recommended for older persons (> 65 years) than for younger adults.

However, this does not mean that an older person who has always been slim would have a nutrition risk if their BMI was below 24. Maintaining a stable weight is most important. The recommendation for normal and overweight older persons is also to maintain a stable weight, follow a diet that meets their nutritional needs, and get daily physical activity. Nutritional status is also assessed for overweight people, because they may also have poor nutritional status.

Sarcopenia and obesity

Both sarcopenia and obesity are a health risk for older people, but especially in combination they increase many health-related risks and cause earlier onset of mobility problems. This combination is referred to as sarcopenic obesity. Weight fluctuations are particularly harmful in sarcopenic obesity. The muscle tissue lost due to weight fluctuation easily comes back as fat tissue when weight increases again. This is why it is extremely important to maintain a certain weight.

Unintentional weight loss

Unintended weight loss caused by reduced functional capacity, poor appetite, chewing or swallowing problems, or disease is always harmful to the health of an older person. It is linked to sarcopenia and gerastenia, reduces quality of life, and increases mortality. Weight loss should be prevented and addressed as quickly as possible before the situation worsens.

Intentional weight loss in an older person

Weight loss is usually considered for an older person when the body mass index exceeds 30 kg/m^2 or when the weight is rising and the extra weight interferes with mobility. However, body mass index can be a poor indicator at the individual level. It is important to emphasise the preservation and strengthening of muscle mass as a person ages. The need for weight loss is usually related to some other disease (for example, type 2 diabetes, musculoskeletal problems) or functional capacity deficiencies. The objective of weight loss is to improve this situation. Health care professionals should assess the benefits and drawbacks of weight loss on a case-by-case basis and take the prevention of sarcopenia and loss of bone mass into consideration. There is no research evidence concerning the benefits of weight loss in people over the age of 75, and any measures must be based on a comprehensive geriatric assessment and, if necessary, consultation with a geriatrician.

If weight loss is considered appropriate for an older person, the energy deficit should not exceed 500 kcal/day and the diet should also be balanced and meet nutritional needs. If the older person has sarcopenia, the energy deficit should be even lower, approximately 250–500 kcal/day, to ensure slow weight loss and make it possible to

maintain muscle mass. The diet should provide least 1.2 g/kg bodyweight/day of protein. If the body mass index is greater than 30, protein intake should be proportional to a weight equivalent to a BMI of 30. During the weight loss, it is important to ensure an adequate intake of calcium and vitamin D, and always combine muscle strength and aerobic exercise with weight loss to preserve muscle and bone mass and improve functional capacity. In studies where weight has been reduced by restricting the diet alone, a relatively large amount of both muscle and bone mass has been lost. Weight loss aims at a decrease of 5–10% over six months, while ensuring that weight loss is no more than 1 kg/month. If the person is very overweight, a nutritionist will compile an individual plan. Very large energy restrictions in which the daily energy intake is less than 1,000 kcal are not recommended for older people.

Meals and food choices that support weight control:

- Vegetables, root vegetables, berries and fruit as such and prepared in various ways at all daily meals and snacks to reduce the energy content of meals.
- Ensure that the amounts of food eaten are reasonable in size.
- Management of eating is supported by conscious, calm eating and, if necessary, by arranging the opportunity to have snacks between main meals.
- Select products containing less energy, less fat and less sugar.
- Non-fat and low-fat liquid dairy products and portions of fish, poultry and meat are important sources of protein.
- Drinks, chocolate, sweets and biscuits containing sugar are only used occasionally.
- Weight is regularly monitored at least once a week.

BMI over 30 and weight is increasing

Attention should be focused on the following issues:

- Unhurried meals, guiding fast eaters to chew their food thoroughly.
- Offering water at the start of the meal.
- Avoid prohibiting things and provide positive counselling.
- Support self-initiative.
- Ensure a variety of foods and the provision of low-fat, high-protein foods and beverages.
- Request a nutritionist's opinion concerning the appropriate energy level and any food supplements that may be needed.
- An energy intake that is too low is harmful.
- Encourage the client to increase the amount of vegetables in the meal.
- Primarily serve fruit or berries as snacks, with a biscuit, small coffee bun or piece of jelly roll as an alternative.
- Agree with family members concerning what kind of snacks they bring, for example, seasonal berries or fruit.

8.4 The impact of chronic diseases on nutrition and nutritional care

Many chronic diseases can weaken nutritional status by means of different mechanisms. Sometimes they are the first symptom of an underlying disease. Unintentional loss of weight on the part of an older person should not automatically be regarded as gerastenia, and diagnostics should also take possible disease into account as the cause of the weight loss. On the other hand, diseases often reveal other symptoms that primarily lead to a doctor's appointment, with weight loss only becoming apparent as the disease progresses. In this case, nutritional status should be taken into account during treatment and the recovery and rehabilitation process should be supported by nutritional care.

Many cancers cause unintentional weight loss, and the combination of weight loss and fatigue may be the first symptom of the disease. Digestive tract cancers, lung cancer, urinary tract cancers and lymphomas are typical examples of cancers that may cause unintentional weight loss. At a later stage, advanced cancer can lead to weight loss and ultimately to cachexia. Advanced congestive obstructive pulmonary disease (COPD), cardiac or renal failure can also lead to poor nutritional status and cachexia.

Other digestive tract disorders can also cause weight loss. These include oral, dental and swallowing problems. The many aetiologies of swallowing disorders are described in Table 9 (p. 100). Various inflammatory disorders of the colon, ulcers in the upper digestive tract, untreated coeliac disease and other absorption disorders may weaken nutritional status.

Endocrinological causes, such as hyperthyroidism, can lead to weight loss by accelerating the metabolism. Diabetes in older people may also appear as weight loss when the body is unable to utilise glucose. Acute and chronic infections, for example, intestinal infections, pulmonary diseases, HIV and rheumatic diseases can weaken nutritional status. Low-grade inflammation causes muscle loss and frailty accelerates the decline in nutritional status.

Cerebral circulatory disorders may involve difficulty swallowing and other functional deficiencies that weaken nutritional status. Parkinson's disease, Parkinson Plus syndromes, MS, ALS and myasthenia gravis are associated with difficulty in swallowing, weight loss and frailty.

Depression in an older person may lead to a lack of appetite, weight loss and frailty. Older people may also develop anorexia, which is often associated with comorbidity, as well as a decline in cognition and functional capacity.

The many symptoms and problems associated with the nutritional status of an older person and the need to investigate them are presented in Table 9 (p. 100). The condition and personal preferences of the older person must be taken into account when investigating aetiology.

8.5 Nutrition and memory disorders

Recommendations

- The nutritional status of a person with a memory disorder should be assessed at least twice a year and more often if the nutritional status has deteriorated.
- Nutrition and meals for a person with a memory disorder should be supported in a manner suitable for that person.
- A person with a memory disorder should be weighed regularly, at least once a month, and the result documented in order to detect unintentional weight loss.
- The meal situation should be home-like and pleasant and it should include
  - a calm situation
  - company
  - the good aromas of food
  - a nicely set table, tablecloth, a good chair and utensils that are easily percieved and suitable for the elderly
  - a suitable temperature and lighting in the dining area.
- Taking individual eating preferences into account ensures sufficient nutrient intake for a person with memory disorder.
- Unnecessary dietary restrictions should be avoided.
- Nutritional supplements are recommended if the nutritional status is at risk of deteriorating or has clearly deteriorated.
- Nurses should be given training related to the nutrition of a person with a memory disorder and their professional skills supported with regard to dealing with a decline in nutritional status and eating problems.
- End-stage treatment of memory disorders involves symptomatic and good palliative care. Enteral feeding is not used when treating people with memory disorders.

A person with a memory disorder often loses weight before the diagnosis, and weight loss and frailty may be the first symptoms of the disease. As cognition declines in the early stage of the disease, problems with acquiring, preparing and eating food may already be apparent. In the early stage of the disease, a person with a memory disorder may also withdraw from social relationships and have depression, which has a negative impact on appetite and a balanced diet.

A memory disorder like Alzheimer's disease may involve changes in the brain that alter the feelings of hunger and fullness. Many neuropsychiatric symptoms, such as anxiety, inability to concentrate, anxiety and delusions, may occur as the disease progresses. These symptoms can interfere with meal situations. The advanced stage of a memory disorder includes disturbances in eating behaviours, such as inability to eat, making a mess with food and a tendency to disrupt eating situations (see Tools, Spoon-to-mouth exercise session for treating people with memory disorders, p. 167).

It has been suggested that the weight loss associated with memory disorders might be due to an increase in energy consumption caused by the disease. This has not been proven in studies. Weight loss is always caused by energy intake that is lower than energy consumption. This may be a result of increased energy consumption due to restlessness and wandering or decreased nutrition intake because of reduced functional capacity, perception difficulties and behavioural symptoms. Eating may decrease without being noticed: even an energy intake deficit of a few hundred kilocalories per day can cause significant weight loss, muscle loss and a decline in functional capacity if it continues over a period of weeks or months.

Infections, other disease and medications may increase the need for nutrition, affect digestion and the absorption or utilisation of nutrients in the body. Medication for memory disorders may cause nausea and diarrhoea, which may further accelerate weight loss. This should be investigated, and the medicine replaced with something more suitable for the individual. Oral health and the condition of teeth have a significant impact on the nutritional status and eating of a person with a memory disorder, but that person may not always be capable of expressing their problems or pains. As a memory disorder progresses, the implementation of oral self-care usually becomes more difficult. This means that the person may not be able to handle their own oral hygiene and will require help from a member of the family or care staff.

The quality of the diet plays an important role in preserving brain and cognitive functional capacity even when a memory disorder has already been diagnosed. The significance of nutrition and meals changes somewhat as a memory disorder progresses. In the early stages, it is important to ensure a diverse diet, sufficient nutrient intake, exercise and social activity, which may prevent progression of the disease. Diversity of food remains important as the disease progresses to the dementia stage, but sufficient energy and protein intake is emphasised as cognition deteriorates, neuropsychiatric symptoms increase and the daily rhythm changes. In this case, it may be necessary to utilise an enriched diet and also nutritional supplements in many cases. During the end stage, eating often becomes more difficult because increased swallowing difficulties

are part of the clinical picture. Dementia is a fatal condition that requires palliative and terminal care during the end stage.

The nutritional status and nutrient intake of a person with a memory disorder should be assessed in connection with the diagnosis. In addition, it is important to determine whether a person with a memory disorder is able to go shopping, buy and prepare food and ensure the diversity of their diet. Assessing the nutritional status of a person with a memory disorder, see Section 4, p. 58.

Table 9 lists the digestive tract symptoms that impair nutritional status and the possibilities to treat them.

Table 9. Gastrointestinal symptoms and related background factors that may impair nutritional status.

Gastrointestinal SYMPTOMS	**AETIOLOGY / Diagnostics**	**MATTERS TO BE CLARIFIED IN MEDICAL EXAMINATION**	**TREATMENT POSSIBILITIES (in addition to treating the basic cause)**
Constipation	Low fibre and fluid consumption lack of physical activity, ignoring the need for bowel movements	Overview of food and fluid intake, overview of physical activity, functional capacity	Adding fluid and fibre to the diet. More exercise. Constipation medications that add to the volume of the intestine. Laxatives used with care.
	Intestinal obstruction (tumour, diverticulum, stenosis, fissure)	Pain, bloody stool, change in stomach function, general symptoms, duration of constipation	
	Many neurological diseases: Parkinson, MS, stroke Many endocrine diseases: diabetes, hypothyroidism, etc.	In the case of a new symptom, endoscopic examinations of the digestive tract should be considered. Depending on the symptom, consideration of laboratory tests	
	Adverse effects of medications: opioids, anticholinergics, antacids, iron, calcium blockers, beta blockers, long-term use of stimulating laxatives	Assessment of medication	Terminating, reducing or replacing the medication causing constipation

Gastrointestinal SYMPTOMS	AETIOLOGY / Diagnostics	MATTERS TO BE CLARIFIED IN MEDICAL EXAMINATION	TREATMENT POSSIBILITIES (in addition to treating the basic cause)
Diarrhoea (chronic)	Gastrointestinal tumour Many diseases: diabetes, colitis, functional intestinal syndromes, coeliac disease, absorption disorders, lactose intolerance, chronic pancreatitis, hyperthyroidism, AIDS. Small intestinal bacterial overgrowth, bile acid diarrhoea, various intestinal infections such as *Cl. Difficile*	Blood General symptoms Duration Pain Travel Weight loss In the case of a new symptom, endoscopic examinations should be considered. Based on symptoms and findings, selected laboratory and functional tests	Diarrhoea medication for short-term use Addition of water-soluble fibre to the diet Probiotics
	Adverse effects of medications: SSRIs, SNRIs, metformin, antibiotics, PPIs, Alzheimer medications, gliptins, NSAIDs, many natural products, xylitol, sorbitol	Assessment of medication	Terminating, reducing or changing the medication causing constipation
Vomiting (chronic)	Gastrointestinal tumour, obstruction, gastric or duodenal ulcer, gastritis, reflux	General symptoms Weight loss Jaundice Neurological findings Endoscopic examinations	Symptomatic nausea medications should be considered individually according to aetiology
	Infections Cerebrovascular disorder, increase in cerebral pressure (brain tumour) Epilepsy Migraine (very rare among older people). Benign positional vertigo Other ear-related causes Thyrotoxicosis Poisoning	Based the symptoms, individual further examinations	
	Adverse effects of medications: AChEI medications, SSRI medications, digoxin poisoning, opioids, antibiotics, cell blockers	Assessment of medication	Benefits and drawbacks of medications should be considered

Gastrointestinal SYMPTOMS	AETIOLOGY / Diagnostics	MATTERS TO BE CLARIFIED IN MEDICAL EXAMINATION	TREATMENT POSSIBILITIES (in addition to treating the basic cause)
Swallowing difficulties (chronic)	Cerebrovascular disorder, end stage memory disorder (dementia), Parkinson's disease, MS, ALS Cancer (head and neck area, pharynx, oesophagus) Oesophageal inflammation, reflux, diverticulum, motor disorders Large diaphragmatic hernia Thyroid tumour, goiter Psychological reasons	General symptoms Neurological symptoms Weight loss Pain Aspiration Pulmonary infections Oral and pharynx examination, thorough clinical examination Neurological findings Endoscopic examinations Further examination according to symptoms and findings.	Treatment according to aetiology. In the case of an incurable neurological disease, consultation with a speech therapist. Positional treatment while eating, serving food in an easily swallowed form, thickening of beverages.

PPI = Proton pump inhibitors, SSRI = Selective serotonin reuptake inhibitors
SNRI = Serotonin-noradrenaline reuptake inhibitors, AChEI = Acetylcholinesterase inhibitors
ALS = Amyotrophic Lateral Sclerosis, MS = Multiple Sclerosis

8.6 Nutritional rehabilitation and international classification of functional capacity

Nutrition problems are common among older people. Nutrition should always be seen as an important part of the overall assessment, treatment and rehabilitation of older people. Nutritional rehabilitation is sometimes the most important form of rehabilitation and improving nutritional status is the key objective. A typical situation of this type is frailty, which is always accompanied by physical rehabilitation. However, deterioration in nutritional status and risks are often associated with other gerontological challenges, such as comorbidity, loneliness, cognitive decline, financial or social problems. In this case, a comprehensive assessment always includes an evaluation of nutritional status and the addition of nutritional status improvement to the rehabilitation and treatment plan.

Rehabilitation has been defined as a process of change in a person and the environment, the aim of which is to promote the client's functional capacity, independent coping and well-being. The International Classification of Functioning (ICF) is used as the reference framework for rehabilitation (Figure 7, p. 104). It describes the impacts that disease and functional impairments have on an individual's life. ICF understands functional limitations as a dynamic, multidimensional and interactive state resulting from the combined effects of health status and individual and environmental factors. Nutritional status and nutritional rehabilitation are always part of the dynamic state of an older person, which can enhance or weaken their functional capacity and rehabilitation. ICF makes it easier to understand how the different dimensions in a person's life can affect the nutrition of an older person and therefore also their functional capacity and quality of life.

Nutrition is related to all ICF factors and should be taken into account when planning nutritional rehabilitation (Figure 7, p. 104). In terms of health status, possible diseases affecting frailty should be investigated and treated. The rehabilitee may have many symptoms and problems related to body structures or function that should be resolved. For example, nutritional status, mobility and the degree of frailty should be determined using valid indicators, and rehabilitation should be planned accordingly. Influencing the environment using various rehabilitation and service methods can promote good nutrition and thus improve frailty. Social participation, physical activity and social relationships may, for example, influence motivation and appetite. Social eating makes meals taste more delicious than eating alone. A person's own preferences and needs, the food culture adopted by their generation, level of education and motivation influence the type of food that person enjoys and how they eat. All factors affect functional capacity and whether or not health-promoting diets, meals and eating are possible.

Nutritional rehabilitation is successful if all these dimensions are taken into account in the plan. On the other hand, consideration of nutrition and its different dimensions is an important part of the comprehensive geriatric assessment and rehabilitation of older people.

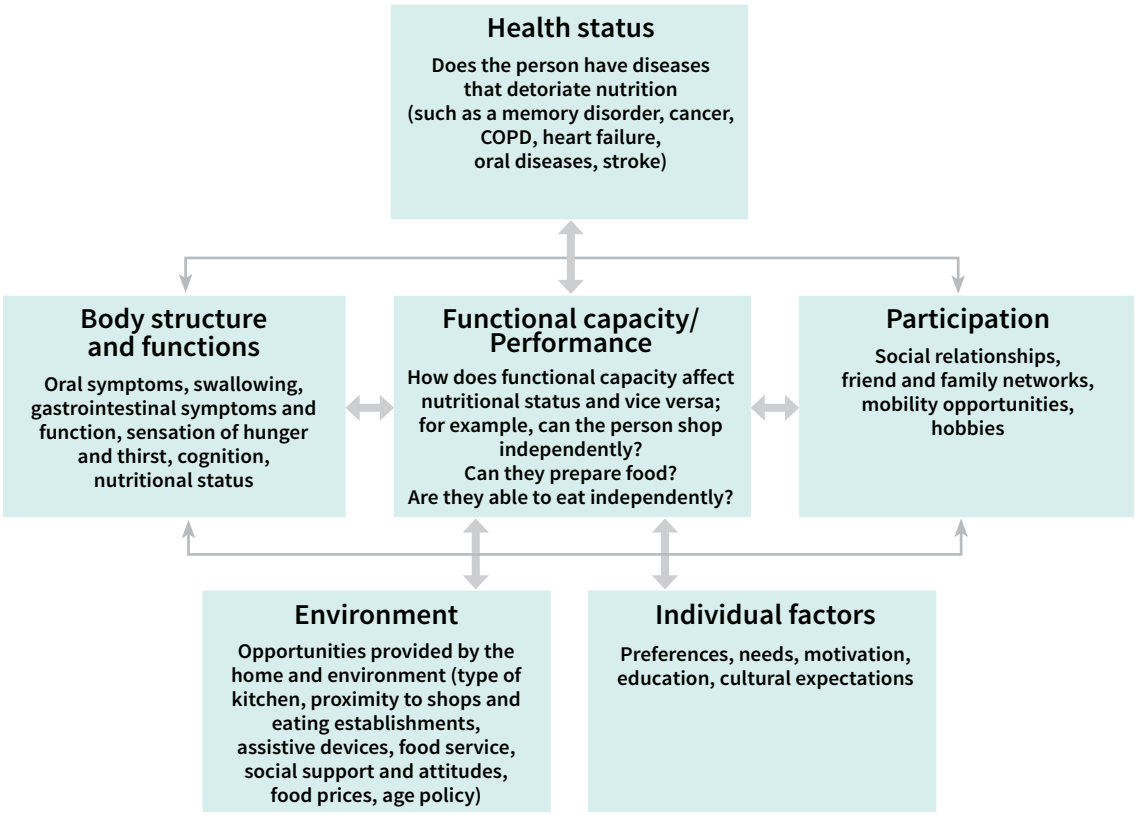

Figure 7. Interactions between components of the International Classification of Functioning (ICF) that affect the success of nutritional rehabilitation related to, for example, frailty.

8.7 Nutrition problems caused by heavy alcohol use

Alcohol consumption among people aged 65 or over has increased in recent decades, and that trend seems to be continuing. The large age groups that grew up in a more alcohol-friendly society are now retiring. Previously adopted alcohol consumption habits and behaviours generally continue after retirement. People with alcohol dependency continue to consume a lot of alcohol, and it has also been estimated that one third of heavy drinkers only become alcoholics at retirement age. On the other hand, the onset of disease may also reduce earlier consumption.

Heavy consumption of alcohol is known to be harmful to the physical, psychological and social well-being of people. The changes brought about by age make older people more susceptible to these adverse effects in the body. As a person ages, the water content in the body decreases and fat content increases. This reduces the volume of distribution for certain medications and alcohol and subsequently increases their concentrations. A decrease in functioning of the alcohol dehydrogenase enzyme in the stomach also has

the same effect. These all mean an increase in adverse and synergistic effects. Ageing slows the elimination of many medications from the body, as liver and kidney function decreases.

People who consume a lot of alcohol may have an unbalanced diet and low nutrient intake, which can lead to an increase in skin symptoms and slow wound healing. Alcohol also dries the mouth and causes mucous membrane changes in the mouth and increases the risk of oral cancer. The sugar contained in alcoholic beverages is harmful to dental health. Poor oral health can cause pain, which reduces eating and increases the risk of malnutrition. Diversifying the diet and limiting alcohol consumption is important. For people with a long history of alcohol consumption, enriched nutritional care is often necessary to improve their nutritional status. Nutrition therapy can improve the nutritional status of an older person, but the treatment outcome is poor if alcohol consumption continues.

Electrolyte disorders and vitamin deficiencies are a particular nutritional feature associated with heavy alcohol consumption. It is also very important to ensure the electrolyte balance (potassium, magnesium, phosphate), and the intake of vitamins (thiamine, folate, multi-vitamins) and glucose when treating alcohol withdrawal symptoms. Vitamins should be administered before glucose to reduce the risk of Wernicke's encephalopathy. Since the symptoms of withdrawal are hard on the body of an older person, the client's nutritional status and other diseases should also be treated thoroughly.

As a person ages, many diseases and the use of medicines become more common. This increases the risk of interactions between alcohol and medicines, even if the alcohol and medicines are not consumed at the same time. Disease and medication also make a person susceptible to the adverse effects of alcohol. Alcohol can increase or weaken the effect of active substances and it also affects blood sugar levels.

A person's sense of balance and motor skills deteriorate as they age, which increases the risk of falling and susceptibility to an excessive drop in blood pressure when in the upright position. Memory, sensory functions, motor skills and coordination also deteriorate in all older people, but excessive use of intoxicants further contributes to this decline. For example, memory disorders can begin with depression, which is reinforced by intoxicants. Melancholy, shame, guilt and depression, on the other hand, may increase the use of intoxicants. In combination, these factors can cause inadequate eating or consumption of an unbalanced, nutrient-deficient diet.

As a general rule, alcohol is not recommended for older people at all. However, the maximum recommendations for alcohol intake are no more than one serving per day and seven per week. According to the latest studies, alcohol consumption does not provide any health benefits. The observations made in some studies concerning the fact that older people who consume alcohol are healthier than others are due to the fact that diseases and reduced functional capacity often lead to a decrease in alcohol consumption and termination of use. However, it should be remembered that so-called social drinking may also involve aspects related to the individual's quality of life that are not medical in nature.

8.8 Special situations

Constipation

In constipation, the bowel functions rarely and/or the bowel movement is difficult or painful. The most common causes of this are insufficient fluid intake, low-fibre food and a lack of physical activity. The tendency to constipation is common among older people. Medications can also cause constipation. When assessing constipation symptom, the starting point is to determine the cause. When treating functional constipation, diet is an important form of treatment. Fibre from cereals is the most effective way to increase intestinal volume. Cooked vegetables contain just as much fibre as fresh ones, and are often better suited to older people than fresh vegetables. The minimum fibre content in the basic diet should be at least 25 g/day for women and 35 g/day for men. Texture-modified diets are challenging in terms of fibre intake.

Wholegrain bread is the most important source of fibre for Finns. If necessary, rye breadcrumbs mixed into the food can be served in addition to or instead of bread. Pajala porridge is very high in fibre and can be served on 2–3 days a week (Appendix 2, p. 173). The client should be offered dried fruit (apricot, prune) and fruit purée (apricot, peach, mango, apple and plum). Buttermilk, yoghurt, curd milk and juices containing lactic acid bacteria may also be beneficial. Some people benefit from the use of vegetable oil, for example, by adding one tablespoon to porridge in the morning.

TIPS for dietary treatment of constipation

- **Bran can be mixed with curd milk and yoghurt. Oat, wheat, rye or buckwheat can already be added to most porridges and gruels during preparation. The use of bran should be started with small amounts. A suitable initial serving is 1 tablespoon, which is gradually increased to 2–3 tablespoons per day.**
- **Rye breadcrumbs, wholegrain muesli, wholegrain breakfast cereals and talkkuna* flour can be mixed into buttermilk, curd milk and yoghurt.**
- **A maximum of 2 tbsp of crushed linseed (15 g)/day can be used.**
- **Fruit purées can be served with porridge and curd milk or on their own.**
- **Stewed prunes or plum nectar can be served on 2–3 days a week.**

* Talkkuna is powdered mixture of dried oats and barley (and peas).

Sufficient liquid

Fibre with plenty of liquid softens the faecal mass, increases bowel movement and function. The daily food usually provides 700–800 ml of liquid. Drinking approximately 1.5 litres of liquid is also recommended if the client has no fluid restriction. Suitable drinks include water, diluted sugar-free juice, non-alcoholic home-brewed beer, milk, buttermilk, coffee and tea. The teeth can withstand 5–6 acid attacks per day, so dental care must be ensured if the client eats or drinks more often. Sugary beverages or drinking a lot of tea can increase the tendency to constipation.

Gout

Sufficient intake of liquids is important when treating gout. Around 2–3 litres of energy-free and low-energy sugar-free liquids should be consumed litres per day if the client has no fluid restriction. Alcoholic beverages increase the risk of a gout attack. Like alcohol, beer contains plenty of purine compounds. Tolerance for foods containing a lot of purines is individual. Internal organ meats and small fish eaten with the skin, such as vendace, sardine, anchovy and herring, contain a lot of purine compounds. Chicken skin is also rich in purines. Meat and poultry and fish without the skin contain a moderate amount of purines. Normal, single portions rarely cause any symptoms. The amount of purines contained in vegetables is generally insignificant.

Moderate weight loss in overweight persons eases the symptoms of gout. A suitable rate of weight loss rate is 1 kg/month. Rapid weight loss is harmful to a person with gout.

The Basic diet should be ordered for gout patients. In residential care, a normal portion of food with a high purine content can be served, for example, once a week. For example, if a customer has symptoms on days that fish is being served, a personal diet should be ordered on those days. Diet counselling should be given to clients who are being discharged. A consultation with a nutritionist should be requested if necessary.

Cholelithiasis

Any ingredients, food items and beverages that may cause symptoms should be determined during the arrival discussion. Restrictions are usually unnecessary following removal of the gall bladder. Clients should be encouraged to expand their diet. For example, small quantities of peas can be tried in a salad and onions can be mixed into other food. Beans, cabbage, unpeeled cucumber and apple, peppers, sorbitol and fresh bread and coffee bread may also cause symptoms. However, vegetables may be suitable when cooked, peeled or in small quantities and bread and coffee buns when they are a day old or toasted. Unnecessary restrictions should be avoided.

The Basic diet should be ordered for the client. For example, if pea soup causes strong symptoms, a personal diet should be ordered on that day. Moderation in the quantity of fat is important. Use of fat and spices in basic food should be moderate.

Rapid weight loss increases the risk of gallstones. If the physician estimates that weight loss is necessary, the principles of moderate weight loss for older persons should be followed. This means the maximum weight loss should be 1 kg/month.

Parkinson's disease

For a person with Parkinson's disease, the aim is to maintain a suitable weight, ensure sufficient intake of energy, protein, essential fatty acids, fibre and fluids, and serve food with a texture that meets the client's ability to swallow.

According to individual suitability, the Basic diet should primarily be ordered for the client. An enhanced diet in a suitable texture should be ordered for people with malnutrition. Oral nutritional supplements should be used if necessary to ensure sufficient nutrition intake. Products should be selected and consumed according to individual needs so that the amount of total energy and protein in the diet support good treatment.

When treating Parkinson's disease, it is important to schedule the administration of dopamine medication at least half an hour before or one hour after the meal. The efficacy of dopamine medication decreases over time. Some clients benefit from individual planning concerning the timing for consumption of high-protein foods. Consultations with a nutritionist and physician are needed to optimise the effect of medication and prevent malnutrition.

If necessary, the focus of protein intake in a Parkinson's diet can be shifted to the afternoon and evening. If protein intake has to be timed due to the client's clinical condition, sufficient protein intake at the daily level has to be ensured. Regular weight monitoring is important. If the client's appetite or ability to swallow deteriorates, nutrition should be enhanced without delay. The texture of food should also be modified to make swallowing easier. If a speech therapist assesses that oral food intake is safe for the client, a Smooth purée diet should be selected. A Soft diet is often the best option in the case of other eating problems. Dry mouth is a common symptom taken into account in treatment. Constipation that is common and difficult (see Constipation, p. 106), cannot usually be fully corrected by means of diet and medication. Consultation with a physician is necessary.

Diabetes

A Basic diet is usually suitable for clients with diabetes. The diet should be low in sugar, low-fibre cereals, hard fat and salt, and contain plenty of dietary fibre and a moderate amount of soft fat. Treatment is mainly consistent with the symptoms in very old persons and those in poor condition. If necessary, the diet should be flexible to avoid increasing the risk of malnutrition. Weight should be monitored as a result and also because excessive weight gain is harmful. A balanced and nutritionally adequate diet is important for maintaining functional capacity. High-fibre foods and soft fat

sources should be favoured. Physical activity is also important. Non-fat or low-fat dairy products should be selected as food beverages, with a fatty (at least 60% fat) vegetable fat spread for bread A regular meal rhythm facilitates treatment. Very few people with diabetes require extra snacks with current insulin treatments. If necessary, an artificial sweetener can be used to sweeten coffee and tea. If a client with type 2 diabetes uses multiple-dose injection therapy, the amounts of mealtime insulin are adjusted according to meal size. If a client with type 1 diabetes has multiple-dose injection therapy upon arrival, insulin therapy and food are matched by means of carbohydrate counting. A consultation with a nutritionist should be requested if necessary.

Blood thinning medication, anticoagulation therapy

In terms of blood thinners, the efficacy of warfarin (Marevan) is influenced by the amount of vitamin K in the diet. It should not fluctuate greatly from one day to another. Vegetables, root vegetables, fruit and berries are recommended according to basic food guidelines. Grapefruit and cranberry juice may increase the efficacy of the medicine and are therefore not recommended. The basic diet should be ordered and the client encouraged to eat portions of vegetables, fruit and berries. Natural products and food supplements containing large quantities of individual vitamins (excluding vitamin D) are not suitable for use in conjunction with warfarin therapy. Their use should always be discussed with the attending physician or a nutritionist.

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9 Nutrition and medicines

Maintaining good nutritional status is important in the prevention and treatment of diseases, including the success of pharmacotherapy. Different disease and symptoms increase with age, which means that the use of medicines is very common in older people. Nearly every Finnish person aged 75 use at least one prescription medicine. Age-related changes and disease affect the absorption, metabolism and elimination of medicines. Muscle mass decreases with age, which reduces the proportion of water and increases the proportion of fat in the body. As a result, concentrations of water-soluble active substances may rise and fat-soluble active substances may be stored in the fat tissue. Changes in the body caused by ageing may also alter the concentration of protein binding active substances. This puts older people at greater risk of experiencing adverse effects or drug-drug interactions in connection with pharmacotherapy than younger age groups. Symptoms can sometimes be difficult to interpret in an older person; they could be the adverse effect of a medicine or caused by ageing or disease.

Medicines can affect the digestive tract and thus also have an indirect impact on appetite (Table 10, p. 113). Medicines can reduce saliva secretion and cause dry mouth (for example, anticholinergic drugs). Some medicines cause taste disturbances, such as leaving a bad taste in the mouth (for example ACE inhibitors, metformin, anti-fungal agents, zopiclone). Both dry mouth and taste disorders may further reduce appetite.

Medicines may cause adverse effects on the digestive tract, such as gastro-intestinal probelms (for example, Nonsteroidal anti-inflammatory drugs (Table 10, p. 113), nausea, diarrhoea or constipation. Adverse effects in the digestive tract are common in the early stages of treatment, but they decrease as treatment continues.

Knowledge of the drug-food interaction is still inadequate, and the interactions rarely have serious consequences. These interactions may increase the efficacy of pharmacotherapy or weaken the absorption or elimination of some nutrients, thus causing a decline in nutritional status. For example, vitamin C enhances the absorption of iron supplements, which can be utilised to achieve successful iron treatment. Grapefruit juice can have a significant effect on the metabolism of many medicines (for example calcium channel blockers, statins, anti-fungal agents, warfarin) and simultaneous use should be avoided.

The most common interactions between medicines and foods that reduce the efficacy of the active substance are the interaction of calcium with tetracycline and fluoroquinolone antibiotics or bisphosphonates. Consuming a lot of protein and use of iron supplements at the same time as levodopa, antiparkinsonian agent, may reduce the efficacy of the medicine. Pyridoxin (vitamin B_6) also prevents the effect of levodopa, but this interaction can be avoided by combining carbidopa with levodopa. Coffee, tea and dairy products can decrease iron absorption. Interactions can often be avoided by scheduling administration of the medicine and meals at different times.

Vitamin K (dark green leafy vegetables) may alter the effect of warfarin. However, there is no need to refrain from eating vegetables in conjunction with warfarin therapy, only to avoid large daily variations in the amount of vegetables. The diabetes medicine metformin and proton pump inhibitors (PPI medicines) used to treat gastroesophageal reflux may reduce the absorption of dietary vitamin B_{12} and contribute to causing a vitamin B_{12} deficiency. Eating a lot of liquorice can cause an increase in blood pressure and alter the potassium content of the blood, thus posing a risk to successful blood pressure medication.

The best way to take medicine is usually with water on an empty stomach. Grinding medicines and stirring them in food is not recommended. Adding medicines with food changes the taste of the food and may also alter the effect or efficacy of the medicines. Following the instructions for the use of medicines may be difficult, especially when cognition deteriorates. In this case, arranging to take medicines according to the meal schedule may help a person to remember to take the medicines.

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Table 10. Examples of medicine groups and active ingredients that may have adverse effects on nutrition.

Problem	Medicine
Dry mouth	In particular: Medicines with an anticholinergic effect; tricyclic antidepressants, antihistamines (especially hydroxyzine), muscle relaxants, intestinal plasmolytes, anticholinergic urinary retention drugs, and in terms of antipsychotic drugs, especially first-generation antipsychotics. Examples of active ingredients: Alendronate, amitriptyline, aripiprazole, buprenorphine, duloxetine, fluoxetine, furosemide, gabapentin, quetiapine, oxybutynine, olanzapine, risperidone, citalopram solifenacin, zolpidem, verpamil
Taste disturbances	Examples of active ingredients: Amiodarone, diltiazem, candesartan, lithium, losartane, metformin, metronidazole, terbinafine, topiramate, zolpidem, zopiclone
Upper abdominal symptoms	In particular: NSAID (especially those in the COX1 group): acetylsalicylic acid, ibuprofen, meloxicam, naproxen, celecoxib Examples of other active ingredients: Alendronate, erythromycin, risedronate, tetracycline
Nausea	Examples of active ingredients: Ibuprofen, levodopa metformin, naproxen, sertraline, citalopram, cytostatics
Diarrhoea	In particular: Selective serotonin reuptake inhibitors (SSRI), serotonin-noradrenaline reuptake inhibitors (SNRI) and acetylcholinesterase inhibitors (AChEI). Examples of active ingredients: Amoxicillin, bisacodyl, digoxin, erythromycin, ibuprofen, carbamazepine, cephalosporin, lactulose, lovastatin, magnesium, meloxicam, metformin, naproxen, paroxetine, pravastatin, rivastigmin, celecoxib, sertraline, simvastatin
Constipation (chronic)	In particular: Antacids, drugs with an anticholinergic effect, calcium channel blockers, iron Examples of active ingredients: Amiodarone, amitriptyline, atenolol, furosemide, ibuprofen, calcium, carbamazepine, morphine, iron, verapamil

10 Oral health and nutrition

- A person with a healthy mouth can eat a diverse range of foods
- Oral problems and diseases hamper eating, while poor eating habits and poor nutrition are harmful to oral health.
- All older people need a regular oral screening examination performed by an oral health care professional as well as an examination of the condition of removable dentures.
- Individual instructions on the daily content and implementation of oral and dental self-care/assisted self-care are included in the service plan of each older person. The instructions and care should be carried out with consideration to functional capacity.
- The meal rhythm should be regular with the client eating 5–6 times per day. Any consumption of sugar should be scheduled in conjunction with meals, because every sugary drink or even a small snack causes an acid attack in the mouth.

10.1 Oral health problems for older persons

Adequate number of teeth with sufficient occluding pairs of teeth (at least 10 pairs, 20 teeth) and healthy mucous membranes provide the best guarantee of functional chewing and opportunity for adequate nutrition. An oral health care professional (dentist or dental hygienist) should regularly check the oral health status of an older person, as changes in medication, functional condition and nutrition can cause rapid deterioration in oral and dental health.

Ageing people have their own teeth to an increasing extent, and the teeth are also replaced with fixed structures (prosthetic bridge solutions, implants). This is an indication of successful lifelong oral health and good quality of life, but it also causes an increased risk of oral diseases due to other disease and reduced functional capacity. With regard to Finns aged 70 or over, about one in four men and one in three women were edentulous in 2017. In addition, one in three had removable partial dentures to replace missing teeth.

For older people, common oral health problems include:

- decreased saliva secretion and the resulting dry mouth
- difficulty cleaning the mouth and teeth and dentures
- caries (cavities in the teeth)
- periodontitis (inflammation of the supporting structures of the teeth)
- yeast infections
- changes in the mucous membranes

- poorly fitting or broken removable dentures
- missing teeth and the resulting reduced chewing strength.

All the factors listed above interact with each other and make eating, swallowing and speaking more difficult. Oral health problems can also cause pain and discomfort and thus reduce the quality of life. Furthermore, it may be difficult and/or financially impossible for older persons to access dental care if they are dependent on assistance.

Caries and periodontitis

Caries and periodontitis are not directly age-related oral diseases, but they are more common in older persons. The significance of caries and periodontitis increases with age, because the changes accumulate over the lifetime and are mostly irreversible. As they progress, caries and periodontitis maintain continuous inflammation and can lead to new tooth losses.

- In the elderly, the progression of periodontitis is mainly manifested by gingival withdrawal.
- Withdrawal of the gingival causes root caries particularly in the elderly in need of assistance.
- The tooth ache caused by caries is the most common pain in the head and face.
- Mobile teeth caused by advanced periodontitis also causes pain.

Cleaning the mouth, teeth and dentures

Dental plaque accumulated as a result of the poor oral hygiene is the primary cause of gingivitis (gum inflammation) and the resulting periodontitis and caries. Changes in nutrition towards soft and sugary foods, and especially their frequent consumption, also increase the accumulation of bacterial plaque on the teeth.

- Impaired vision, hand function and cognitive skills and sensory impairment make it difficult for older persons to clean their mouth and teeth.
- Daily oral care, regular assessment of oral health and referral to oral health care services are a part of multi-professional cooperation (see Tools for oral health assessment, p. 163).
- A daily oral self care plan should be included in the service plan for an older person living on assistance.

Regular examination of an older person's oral health is essential in order to prevent oral inflammatory diseases caused by bacterial accumulation and to treat diseases at a sufficiently early stage.

Oral mucous membranes and yeast infections

The mucous membranes in the mouth undergo age-related changes similar to those in the skin. As a result of slower tissue regeneration, the mucous membranes in the mouth become atrophic and thinner, flexibility decreases and wound healing is slower. Thinner oral mucous membranes are susceptible to the development of ulcers. A burning sensation in the oral mucous membranes (especially the tongue and lips) that involves no visible changes in the mucous membranes is also a common cause of mouth pain in the older population.

An oral yeast infection is usually caused by inadequate oral and denture hygiene, the use of dentures also at night, or incorrect use of inhaled steroids. It is also a good idea to consider the possibility of yeast infection if a client experiences burning sensations in the mouth.

Chewing capacity

Even the partial absence of teeth has a significant impact on chewing capacity and subsequently on diet quality and nutrition. According to WHO, the number of teeth is adequate, when a person has 20 of their own teeth without replacement dentures. In addition to quantity, the location of the teeth is also important, as chewing requires at least 10 occluding pairs of teeth. The chewing strength of removable dentures (partial, total) does not correspond to that achieved with natural or implant teeth. Dentures that fit poorly or are in poor condition can even make eating difficult and cause pain in the occluding teeth and mucous membranes.

Dental implants to replace missing teeth have also become more common in the older population. Implants increase occlusal efficiency and improve quality of life. However, keeping implants and the surrounding tissue clean is demanding and the risk of inflammation problems related to the tissue around implants is higher in patients over the age of 65. No research data is available on the success of daily implant care among older people in need of assistance.

Based on information obtained from other oral diseases, the problems related to keeping implants clean can also be expected to increase in the older population.

10.2 Dry mouth

About 30% of the older population report that they have experienced dry mouth on a daily basis. The simultaneous use of many medicines reduces saliva secretion and increases subjectively perceived dry mouth (xerostomia). The perceived feeling of dry mouth can also be caused by various diseases, such as anorexia, malnutrition, diabetes, depression and Sjögren syndrome, smoking, inhalation through the mouth, and dehydration of the body.

Saliva secretion also decreases when chewing capacity decreases due to missing teeth. Radiotherapy in the head and neck area also affects saliva secretion. In particular, reduced saliva secretion has been found in people with Alzheimer's disease.

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

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

Dry mouth should be suspected when a person has chapped lips, difficulties in speaking, utensils stick to the mucous membrane of the cheek, or food does not move from the mouth to the swallowing stage.

Intervention should be initiated if the cause of the dry mouth is known. For example, it is a good idea to talk with the attending physician about whether a medication can be changed. The symptoms 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). For more information, see Dry mouth[15].

10.3 Nutrition and the mouth

Chewing capacity and nutritional deficiencies

Older people who have no teeth or those with few teeth eat less vegetables and fruits and more sugary foods than those with teeth. The fatty acid composition of the diet is also less healthy than the diet of people with teeth. If biting or chewing is difficult, the selected diet is unfavourable for nutrition and foods that require more chewing and often contain a lot of fibre – such as fruit, vegetables and nuts – are avoided.

- Increasing the number of teeth with removable dentures may not necessarily lead to better eating habits.
- People who have complete dentures often have problems chewing tomatoes, raw carrots, lettuce, apples, oranges, nuts and meat.
- Poor chewing capacity can have a significant impact on the development of malnutrition.

15 https://www.hammaslaakariliitto.fi/fi/suunterveys/suun-sairaudet-ja-tapaturmat/hampaiden-ja-suun-sairaudet/kuiva-suu#.XZb3yGZS-Uk. (In Finnish)

Nutrition and caries

Sugary food and beverages promote the growth and accumulation of dental plaque. Consumption of various sugary foods and beverages is abundant in today's world. However, the most effective ways to prevent caries is to slow the growth of bacterial plaque by avoiding use of sugar and ensuring a good level of daily oral hygiene.

Caries occurs when oral bacteria accumulated on the tooth surface as a result of inadequate tooth cleaning receive sugary food. The marginal root surfaces of teeth are particularly susceptible to caries. Reduced saliva secretion further increases the risk of caries in the absence of the rinsing effect and other protective mechanisms of saliva. The metabolism of plaque bacteria transforms sugar into acid, which triggers a breakdown in the structure of the enamel or root surface of the tooth. The development of caries is also promoted by low fluoride intake, deficiencies in hand function and deterioration in cognition.

A diet that restricts sugar consumption play an important role in maintaining oral health, especially in older people with reduced functional capacity. This should also be taken into account when treating malnutrition in older people.

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

- restricting the frequency of sugar consumption
- scheduling sugar consumption in connection with regular meals (see Figure 8, Food clock, p. 119)
- use of drinking water to quench thirst
- good oral hygiene using fluoride toothpaste, twice a day according to the recommendations
- replacing sugar with non-cariogenic sugar alcohols (for example, xylitol, sorbitol), stevia and other sweeteners. The use of these product does not increase cavities in the teeth.

Sucking on sweets that are sweetened with xylitol or sorbitol also stimulates saliva secretion, which can be particularly beneficial to older people with a high risk of caries. Xylitol can even prevent cavities, but it is recommended to start using it at low doses, as abundant use can cause stomach problems. Special attention should be paid to oral health care when meals are more frequent.

Acids are easily formed from the carbohydrates contained in the following foods:

- pastries and sweets that are sweetened with sugar
- hot chocolate and other sugary beverages
- sugary breakfast cereals
- potato chips and similar snacks
- jams and marmalades
- dried fruit.

Figure 8. Food clock.

https://www.hammaslaakariliitto.fi/fi/suunterveys/yleistietoa-suunterveydesta/ravinto-ja-suunterveys/terveelliset-ruokatottumukset#.XfZA2m5uJjs. (In Finnish)

Nutrition and the health of other oral tissues

There is only preliminary evidence of the links between malnutrition and oral health. High-energy density foods, such as fat, sauces, sweets, pastries and low-fibre bread, may 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 development of gingivitis and periodontitis. Adequate intake of vitamin C, magnesium, calcium and docosahexaenoic acid (DHA) maintain the health of periodontal tissue. Although there is conflicting evidence concerning the importance of vitamin D for oral health, the recommended vitamin D supplement combined with the recommended calcium intake may protect against tooth loss and improve the health of the periodontal tissue.

A deficiency of B_{12} vitamin and folate is common in the older population (> 20%) due to poor nutrient absorption or inadequate nutrition. Signs of anaemia in the mouth can be a burning sensation, 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.

Links between oral and other diseases

- Good oral health is a prerequisite for healthy ageing. In addition to nutrition, oral health is linked to general health, morbidity and mortality in the older population.
- In particular, missing teeth and swallowing problems caused by dry mouth have been found to be associated with mortality.
- Effective oral hygiene is known to prevent pneumonia.
- Oral infections often prevent the performance of several medical procedures (for example, the placement of artificial joints and other surgical procedures in which foreign bodies are placed in the body).
- People with memory disorders may not be able to express the pain in their mouth pain in their mouth and this may be the reason for a poor appetite.
- The eating problems caused by poor oral health also limit social life and thus reduce the quality of life.
- Diabetics may have more oral problems, especially periodontitis and gingivitis and fungal infections.

There is a lot of research data concerning the links between oral inflammatory diseases and general health in younger age groups. The interaction between diabetes and periodontitis is particularly well understood, and periodontitis is considered an independent risk factor for cardiovascular diseases. However, in the older population, it has not been possible to establish links between periodontitis and chronic diseases as it has been found out in the younger age groups. This is due to the many confounding factures and higher general morbidity. Based on preliminary information, poor oral health is a factor in the development of dementia.

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11 Recommendations to maintain functional capacity and muscle strength

Recommendations

The general physical activity recommendations for older people are:

- At least 150 minutes of aerobic activity per week at a moderate intensity level (for example, walking) or 75 minutes at a vigorous intensity level (for example, cycling and running), or alternatively as a combination of moderate and at vigorous intensity. It is recommended to distribute the activity over several days in the week.
- Muscle strenthening activities should be performed on at least two days a week, with the aim of at least moderate intensity that maintains or increases muscular strength and endurance (for example, gym training) or everyday physical activities (for example, carrying loads when performing daily chores).
- Balance and mobility training (for example, different types of aerobics and dance).
- Long periods of sedentary behaviour, such as sitting, should be avoided.
- Physical activity that exceeds these minimum recommendations can further increase the health benefits that can be achieved.

The evidence concerning health benefits of physical activity is indisputable. The benefits of lifelong exercise in older people are evident, for example, in a reduced risk of non-communicable diseases and deterioration in functional capacity. Physical activity plays an important role in the prevention, treatment and rehabilitation of disease. At best, physical activity and exercise maintain and support independent coping in everyday life, ensure the highest possible level of functional capacity and prevent falls. Physical activity increases social interaction and inclusion, increases alertness and can help with sleep difficulties. In combination with meals and rest, physical activity helps to maintain the daily rhythm for people of all ages. Good nutritional status is a prerequisite for being physically active and recovering from more intense exercise.

Older people have been taken into account in national and international physical activity recommendations. The physical activity recommendations for older people follow the recommendations for the adult population, especially with regard to aerobic activity. In addition, there is an emphasis is on maintaining and developing muscle strength, balance and mobility.

Key points regarding the physical activity recommendations for older people

- Physical activity can be so-called multi-componend activity in which aerobic, strength or balance exercises are included in the same exercise session (for example, dancing, outdoor activity in varying terrain or carrying shopping bags).
- Physical activity should be adapted to the individual fitness level.
- The safety of the activity must be taken into account, and plan the exercise in advance according to individual health status.
- Even if the minimum recommendations are not met, it's suggested for each person to be as active as possible within the limits of their own functional capacity.
- Even a small amount of regular physical activity is better than none at all.

Nutrition-related tips for an older person's physical activity

- To ensure that the stomach is not full during exercise, it is a good idea to schedule the meal about an hour before the physical activity.
- The meal should contain some protein and carbohydrates, such as a cheese or ham sandwich, yoghurt and muesli, a glass of milk or buttermilk and a banana.
- It's important to drink water before and after the exercise session.
- A diverse lunch or snack helps a person recover from an exercise session and thus improves fitness.

Older people have different levels of functional capacity, which is why the basic level and safety of each person should be taken into account during physical activity. Meeting recommendations for physical activity is challenging or even impossible for some older people, and the aim is to accumulate as much daily movement as possible according to each person's performance level. This also means setting goals based on each person's specific starting points, which supports the development of an interest in physical activity and maintains motivation. Exercise is especially beneficial for older people with chronic diseases or disabilities. Reduced functional capacity may not be a barrier to physical activity. High-intensity progressive training at a gym particularly improves muscle strength, which maintains the ability to independently cope with everyday chores and reduces the risk of falling. The goal is for everyone to find a meaningful way of being active. Good forms of physical activity include gymnastics, walking and all kinds of outdoor activities. Physical activity should be regular and daily. Everyday chores make it easy for an older person to be active in their day-to-day life.

Activities and exercises for older people may be similar to those done by the rest of the population. The range of activities can include aerobic sports such as walking, cycling, dancing, swimming, running, skiing, ball and racket games, aerobics or group exercise. There are many activities that maintain and develop muscle strength, but exercising in a gym and other similar forms of group exercise have been found to be the most effective. If a person already has problems with functional capacity, the activities can be selected according to each person's capabilities, with particular consideration to the risk of falling. People in good condition usually get adequate balance training as part of varied physical activity. Those at risk of a decline in functional capacity should perform specific tasks to develop balance, such as foot-to-foot weight transfers, standing on one leg, cross-steps and other movements to develop coordination. Plenty of practical exercise-related tips are available, such as a model for high-intensity training, and for organising physical activity.

Outdoor activity is a good way to increase daily physical activity among older people. Being outdoors is refreshing and increases the number of steps taken during the day while reducing sedentary behaviour. Outdoor activities are encouraged by an age-friendly living environment where the condition, lighting, sanding and ploughing of yards, pedestrian paths and streets have been ensured and there are benches along the routes. Green environments and local services, such as shops and libraries as well as shopping centres during the winter, also promote activity. Many older people may need support and encouragement for outdoor activities and physical activity, such as an outdoor exercise friend.

Very few older people in Finland achieve the recommended amount of physical activity. The older the age group, the less often the recommendations are met. According to the Finnish Institute for Health and Welfare population surveys (2019), 12% of men and 14% of women aged 70–79 got the recommended amount of physical activity. The corresponding figures for people over the age of 80 were 11% and 6%. Many activities are popular among older people, including walking, cycling, yard and garden work, dancing, swimming, strength training and gymnastics at home. Many take the stairs almost daily, which means

that the stair training also accounts for part of lower limb strength training. Functional capacity decreases with age so that only 47% of men and 29% of women over the age of 80 are able to walk 500 metres without difficulty. Challenges related to joint mobility weaken the prerequisites for walking and daily physical activity. For example, difficulty with squatting is very common among people over the age of 80, with 50% of men and most women experiencing difficulties in this area. Furthermore, an estimated 14% of older people have no opportunity to engage in physical activity, even if they would like to do so. This applies particularly to people who have severe mobility challenges, but also to those with a fear of moving outdoors. The barriers to physical activity are varied and individual, such as reduced mobility or health, fear of falling or fear of moving outdoors.

Functional capacity is, in addition to physical activity, a key term among older people. It refers to the prerequisites for coping with ordinary everyday chores. Functional capacity is often understood through physical, psychological and social dimensions. Physical exercise is seen as a way of maintaining and developing physical functional capacity in particular, although current knowledge indicates that physical activity can also have a significant impact on cognitive and social functional capacity.

TIP: Instructions for exercise:

- **Tehoharjoittelujakso kuntosalilla – voimaa ja tasapainoa nousujohteisesti**
  https://www.ikainstituutti.fi/content/uploads/2017/01/Tehoharjoittelujakso-kuntosalilla-voimaa-ja-tasapainoa-nousujohteisesti.pdf. (In Finnish)
- **Tehoharjoittelulla voimaa arkeen kuntosalilta**
  https://www.ikainstituutti.fi/karkihanke/ota-kayttoon-hyvat-kaytannot/tehoharjoittelujakso-kuntosalilla/. (In Finnish)

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PART IV

PROCUREMENT, TENDERING AND PUBLIC STEERING OF FOOD SERVICES FOR OLDER PEOPLE

12 Planning and tendering for the procurement of services and food items

Recommendations

- The nutritional criteria and principles for the age group should be taken into account when procuring services.
- The needs of different parties, such as the user client, care staff, purchaser, and meal service provider, should be taken into account when preparing the call for tender.
- The content requirements and monitoring indicators for the service being procured should already be described in the call for tender.
- The implementation of service quality in accordance with the contract should be monitored according to jointly agreed criteria, with established practices for dealing with deviations and for regular cooperation.

12.1 Operational planning

Advance planning is important when arranging services. During the call for tender stage, the purchaser of the services will specify all the necessary criteria concerning service content in the call for tender. If tendering applies to nursing services as a whole, the inclusion of detailed information regarding nutrition-related criteria in the call for tender should also be taken into account. In this case, the supplier is responsible for providing the services as if they were their own, even if the meal services are procured as subcontracting. The requirements related to the meal service should be described in a separate appendix in the call for tender.

When planning procurement of the meal service, it is essential to have a knowledge of the activities and ensure that the documents attached to the call for tender, such as the description of services and functions, are up-to-date and clear. In addition to knowledge of the activities, it is important to check the food recommendation for the relevant age group published by the National Nutrition Council and the dimensioning guidelines of the Regional State Administrative Agency concerning the minimum number of assisting personnel. The on-site success of a meal service is affected by the activities of the meal service provider as well as the activities and competence of the nursing staff.

When planning the call for tender, it is important to determine the needs of different parties in the future service. The needs of the purchaser of the services should be taken

into account in the meal service requirements. The purchaser's experts are a food services expert and a nutrition specialist with a university education. In addition to the basic needs of the age group that is the target of the tendering process, the service description for the meal services includes special needs related to the provision of meal services, such as the fitness of residents, possible factors affecting swallowing and chewing ability, and the need for special and texture-modified meals. A flexible meal situation, meal times and the impacts of residents' fitness on service content should also be taken into consideration during the planning stage. If the tendering targets certain premises, the features of these premises should also be taken into account when planning the tendering process, and the requirements recorded in the description of the activities or other documents included in the call for tender.

Interaction between the different parties is already important during the planning stage – joint discussion between the purchaser of the service, the party organising the tendering and the meal service provider as well as a nutrition specialist with university training concerning the content descriptions of the contract is important in order to successfully select the service provider.

When planning the call for tender, the evaluation methods used to monitor the service provider's success in providing the service should also be discussed. The methods for detecting possible shortcomings in the quality of the service and the means for reacting to them and correcting the activities to comply with the contract can already be agreed upon together during the planning stage. It is also important to document sanctions that are sufficiently clear and effective.

Illustrated models help healthcare staff assemble a balanced meal according to different energy levels.

Procurement criteria for meals on wheels services

The call for tender specifies the content of the tender and the obligations of the tendering parties.

The call for tender must include a draft contract that already specifies the matters and sanctions related to contract monitoring and the extent of them.

The call for tender must contain a description of the following

(see Meals on wheels p. 24)

- What the meal includes: main dish, potato, pasta, cereal or rice side dish, warm side dish, fresh salad, salad dressing and dessert, a bread roll or pasty with a soup meal.
- Service procurement objectives, service requirements, service content, quality and responsibilities, and contract monitoring.
- Information on portion size and nutritional content calculations for the menu at the weekly level.
- Consideration of theme days and holidays.
- In addition to the basic diet, the texture-modified and enriched diets and other special diets that are served, for which nutritional content calculations at different energy levels are required.
- A sample menu (3–5-week cycle) to which the supplier attaches a description of the recipes, ingredients and source of the ingredients.
- Clear and easy to read product descriptions.
- A description of the delivery method and possible meal heating service, including meal transport packaging (containers and transport unit).
- The methods used to evaluate implementation of the contract.
- Possible sanctions for shortcomings in the service, processes for correcting deviations and possibly also quality deviations that justify termination of the contract.

Procurement criteria for food services in residential care

The call for tender must include

- A service description of how meals, snacks and other service provision associated with the meal service are implemented in the service with regard to different meals for different target groups.
- The party organising tendering must define the objectives of the service procurement, describe the service requirements, service content, quality and responsibilities, and monitoring of the contract in addition to defining sanctions for situations in which, for example, nutritional quality is not realised.
- Information on nutritional content calculations for the menu at the weekly level.
- The meal service entity must also take into account the sufficient number of meals per day, nutrient intake that complies with the nutrition recommendations, the permitted length of the night-time fast, and implementation of the meal.
- The division of responsibilities between different operators in the wards/ sheltered housing is an important part of the service description. A description of how the meal service will be implemented in cooperation with the nursing and institutional maintenance staff working in the wards.
- The provider must supply illustrated models for serving and dispensing food at different energy levels (see p. 40).
- An enriched diet for which nutritional content calculations are required is offered in addition to the basic diet. The portion size is about half the size of a basic diet portion containing the same amount of energy (see energy levels p. 40 and enriched diet p. 44).
- Enriched and texture-modified diets and other special diets must be tasty and have optimal nutritional content.
- All diets should be available in texture-modified form: Soft, Coarse, Smooth purée and Liquid (see texture-modified diets, p. 46).
- Sufficient protein intake is ensured in the tendering process so that the protein content accounts for 15–20% of the energy in the basic diet (on average, 18% of the energy at the weekly level) and 20% of the energy in an enriched diet. The main meal must contain at least 25 g of protein.
- The methods used to evaluate implementation of the contract.

- Possible sanctions for shortcomings in the service, processes for correcting deviations and possibly also quality deviations that justify termination of the contract. A draft contract containing an explanation of these monitoring and possible sanction matters is attached to the call for tender.
- Nutritional quality must always be taken into account as an absolute minimum quality requirement in tendering for food and meals. Nutrition quality requirements are set for the ingredients and meals described in this recommendation (see Meal-specific nutrition criteria for food provided by food services, p. 148).

Criteria for evaluating the tender

- A sample menu (3-5-week cycle), which must be accompanied by a description of the recipes and ingredients used by the service provider, their compliance with the nutrition criteria and nutritional content calculations.
- Consideration of themes and holidays.
- Assessment of operational quality, a report on the minimum number of personnel, competence (training and work experience) and a development plan.
- A description of how the meal is arranged and how it will be developed if necessary.
- A description of how customer satisfaction is measured and how feedback is dealt with.
- A description of how nutritional status is assessed.
- A description of how independence will be maintained and individual needs taken into account (for example, a description of dishes and aids that will make independent eating possible).
- A description of how food is ordered and delivered. Placing orders must be easy and clear, and the food must be delivered within a reasonable time frame.

12.2 Tendering for food services and food items

The responsibility for organising public food services varies; for example, food services can be part of the financial administration, technical, or education and culture department of a city or municipality. The food service provider may also be a company owned by a federation of municipalities.

The primary provider of meals on wheels for older people is a municipal or regional operator. During the ordering and tendering phase of procuring meal services for older people, it is important to utilise food service and nutrition experts who have the competence needed to comprehensively assess the nutritional quality of the diet and the operations when preparing the call for tender and evaluating the tenders The tendering must also include a nutritional care perspective provided by registered clinical nutritionist when the meal services are procured for older people who are ill and in need of treatment. Responsibility, quality and possible regional impacts should also be taken into account as criteria in the tendering. Meal services can be put out to tender as one extensive entity or in parts, for example, according to client group or location. The food service provider conducts tendering for the food items it needs. If the municipality arranges tendering for the food items, it must comply with the Act on Public Procurement and Concession Contracts, but the Act is not binding to a private service provider. 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.

Tendering for food services

The actual call for tender should request a detailed description of how meals, snacks and other service production associated with the food service provided by the supplier are implemented in different meals intended for different target groups. The party organising the tendering should also define the objectives of the service procurement and describe the service requirements, service content, quality and responsibilities (see procurement criteria p. 129–131). An extremely important element in the tendering process for food services is to ensure that the criteria for service provision promised in the tender are implemented in practice. It is important to include the division of responsibilities between different operators in the wards/sheltered housing in the service description.

The service description is an appendix to the call for tender, and the requirements for implementing the meal services should be described in as much detail as possible. The service description should describe at least the service content and related quality requirements, the components included in the price of a meal and the separately invoiced products and services with price lists, the service model and method of distributing food, the responsibilities of different parties when implementing the food service, the implementation of responsibility, principles of menu planning, a description of how

customer satisfaction and quality will be monitored, competence requirements for the personnel, required certificates, implementation of cooperation, etc.

The majority of today's food services in residential care are decentralised, which means that food is delivered to the units in large containers and then distributed in the units. The purpose of operational planning is to ensure that all meal components planned for the client are served. In other words, this means ensuring that all meal components are delivered to the unit in the same transport and at the same time. However, it is sensible to deliver food items that are used continuously – such as meal beverages, spreads, bread and salad dressing – at times when the "load" is lowest.

Meal services are developing rapidly and there are new operating models for meal production. Delivering cold food and other products to residential service units provides more cost-effectiveness and resources in ward/group home customer service. This makes the production kitchen more efficient, but it increases the amount of work in the ward. This service model involves cooking the energy side dishes and making salads in the units. The operating model requires the more extensive meal service competence from the staff working in the ward, and this must be taken into account in the call for tender stage. The final preparation and serving of meals in the ward/group home makes it easier to implement individual meal times and may help to increase inclusion. Increasing the number of meals prepared in group homes produces more food aromas and a more home-like atmosphere, and makes it easier to take eating-related preferences into consideration. However, this operating model makes it necessary to take the need for additional human resources and food service competence in the ward/group home into account in order to ensure that high-quality food services can be provided.

Nutritional needs that must be considered in tendering for food services

The need for nutrients among older people varies a lot. The provider must supply illustrated models for serving and dispensing food at different energy levels (see p. 40). Care personnel must also have instructions concerning when and how to use these models. In addition, the personnel must know that they can order additional food if a unit has more clients with high energy consumption, such as those who are restless or in rehabilitation.

Nutritional content calculations are also required for the enriched diet, in the same way as for the basic diet and special diets. The portion size is about half the size of a basic diet portion containing the same amount of energy and nutrients (see energy levels p. 40). The enriched diet aims to ensure reasonable fibre intake (see high-fibre foods, Section 7.4, p. 81).

All diets should be available in texture-modified form: Soft, Coarse and Smooth Purée. These must be accompanied by illustrated models and calculations of nutritional sufficiency according to the recommendation. Puréed food is served so that the meal is

colourful. Puréed food should be enriched with high-energy food items and nutritional supplement powder, or the producer must demonstrate the other means used to ensure that a purée diet meets the recommendations for nutritional content. The provider must have sufficient equipment to prepare Smooth purée food.

As the nutritional needs of older people are individual and often challenging, nurses, doctors and clinical nutritionists must have the opportunity to order individual food items flexibly and in a timely manner based on nutritional care criteria. These criteria include at least low BMI, unintentional weight loss, malnutrition or the risk of malnutrition combined with weight loss, and chronic and pressure ulcers.

Sufficient protein intake is ensured in the tendering process so that the protein content accounts for 15-20% of the energy in the basic diet (on average, 18% of the energy at the weekly level) and at least 20% of the energy in an enriched diet. The main meal contains at least 25 g of protein and protein must be included in 5 meals per day. In other words, the afternoon snack should also contain protein. The portion lists and images provided for care staff should indicate the appropriate portion size of foods containing protein for clients who consume different quantities of energy. The provider must also have a protein table based on its own recipes. The target value for protein as a percentage of energy is information intended for food services. However, the provider must clarify this matter to the care staff so that information about what this means in terms of, for example, portions of buttermilk, fish or meat is available during the meal situation.

Call for tender

The contracts and service descriptions are drawn up on the basis of the call for tender documents, which is why attaching a draft contract and the key issues of the service contract to the call for tender is recommended. The best result is obtained when it is possible to create common models and operating methods for tendering that provide the opportunity for cooperation between different operators (purchaser, party organising the tendering, meal service provider, nursing service provider) before the call for tender is published. The content of the call for tender for meals on wheels and food services in residential care is described in the tables (see p. 129–131).

When procuring meals on wheels services, the recommendations for energy and nutritional content (see Table 6, p. 84) and the minimum nutritional quality requirements for meal components (see Tools, p. 148-149) must be followed as absolute quality requirements and recommended choices of ingredients.

Criteria for evaluating the call for tender

The meals offered must comply with the recommendation when examined over a one-week period. The call for tender should include a description of how the service provider will implement this in practice. The criteria for evaluating the call for tender are described on page 131.

It is recommended that a description of the achievement of objectives supporting sustainable development in service production in addition to a description of nutritional quality factors be requested during the tendering process. These can include the seasonal nature of the ingredients used, the degree of self-preparation, ecology and waste management. In addition, procurements are guided by organiser-specific strategies and guidelines, such as the provision of vegetarian food, local food and the utilisation rate of organic food. It is important to also highlight the desired minimum requirements governing the quality of the service, meals and ingredients with respect to these matters in the contract.

The party organising the tendering/purchaser of the service must arrange monitoring to ensure that the criteria agreed for quality and tastiness of food are realised. During the call for tender phase, a description should be requested concerning how the food service provider will monitor and ensure implementation of the selection criteria and how the buyer will monitor this in practice. Quality can be monitored by systematically collecting feedback and examining the actual menus and their nutritional content in relation to what was agreed, and by monitoring customer satisfaction with the service. In addition, the appropriateness of operations, feedback received on the taste of food and sufficiency of the food, implementation of self-monitoring, number of deviations and corrective measures as well as active cooperation with clients will be assessed. Joint quality reviews can also be agreed for quality evaluation, in which case common criteria are used to assess the agreed quality.

The contracting authority/purchaser of the service must have the professional skills and competence needed to steer the food service and monitor the realisation of quality. Steering is statutory, so it obliges the purchaser to organise appropriate and professional steering activities and develop those activities. Steering and monitoring should take the impacts that different parties have on successful meal service implementation and the overall well-being of the client into account.

Tendering for food items

Nutritional quality must always be taken into account as an absolute minimum quality requirement in tendering for food. Nutrition quality requirements are set for the ingredients described in this recommendation (see Tools, Meal-specific nutrition criteria for food provided by food services, p. 148).

Food choices can promote sustainable development. In addition to the nutritional quality of food items, it is important to focus on their sustainability during the procurement and tendering process. Along with climate impacts, the decisions must also take into account other aspects of sustainability, such as animal welfare and health, environmentally sound cultivation and production methods and biodiversity. A production method that meets domestic production requirements is a responsible and safe choice that also has positive socio-economic impacts on society.

Vegetarian food is considered beneficial in terms of climate and other environmental impacts. In addition to the composition and origin of food, its environmental impacts include production and cultivation methods, transport distances, packaging materials, food preparation methods and food waste.

According to the nutrition recommendations, plant products form the basis for the diet, which is also good for the environment. The climate impacts of food are taken into account when the selection of food items emphasises the plentiful use of vegetables, fruit and berries as well as wholegrain cereal products. Products of animal origin, such as meat, meat products and dairy products, should be used in moderation in accordance with the nutrition recommendations. Dairy products are supplemented by fish, poultry, red meat and meat cuts, eggs as well as nuts, seeds and legumes.

For most older people, dairy products are familiar foods that are also easy to consume in situations where chewing or swallowing has become more difficult or there is a problem with digestion. They also make it easy to produce tasty meals and snacks that are high in protein.

Reducing food waste is a very important part of sustainability. This is why it is important for each client to receive a suitable portion of food that they find appealing and tasty food. This significantly decreases the amount of food waste.

However, food waste is not always visible as plate waste. Problems can occur in the warehouse cycle or as a waste generated through over-production. Correct product refrigeration periods, storage temperatures, storage locations and times, as well as good packaging and best before stamps all help to optimise the product cycle and reduce waste.

In accordance with the Government decision-in-principle, high quality and overall economic sustainability should be pursued in food procurements. This can be achieved by requiring foods have been produced with consideration to the sustainable development criteria, food safety, environmentally sound cultivation methods, ethical production methods and animal health and welfare. The Government decision-in-principle is binding to state authorities, and municipalities should also comply with it. The desired responsibility criteria can be set as absolute minimum quality requirements. Municipalities/joint municipal authorities have been encouraged to take responsibility and sustainable development into account in the municipal strategy and to outline how this strategy will be reflected in meal services and food procurements. Food services and the social and health care department may also take the initiative regarding consideration of these matters in the municipality.

The Ministry of Agriculture and Forestry has prepared a guide for responsible food procurement. It presents criteria for tendering that increase responsibility in different product groups on two levels: as basic level and forerunner level criteria. The criteria that correspond to the municipality's procurement strategy and guidelines and otherwise support the quality and responsibility targets that have been set can be selected for the tendering process.

A target has been set for public food services to increase the proportion of both natural and organic food in food procurements. Local food refers to food produced locally that promotes the local economy, employment and food culture in the region. Organic production is a certified production method as defined in EU legislation. Focusing procurements on food that is produced locally or at least domestically implements the sustainability criteria.

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National Nutrition Council. Terveyttä ruoasta – suomalaiset ravitsemussuositukset. Kestävät ruokavalinnat lautasella, p. 40 and appendix 9 p.54–55. https://www.ruokavirasto.fi/globalassets/teemat/terveytta-edistava-ruokavalio/kuluttaja-ja-ammattilaismateriaali/julkaisut/ravitsemussuositukset_2014_fi_web_versio_5.pdf. (In Finnish)

Responsibly from farm to fork www.mmm.fi/ruoka. (In Finnish)

13 Public steering and evaluation of operations

13.1 National monitoring and evaluation

State research institutes are responsible for monitoring the nutrition of the population and different age groups at the national level. There is little information on the food and nutrient intake and nutritional status of older adults, and there is no national monitoring data for people over the age of 75. National statistics on older adults are collected in the Sotkanet[16] service maintained by the Finnish Institute for Health and Welfare. The RAI system[17] for assessing service needs also produces national monitoring and comparison data that can be used in service development and information management. The TEAviisari[18] tool developed by the Finnish Institute for Health and Welfare collects information on, for example, how nutrition matters for older people have been taken into account in promotion of health and well-being at the municipal level.

Local monitoring data are also needed on the organisation and availability of food services, which is particularly important when planning measures at the regional and municipal level and when integrating food services with services for older people. Ensuring the continuity of nutritional care for older people also requires a good knowledge of the service structure and functions.

The ongoing social and health care services reform is also likely to cause changes in the organisation of services for older people. At this stage, it is particularly important to ensure that objectives related to good nutrition and meals for older adults and the measures based on them as well as indicators related to the monitoring, evaluation and effectiveness of operations are also included in the municipal and regional strategies, well-being reports and service menus that are currently being compiled. Services to promote good nutrition and eating for older people are strongly interconnected, which means that regional cooperation between municipalities, organisations and the companies providing services is essential.

The National Nutrition Council and the Association of Finnish Municipalities have jointly published support material to enhance the good nutrition of residents and clients. The material is intended for municipalities, social and health services, and regional groups and operators promoting well-being and health[19]. The support material includes self-assessment tools for municipalities and social and health services. The tools also contain functional indicators regarding the organisation and quality of services for older people.

16 Finnish Institute for Health and Welfare. Sotkanet. Statistical information on welfare and health in Finland. www.sotkanet.fi (Indikaattorit/Ikääntyneet: https://sotkanet.fi/sotkanet/en/haku?g=358

17 Finnish Institute for Health and Welfare. Assessing service need with the RAI system. https://thl.fi/fi/web/ikaantyminen/palvelutarpeiden-arviointi-rai-jarjestelmalla. (In Finnish)

18 Finnish Institute for Health and Welfare. TEAviisari. www.teaviisari.fi

19 National Nutrition Council. Ravitsemuksella hyvinvointia. www.ruokavirasto.fi/ravitsemuksellahyvinvointia. (In Finnish)

13.2 Service need assessment and client counselling

The Act on the Care Services for Older Persons and the Quality Recommendation[20] (2017) state that the granting of services to older clients must be based on an extensive assessment of the need for services, which examines physical, psychological, social and cognitive capacity and other factors related to service needs and health. When the client first contacts client counselling to obtain an assessment of service needs or a service, the factors related to nutritional status could also be assessed. This also applies to identifying risk populations that are more likely to benefit from timely, targeted interventions related to areas such as nutrition and physical activity, and the maintenance of cognition. A service need assessment also produces monitoring data if comparable assessment tools are used. The Act on Care Services for Older Persons (for which Government proposal 4/2020 has been issued) includes the implementation of a uniform national system for assessing service needs. The proposed system is the Resident Assessment Instrument (RAI).

The RAI assessment system is used in home care and residential care, and also increasingly for assessing service needs applying for services (Appendices 4–6, p. 176–179). The RAI evaluation system is a systematic way of assessing and recording matters related to functional capacity, service needs and health status in the same way for all clients. This basic information highlights the individual needs of clients, including nutrition issues. These can be monitored by means of regular assessments.

The matters concerning nutrition in RAI are the client's body mass index (BMI), factors related to eating situations, oral health and composition of diet as well as memory symptoms, coping with everyday activities and fragile health status as well as terminal care situations. For people living at home, help provided by family and friends, inadequate kitchen facilities and the need for assistance in preparing meals should also be assessed. Home care clients are also monitored regarding the provision of meal services. The assessments are used in all service types to monitor the adequacy of clients' meals, unintentional weight loss, BMI (weight and height) and indicators calculated on the basis of the assessments, such as a BMI of less than 24 and weight loss, dehydration and the percentage of people who are underweight. Chewing problems are an important factor in eating, and the indicator for this is pain in the mouth.

20 Ministry of Social Affairs and Health and Association of Finnish Municipalities. 2017. Laatusuositus hyvän ikääntymisen turvaamiseksi ja palvelujen parantamiseksi 2017–2019. http://urn.fi/URN:ISBN:978-952-00-3960-8. (In Finnish)

13.3 Indicators for monitoring the nutritional status of the population

The RAI system produces information on the nutritional status of people within the scope of the services and thus describes the quality of the services. The monitoring indicators are updated every six months at the national level, but the service providers have access to current data based on the same indicators. These indicators can be examined at the individual, unit, service provider and organiser level and also nationally, which makes it easier to identify the necessary measures and monitor the impacts of the selected measures.

The health status of the older population and various indicators can be monitored at the population level, and also used as the basis for seeking nutritional status indicators (Appendix 5, p. 177). From a regional perspective, special problems in a specific area can also be identified. Regular monitoring also reveals trends.

Data content of the nutritional status indicators currently used

Mapping the nutritional situation of older clients also requires extensive information about their health and functional capacity. Finland uses several indicators that produce information on nutrition. Table 11 (p. 141) describes the data content produced by different assessment indicators. As a general rule, the RAI assessment (Appendix 6, p. 178) surveys the need for services more extensively, while the MNA is aimed at identifying factors related to malnutrition.

Table 11. Nutrition questions in RAI assessments and MNA indicators

	RAI assessment	MNA – short	MNA – long
Age	x	x	x
Gender	x	x	x
Cognition	x	x	x
Daily performance	x		
Depression	x	x	x
Social functional capacity	x		
Health status	x	x	x
Terminal care situation	x		
Meal preparation (home care)	x		
Ability to eat	x		x
Dehydration	x		
Appetite (home care)	x	x	x
Eating habits	x		
Height and weight (BMI)	x	x	x
Weight change	x	x	x
Oral health	x		
Pressure sores or other wounds	x		x
Number of daily meals			x
Fluid intake			x
Number of protein portions in the diet			x
Consumption of vegetables, fruit and berries			x
Self-perceived nutritional status			x
Self-perceived health status			x
Anthropometric measurements			

RAI = Resident Assessment Instrument

MNA = Mini Nutritional Assessment

13.4 Cooperation to implement good nutrition and to monitor quality defined by the service contract

In addition to clear assessment criteria, it is also a good idea to have a joint discussion concerning their implementation and the sharing of indicator data between different operators. Performing regular assessments and utilising the results in cooperation ensures that people at risk of malnutrition are identified sufficiently early, making it possible to address the situation in a timely manner with concrete measures. The organisation of meal services for older adults in forerunner municipalities involves proactive cooperation between different operators, such as the meal service provider, nursing staff and the purchaser of the services. For example, good experiences have been gained by utilising the meals on wheels service driver to make observations about the client's condition while delivering a meal to their home. The driver notifies home care if they detect any abnormalities, and home care can then make a visit to check the situation. The most important point when organising services is to ensure that the client's well-being every day.

When tendering for nursing services, the requirements for the content of the meal service must also be taken into account. The content of the service being tendered should be prepared with consideration to the needs of the meal service user, the service provider's possibilities and the principles of nutritional care. The procurement unit must take the perspectives of different operators into account and implement these systematically when procuring services. When services are put out to tender according to uniform requirements, success is easy to assess. In this case, different service providers follow common requirements, and precise indicators to describe success can be created to evaluate the operations. The indicators could include customer satisfaction, method of quality monitoring, amount of plate waste, and number of deviations. The indicators can also be used as the basis for rewards. For example, a service provider can be rewarded when customer satisfaction exceeds the target or there is a decrease in the amount of plate waste.

The criteria measured during implementation of the meal service can be:

- diner-client satisfaction
- regular assessment and nutritional status
- regular monitoring of the realisation of energy and nutritional content in the menu
- amount of plate waste
- length of night-time fast
- number of daily meals
- opportunities for clients to participate in developing operations
- responsibility of food services
- taking food preferences into consideration
- quality and closeness of cooperation.

The realisation of good nutrition is a matter of cooperation between different operators aimed at achieving well-being and health for older people. Well-being and its development can be measured using a common set of indicators. In Tampere, for example, the municipality uses a matrix to measure the nutritional well-being of residents. The meal service provider and nursing service provider both participate in producing the content of the matrix. A jointly agreed set of indicators can be used to develop services and ensure that counselling is systematic. For example, the Tampere well-being matrix assesses the well-being of older people by examining customer satisfaction, consideration of food preferences, the risk of malnutrition and access to assistance when necessary. Both nursing and meal services participate in compiling the data for the matrix. The results are reported and their development monitored.

Self-monitoring and official supervision of services for older people

Provisions on supervision in social welfare services are laid down in the Social Welfare Act, the Act on Care Services for Older Persons and the Act on Private Social Services. Self-monitoring is the primary form of supervision, and it includes self-monitoring by professionals, self-monitoring by service providers and self-monitoring related to service arranging responsibility in municipalities responsible for organising services. The objective of self-monitoring is for the units to implement systematic evaluation and supervision of their own activities to ensure client and patient safety and the quality of services. The purpose of self-monitoring is to prevent shortcomings and to intervene in them quickly.

The supervisory authorities should primarily carry out the supervision of social 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 indicator data described above can be used to assess the nutritional status of clients in both self-monitoring and official supervision.

13.5 Monitoring and supervision of meal service providers

In food services, self-monitoring refers in general to the self-monitoring of food premises required by food legislation. In this section, 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.

The purchaser of the services actively monitors and supervises the service on the basis of common indicators, and shortcomings can be addressed quickly. 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 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 service points should also have details concerning implementation of the service, such as a portion size table for meals, meal transport schedule, operating instructions for ordering meals and products, and instructions for dispensing food. The basic matters for observation are food temperatures and freshness as well as hygiene related to work, equipment and facilities. Food that is served hot should be heated to a temperature over + 60°C and the food then cooled to a temperature below + 6°C as quickly as possible if the intention is to store it cold. In addition, the guidelines issued by the Finnish Food Authority concerning the safe use of foodstuffs in sensitive consumer groups, such as older adults, must be followed[21]. If a cold meal concept is

21 Finnish Food Authority. General instructions on safe use of foodstuffs. https://www.ruokavirasto.fi/en/private-persons/information-on-food/instructions-for-safe-use-of-foodstuffs/safe-use-of-foodstuffs/

used, instructions related to the final preparation of the food also play an important role in a successful meal service.

The Oivahymy report system

Oiva is a food control inspection information system coordinated by the Finnish Food Authority. Municipal food inspectors make a visit and assess the food safety of kitchens and other food companies, including areas such as food hygiene and product safety. The results are published in a report using emoticons. Compliance with food legislation is required in order to obtain the best smile. A smiling Oiva guarantees that things are being handled well at the premises, while a straight line or frown indicates that something needs to be corrected or is in poor condition. The results of the inspection visit are also published as Oiva reports on the internet. Oiva does not assess the quality of customer service or any other service, the taste of food or its nutritional quality. A separate feedback system is needed for evaluating customer service. However, the food service may also integrate nutritional quality monitoring with the self-monitoring required by the Food Act.

Oiva provides a way to inform consumers about the control results of food operators. The inspection results for the food operators are published by using emoticons (smileys) on the Oiva website as the food control authorities conduct their inspections.

Realisation of customer satisfaction and quality

The meal service provider regularly assesses the quality of the service and customer satisfaction by requesting feedback and organising client surveys at regular intervals. The development of customer satisfaction is monitored as part of cooperation and contract monitoring. An ageing person often needs help in responding to surveys and in this case, for example, the home care employee plays an important role in recording an opinion. The results of measuring customer satisfaction are utilised in service development, for example, by adding preferred food options. This increases appetite and ensures that the food is also eaten.

- **Uneaten meals or an increase in the amount of plate waste can also indicate that the food is unsuitable in terms of texture or that the client simply doesn't like the food!**

The nutritional quality of the menu should be monitored regularly by requiring the service provider to supply nutritional content calculations based on nutrition recommendations, and by requiring that these are also implemented in practice. The quality of the products that can be ordered must comply with the recommendations, and regular reporting on product orders can also be required from the meal service

provider. For example, the amounts of fruit and vegetables ordered, the correct quality of fat and the quantity of products containing sugar that are ordered have a significant impact on the quality of service and the healthiness of the meal.

Inclusion of the diners can be realised by allowing clients to participate in the selection of new dishes for the menu and by provide feedback on the presence of their favourite foods on the menu at sufficiently frequent intervals. It is also possible to organise a questionnaire for older people that determines their preferences with regard to updating the menu. The service provider can be required to organise regular theme days or weeks related to preferred foods. A preferred food and/or menu of favourite foods may also be a product that can be ordered regularly, making it possible to monitor the actual amounts.

For example, quality in compliance with the service contract can be assessed´ by performing joint quality reviews as cooperation between the service provider, the purchaser and the user client. Quality should be assessed in relation to the service content recorded in the service description. The number of joint evaluations should be agreed as part of the cooperation between the service provider and the purchaser. The results of the evaluation are recorded and development measures agreed upon together.

When the service contract contains procedures for quality monitoring criteria, monitoring and reporting processes and possible sanctions related to deviations, it is also important to ensure that these are implemented in practice. Repeated deviations should lead to concrete actions to correct the quality of the service. Holding regular cooperation meetings between the service provider and the purchaser makes it possible to intervene in possible deviations quickly and restore the activities to the level specified in the contract.

Steering of multiple service providers should be systematic and identical in terms of content. Various shared digital methods can be used for the induction and guidance of service providers. One example is an internet-based work platform where joint instructions and operational requirements can be saved. The objectives must be consistent for all meal service providers. The portal can be used to store the service description, self-monitoring instructions, hygiene instructions, portion size chart or dispensing instructions.

Sources

Finnish Food Authority. Oiva system. www.oivahymy.fi/

Finnish Institute for Health and Welfare. Palvelutarpeen arviointi RAI-järjestelmällä. https://thl.fi/fi/web/ikaantyminen/palvelutarpeiden-arviointi-rai-jarjestelmalla. (In Finnish)

Tampereen kaupungin hyvinvointimatriisi. https://www.tampere.fi/tampereen-kaupunki/tietoa-tampereesta/tietonakoala/ravitsemuksen-hyvinvointimatriisi.html. (In Finnish)

The forms for the tools are available in PDF format on the National Nutrition Council website.
https://www.ruokavirasto.fi/en/themes/healthy-diet/nutrition-and-food-recommendations/elderly-people/

Minimum requirements for nutritional quality

(Health from food – Finnish nutrition recommendations, 2014, version 5)

The minimum requirements for the nutritional quality of meals are based on the meal component-specific criteria for food provided by food services as outlined in the population-level nutrition recommendation. If only one meal option is available each day, it is acceptable that the majority of meals (at least 80%) comply with the recommendation. When more meals are served (breakfast, lunch, snack, dinner, evening snack), the meal entity for the entire day must be taken into account in menu planning. In addition to meal component-specific criteria, all products meeting the Heart Symbol criteria are recommended as such as meal components, even if the nutrient content of the product does not correspond to the figures presented in the tables below. The criteria for Heart Symbol products are based on a "better choice" comparison of the products available for sale in each product group.

Table 1. 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 meals, Main dish salads****, pizza	5 (7)	2 (2)	0.6***–0.75
Main dish sauces (for example, meat and chicken sauce)	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 is the longer-term objective.

**** Vegetables account for a least 150 g/portion in a meal salad

Table 2. Potato and cereal side dishes served with a main dish

Type of side 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, rice/cereal mixtures, etc.	–	Max. 0.7	Max. 0.3	Min. 6
Wholegrain rice	–	Max. 0.7	Max. 0.3	Min. 3
Boiled potato	No added fat	–	No added salt	–
Other potato side dish (e.g. mash, wedges)	–	Max. 0.7	Max. 0.3**–0.5	–

*(–) No applicable criteria.

** Range of salt, where the lower number is the longer-term objective.

Table 3. Other meal components

Meal component	Nutritional content/100 g			
	Fat, %	**Hard fat (saturated and trans fat), %**	**Salt, g**	**Fibre, g**
Bread	–	–	Fresh bread, max. 0.7 Crispbread, max. 1.2	Min. 6 Min. 10
Vegetable fat spread	60 or more	Max. 30	Max. 1.0	–
Milk or buttermilk	Max. 0.5	–	–	–
Vegetable side dish - fresh vegetables	–	In marinade, max. 20	No added salt	–
Vegetable side dish - cooked vegetables	–	In marinade, max. 20*	Max. 0.3	–
Salad dressing or oil for salad	Preferably 25 or more	Max. 20 Max. 20	Max. 1.0	–

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

Quality criteria for nutrition in home care

This is a nutritional quality criteria questionnaire intended for home care units in social and health care. The persons in charge of nutrition for the local service areas respond to the questionnaire with support from the persons in charge of nutrition in the home care units.

The person in charge of nutrition books a time for a team meeting in order to deal with the quality criteria and copies the questionnaire for the team members. The process begins with each member reading the questionnaire and considering the responses from the perspective of their own activities and their clients. The team then discusses the responses to each question together and agrees on the team's shared opinion. The results of the different teams are recorded separately.

It is important to ensure that the questions are answered truthfully and the responses are recorded accurately. The questionnaire allows us to monitor the implementation of nutritional care.

Home care unit
Local service area

_____

1. The team's home care employees have familiarised themselves with the Meals on Wheels Guide, Nutritional care / Nutrition for older adults.
( ) Yes
( ) Partially
( ) No

2. The team's home care employees have familiarised themselves with the materials available on the Nutritional care/Nutrition for older adults website (videos, instructions, etc.), which are available in the intranet.
( ) Yes
( ) Partially
( ) No

3. The instructions for storing and handling food (7.1 Food hygiene) in the Meals on Wheels guide are followed.
( ) Yes
( ) Partially
( ) No

4. The dates on food ("best before", "use by") are monitored and old food items are discarded.
( ) Yes
( ) Partially
( ) No

5. During the home care visit, employees check to ensure that the client cupboards (refrigerator) contain food items: protein sources, dairy products, cereal products and fresh vegetables, fruit or juice.
( ) Yes
( ) Partially
( ) No

6. Home care helps the customer to prepare a meal/shop order
( ) Yes
( ) Partially
( ) No

7. Home care clients who are within the scope of remote care have been offered the opportunity to place a shopping service order as a remote service.
( ) Yes
( ) Partially
( ) No

8. If one of the topics is implemented only partially or not at all, please indicate the question number/numbers and describe the explanation or reason.

_____
_____
_____

9. The help needed by the client in the meal situation (for example, setting the table, meal aids, heating food) has been assessed and recorded in the care plan.
( ) Yes
( ) Partially
( ) No

10. The client is encouraged to/assisted in moving to a table to eat.
( ) Yes
( ) Partially
( ) No

11. The employee ensures that milk/buttermilk and sandwiches are included in the client's meal.
( ) Yes
( ) Partially
( ) No

12. If necessary, home care staff provide the client with company/support/assistance in the meal situation.
( ) Yes
( ) Partially
( ) No

13. Home care clients who are within the scope of remote care have been offered the opportunity to participate in group meals via remote connection.
( ) Yes
( ) Partially
( ) No

14. Appropriate administration of medicines is ensured: the medicines are not mixed with the food on the plate in conjunction with eating.
( ) Yes
( ) Partially
( ) No

15. The client takes a vitamin D supplement.
( ) Yes
( ) Partially
( ) No

16. If one of the topics is implemented only partially or not at all, please indicate the question number/numbers and describe the explanation or reason.

_____
_____
_____

17. The client's meal rhythm and daily meals and a description of them are recorded in the care plan, for example, breakfast (porridge), lunch (hot meal), snack (coffee and pastry), dinner (snack type meal), evening snack (bread and milk).
( ) Yes
( ) Partially
( ) No

18. The client's eating habits and preferences have been recorded in the care plan.
( ) Yes
( ) Partially
( ) No

19. The client's need for a special diet is assessed regularly.
( ) Yes
( ) Partially
( ) No

20. Justification for the client's food texture and special diet has been recorded in the care plan.
( ) Yes
( ) Partially
( ) No

21. An allergic client's food allergies have been recorded in the risk information section of the care information system.
( ) Yes
( ) Partially
( ) No

22. Observations about the client's nutrition, eating and food quantities are recorded on a daily basis.
( ) Yes
( ) Partially
( ) No

23. Information about the client's individual oral care has been recorded in the care plan.
( ) Yes
( ) Partially
( ) No

24. Information about the client's individual oral care is taken into account when implementing nutrition.
( ) Yes
( ) Partially
( ) No

25. The home care nurses have completed an online course on oral care for older clients. (Intranet instructions for home care activities → online courses)
( ) Yes
( ) Partially
( ) No

26. If the client has a tendency to eat extra snacks or consume a lot of sugar between meals, this is recorded in the care plan.
( ) Yes
( ) Partially
( ) No

27. Water is recommended to the client as a drink to quench thirst, and it is offered in connection with a home care visit.
( ) Yes
( ) Partially
( ) No

28. Milk or buttermilk is recommended as a drink to quench thirst for clients at risk of malnutrition and clients with a poor appetite.
( ) Yes
( ) Partially
( ) No

29. If one of the topics is implemented only partially or not at all, please indicate the question number/numbers and describe the explanation or reason.

_____
_____
_____

30. The customer is weighed at least once a month and the weight is recorded in the client information system.
( ) Yes
( ) Partially
( ) No

31. The client's weight development is monitored and weight changes are reacted to.
( ) Yes
( ) Partially
( ) No

32. MNA-test is performed for the client in connection with the RAI assessment and whenever necessary.
( ) Yes
( ) Partially
( ) No

33. The client's care plan utilises weight data and BMI, as well as information obtained from the MNA-test and RAI assessments.
( ) Yes
( ) Partially
( ) No

34. If a client has **unintentional weight loss**, a low BMI or a MNA score of less than 17, their diet is "enriched" with conventional foods or oral nutritional supplements, or they are placed on an enriched diet
( ) Yes
( ) Partially
( ) No

35. During a period of intensified nutritional care, the client is weighed once a week or more frequently.
( ) Yes
( ) Partially
( ) No

36. More home care visits are arranged for the client to ensure adequate nutrition.
( ) Yes
( ) Partially
( ) No

37. A Mobility Agreement has been made with the client and it is followed.
( ) Yes
( ) Partially
( ) No

38. If one of the topics is implemented only partially or not at all, please indicate the question number/numbers and describe the explanation or reason.

_____
_____
_____

39. You can also comment on the content of the questionnaire or provide development proposals

_____
_____
_____

City of Helsinki. Home care.

Permission to include the form as part of the Food Recommendation for Older Adults has been obtained from the City of Helsinki's Social Services and Health Care Division.

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 or unable	☐ 2 points

• How much difficulty do you have walking across a room?

None	☐ 0 points
Some	☐ 1 point
A lot, unable or use aids	☐ 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 or 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

If the score is > 4, the client has sarcopenia, 0 means no sarcopenia.

NRS 2002 method for screening malnutrition risk[1]

Date _____

BASIC PATIENT INFORMATION

Name of patient				Personal identity number
Height (cm)	Current weight (kg)	☐ weighing ☐ notification	BMI (kg/m²)	Weight(1–2) 3 months ago kg

1 ASSESSMENT OF NUTRITIONAL STATUS

BMI	Weight loss during the previous 3 months		Dietary intake during the last week	
☐ > 20.5 = 0 points	☐ No weight loss	= 0 points	☐ Has eaten a normal amount	= 0 points
	☐ 5–10%	= 1 point	☐ Has eaten more than half	= 1 point
☐ 18.5–20.5 = 2 points	☐ 10–15% (more than 5% / 2 months)	= 2 points	☐ Has eaten about half or less	= 2 points
☐ < 18.5 = 3 points	☐ More than 15% (more than 5 % / 1 month)	= 3 points	☐ Has eaten very little	= 3 points

Record the highest score for the sections BMI, weight loss or amount of food (0–3). ☐

2 SEVERITY OF DISEASE IN TERMS OF THE NUTRITIONAL SITUATION

	0 points	1 point	2 points	3 points	Score
Severity	**Normal**	**Mild**	**Moderate**	**Severe**	
		• a patient who is weak but out of bed regularly • a chronically ill patient with acute complications • chronic wound <25 cm², stage II pressure ulcer • dialysis treatment • local cancer • hip fracture, femur fracture • chronic pulmonary disease, for example, serious COPD • serious cirrhosis of the liver • minor surgery scheduled or recently performed • Parkinson's disease, MS, a motor neuron disease like ALS • memory disorders	• a patient confined to bed • multiple severe chronic diseases, multiple disabilities • exacerbation phase of a chronic disease requiring inpatient care • recent or scheduled major surgery, repeated surgeries • swallowing difficulties • metastatic cancer, haematological cancer • severe intestinal inflammatory disorder • recent stroke • severe infection, severe pneumonia • burn injury 20–30% • stage III-IV pressure ulcer, chronic wound >25 cm² • patient requiring respiratory support • severe spasticity and compulsive movements, such as severe Parkinson's disease	• intensive care • very major surgery, scheduled for the near future or acute postoperative status • head injury • stem cell transplant	

Record the highest score here according to the situation (0–3). ☐

3 IF THE AGE IS 70 YEARS OR OVER, ADD ONE POINT TO THE SCORE ☐

TOTAL SCORE (add the scores from sections 1, 2 and 3). ☐

SCREENING RESULT AND MEASURES IN DIFFERENT RISK CATEGORIES

☐ **0 points: No risk of malnutrition**
- Record the screening result.
- Repeat the screening every week or as agreed.

☐ **1–2 points: Slight risk of malnutrition**
- Record the screening result.
- Motivate the patient towards good nutrition.
- Repeat the screening every week or as agreed.

☐ **3–4 points: Moderate risk of malnutrition**
- Record the screening result.
- Perform a more detailed nutritional status assessment and make a nutritional care plan, enhance and monitor nutritional care in a multiprofessional manner (physician, nurse, and clinical nutritionist if necessary).
- Repeat the screening every week or as agreed.

☐ **5–7 points: Severe risk of malnutrition**
- Record the screening result.
- Perform a more detailed nutritional status assessment and make a nutritional care plan, enhance and monitor nutritional care in a multiprofessional manner (physician, nurse, and always clinical nutritionist).
- Repeat the screening every week or as agreed.

1 On 25 February 2010, Jens Kondrup approved a modified version of Tampere University Hospital's original NRS-2002 form for use as the NRS-2002 method. Kela and National Institute for Health and Welfare. National Code Service (https://koodistopalvelu.kanta.fi/codeserver/pages/classification-view-page.xhtml?classificationKey=2483&versionKey=2763).

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 m²)
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 22 or greater ☐.☐

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

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.

For more information: www.mna-elderly.com

MNA results and operating instructions in residential care

Compare the result with the previous assessment, note any changes, investigate the reasons and react to them.

24–30 points: normal nutritional status	17–23.5 points: increased risk of malnutrition	Less than 17 points: malnutrition or undernutrition
Record the weight, height and MNA result. Weight monitoring 1 x month. MNA as part of an RAI assessment or as necessary when the situation changes. Observe the client's eating and provide guidance on choices that promote functional capacity. Support the preservation of good nutritional status.	Record the weight, height and MNA result. Survey the risk factors for malnutrition and methods to affect them. Record the methods used to prevent malnutrition in practice in the care plan. If weight decreases unintentionally and the resident has a poor appetite, order an enriched diet. Oral nutritional supplements are an option if their use is possible financially. If weight decreases unintentionally and the resident has a good appetite, offer more basic food, preferred foods and fat supplements. Implement personal choices, at least for snacks. If weight is not decreasing unintentionally, ensure the diversity of food and adequate protein intake when eating. Utilise a unit diet model that is suitable for the resident. Also assess the individual protein requirement and agree on ways to implement it. Monitor the nutritional status and the impact of agreed actions. Make changes if necessary. Weight monitoring 1 x month. MNA as part of an RAI assessment or when the situation changes.	Record the weight, height and MNA result. Assess the situation comprehensively and determine the key factors affecting nutritional status (for example, illnesses, suitability of the diet, diseases). Utilise RAI and MNA information. Record the methods used to prevent malnutrition in practice in the care plan. Guide and motivate the resident to eat often, consume high-energy foods and drinks, add fat intake and use oral nutritional supplements. Also check protein intake. Monitor the nutritional status and the impact of agreed actions. Make changes if necessary. Weight monitoring 1 x week. MNA every 3 months or when the situation changes. Consult a nutritionist, physician and other partners if necessary.

Always record the following nutritional care points in the care information:
1. Objectives
2. Concrete methods to achieve the objectives
3. Assessment and monitoring of achievement of the objectives

NOTE:
Enhance the nutritional care for a client at risk of malnutrition for a period of *one month*.
If the nutritional status does not clearly improve during this time, consult a nutritionist.

Helsinki
Helsingfors

City of Helsinki. Home care.

Permission to include the form as part of the Food Recommendation for Older Adults[1] has been obtained from the City of Helsinki's Social Services and Health Care Division. The forms for the tools are available in PDF format on the National Nutrition Council website.

1 http://urn.fi/URN:ISBN:978-952-343-517-9

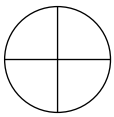
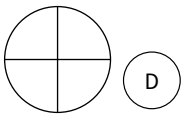
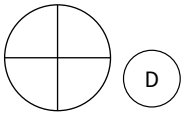
MONITORING NUTRIENT INTAKE

Record the amount of food and drink consumed by the patient for each meal of the day. D = dessert. Record additional information about the content of the patient's meal in the "Other" section. Record fluid list information in the "Other fluids" table.

Name of patient _____

Diet ordered _____

Portion size ordered (S–XL): ____ Date _____

		Other fluids (ml)
BREAKFAST  Tick the proportion of the meal eaten	milk/buttermilk: ____ dl bread: ____ slices fat: YES/NO Cheese + cold cut: ____ slices other: _____ oral nutritional supplement, drink (ml): ____	
LUNCH  Tick the proportion of the meal eaten	milk/buttermilk: ____ dl bread: ____ slices fat: YES/NO Cheese + cold cut: ____ slices other: _____ oral nutritional supplement, drink (ml): ____	
SNACK	coffee/tea: ____ dl pastry YES/NO other: _____ oral nutritional supplement, drink (ml): ____	
DINNER  Tick the proportion of the meal eaten	milk/buttermilk: ____ dl bread: ____ slices fat: YES/NO Cheese + cold cut: ____ slices other: _____ oral nutritional supplement, drink (ml): ____	
EVENING SNACK	milk/buttermilk: ____ dl yoghurt/curd milk/quark: ____ dl bread: ____ slices fat: YES/NO Cheese + cold cut: ____ slices other: _____ oral nutritional supplement, drink (ml): ____	

Modified according to instructions from Kuopio University Hospital.
Source: Vitality in later years – food recommendation for older adults. (Original Finnish version)

Quality criteria for nutrition in residential care

This is a Nutritional quality criteria questionnaire intended for residential care hospital, rehabilitation and nursing units.

Responding to the questionnaire and data collection:

Print out the questionnaire on paper for employees to read. Each primary nurse should consider the responses for their residents. A joint event should be held in the ward/group home to address the questions and the ward's common response to each question. It is important to collect the responses accurately and truthfully.

Completing the questionnaire regularly makes it possible to monitor the development of nutritional care in general and by profit centre. The responses are used in the ward and in the local nutrition cooperation network for the purpose of monitoring and developing nutritional care.

1. Name and position of respondent _____

2. DIVISION/UNIT
( ) ready menu

3. DEPARTMENT _____

4. The unit organises food experiences (celebrations, special breakfasts, pizza days, etc.)
( ) yes
( ) no

5. Bread, pastries, etc. are baked in the care unit
( ) yes
( ) no

6. Flexibility regarding mealtimes is possible according to the resident's needs
( ) yes
( ) no

7. There are enough dining tables – residents and nurses can sit at the same table
( ) yes
( ) no

8. A calm atmosphere is ensured in the dining facilities during meals
( ) yes
( ) no

9. The tables are nicely set with napkins, tablecloths and flowers
( ) yes
( ) no

10. The staff of the unit provide company/ support/assist residents during meals
( ) yes
( ) no

11. The staff implements *social eating* by eating at the same tables with the residents
( ) occurs
( ) not implemented

12. The utensils used by residents supports initiative and eating in accordance with resources
( ) yes
( ) no

13. If one of the topics is implemented poorly or not at all, describe the possible explanation or reason for this.

_____
_____
_____

14. What proportion of residents has eaten in a shared restaurant outside the ward during the past month?
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

15. Residents eat with each other on a daily basis
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

16. Percentage of residents who eat BREAKFAST while sitting in a wheelchair, geriatric chair, etc.
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

17. Percentage of residents who eat LUNCH while sitting in a wheelchair, geriatric chair, etc.
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

18. Percentage of residents who eat their EVENING SNACK while sitting in a wheelchair, geriatric chair, etc.
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

19. Percentage of residents who eat the following daily meals according to the recommendation:
• breakfast by 10
• lunch at 11–13
• dinner at 16:30–18
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

20. Percentage of residents who have daytime coffee at 14–15
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

21. Evening and night-time snacks and breakfast are eaten so that the night-time fast is less than 11 hours for the following *percentage of residents*
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

22. Percentage of residents who choose bread and food beverages themselves on a daily basis
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

23. Percentage of residents who participate in the selection of snacks and evening snacks
( ) 76–100%
( ) 51–75%
( ) 26-50%
( ) 1–25%
( ) 0%

24. What is the percentage of residents for whom the content of the evening snack corresponds to one of the options in the Resident's Food Guide (Basic Food p. 23)?
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

25. What percentage of residents are given medicines separately from meals
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

26. What percentage of residents receive a vitamin D supplement according to the recommendation
- 20 µg/day for people aged 75 and older
- 10 µg/day for people under the age of 75 if necessary (see Resident's Food Guide p. 9)

( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

27. The need for a special diet is assessed when updating the care plan
( ) 76–100 %
( ) 51–75 %
( ) 26–50 %
( ) 1–25 %
( ) 0 %

28. What percentage of residents has been weighed upon arrival and on a monthly basis
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

29. Development of weight and BMI is monitored **so that it is possible to react to weight changes in a timely manner**
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

30. RAI and MNA information that describes nutrient intake and nutritional status is utilised when planning care
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

31. RAI information that describes oral health is utilised when planning care
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

32. Serious food allergies are recorded in risk information
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

33. Eating habits and preferences are recorded in the care plan
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

34. The diet and its texture are recorded in the care plan (for example, Basic, Enriched, Soft)
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

35. Notes about eating and food quantities are recorded in the daily entries
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

36. Individual oral care is recorded in the care plan
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

37. Edible oil is applied to the oral mucous membranes of a resident with dry mouth to make swallowing easier
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

38. Individual nutritional care is recorded in the care plan
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

39. The impacts of nutritional care are assessed when evaluating care work
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

40. Nutritional care is changed during the care on the basis of an assessment
( ) 76–100%
( ) 51–75%
( ) 26–50%
( ) 1–25%
( ) 0%

41. If one of the topics is implemented poorly or not at all, describe the possible explanation or reason for this.

_____
_____
_____

42. A larger portion size is ordered when the resident eats well, but weight still decreases
( ) yes
( ) no

43. Favourite foods and extra high-energy and high-protein snacks are offered to people who are undernourished and/or losing weight unintentionally
( ) yes
( ) no

44. An Enriched diet is selected within two weeks if weight decreases despite other measures
( ) yes
( ) no

45. The impact of an Enriched diet on weight is monitored by weighing the patient weekly
( ) yes
( ) no

46. Residents who actively wake up at night are offered a night-time snack if they are undernourished or when they are losing weight unintentionally
( ) occurs
( ) not implemented

47. A note about a late evening or night-time snacks or an early morning breakfast has been recorded in the care plan for residents who are undernourished and at risk of malnutrition
( ) yes
( ) no

48. Every resident suffering from constipation receives foods that decrease the symptoms
( ) yes
( ) no

49. After induction, people participating in care use the Resident's Food Guide
( ) yes
( ) no

50. Self-monitoring instructions are followed (Resident Food Guide p. 11–12)
( ) yes
( ) no

51. A sufficient amount of food is ordered, with consideration to residents who require a lot of energy
( ) yes
( ) no

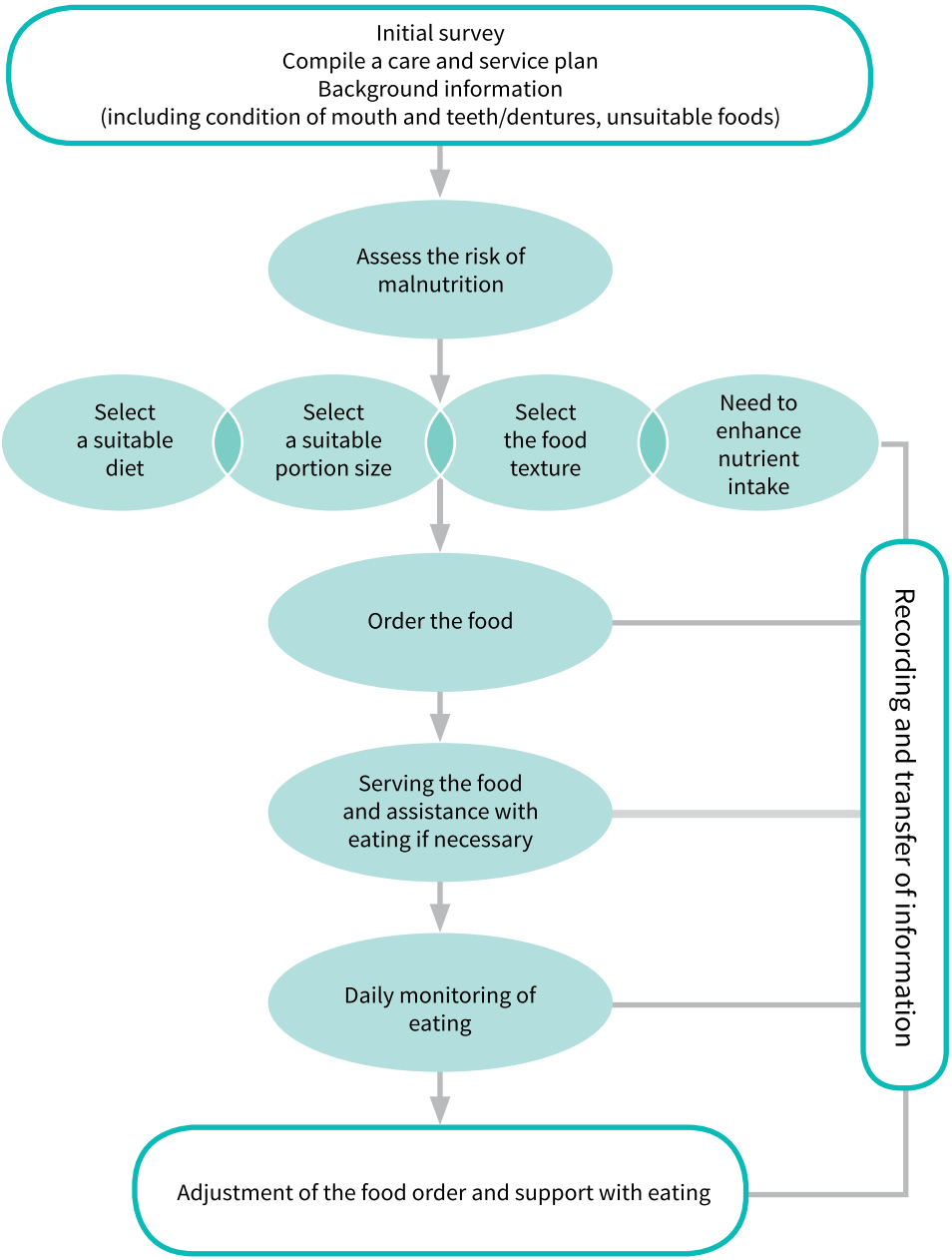
52. Ready products are ordered based on residents' needs
( ) yes
( ) no

53. If one of the topics is implemented poorly or not at all, describe the possible explanation or reason for this.

_____
_____
_____

City of Helsinki. Residential care.

Permission to include the form as part of the Food Recommendation for Older Adults has been obtained from the City of Helsinki's Social Services and Health Care Division.



Modified according to instructions from Kuopio University Hospital.

City of Helsinki.
Social Services and Health Care Division

ORAL HEALTH ASSESSMENT

Client information	Name	Personal identity number
	Institution/ward	
	Teeth and dentures (check one option)	
	☐ Natural teeth ☐ Natural teeth and dentures ☐ No teeth ☐ No teeth and full dentures	
	Oral care equipment	

Date of assessment, performed by						
Lips						
Oral mucous membranes, gums						
Tongue						
Teeth						
Dentures						
Saliva						
Date of next assessment						

	Description of symptom and scale		
	1	**2**	**3**
	No actions, good daily oral care	**Needs enhanced oral care or contact a dental clinic.**	**Contact a dental clinic**
Lips	smooth, pink, moist	dry, chapped, ulcers in the corners of the mouth	ulcerated, bleeding
Oral mucous membranes, gums take out removable dentures	pink, moist, firm gums	reddish, dry or splotchy, flaky coatings, bleeding gums	damage or changes in mucous membranes, ulcers
Tongue	pink, moist, rough	smooth, red, dry, coated	damage (with or without bleeding), ulcers
Teeth	clean, no visible coatings (plaque) or food particles	coatings (plaque) locally, broken teeth	coatings (plaque+tartar) extensively, broken teeth
Dentures	clean and functional (fit well)	coatings and food particles, function poorly	broken, not worn
Saliva	a gloved finger slides easily on the mucosa of the cheek	slides slowly	does not slide at all

City of Helsinki. Oral health care.
In cooperation with University of Nebraska Medical Center and Oncology Nursing Forum. Translated and modified by Pia Andersson, Highschool Kristianstad. 1994, rev Sep. 2000. Translated and modified in the City of Helsinki's Social Services and Health Care Division.

Tehh-046 7.9.2015

City of Helsinki. Oral health care.

Permission to include the form as part of the Food Recommendation for Older Adults has been obtained from the City of Helsinki's Social Services and Health Care Division.

City of Helsinki, Health Centre development project: (27 September 2006)
Nielemisen arviointi- ja hoitokäytännöt akuuttisairaaloissa
(Haapala, Heikkinen, Leivo & Passinen)

EVALUATION OF SWALLOWING IN PATIENTS
WITH A CEREBROVASCULAR DISORDER

Patient _____ Personal identity number _____

Researcher _____ Date _____

Diagnosis _____

Anamnestic information

Teeth	☐ Own	☐ Good	☐ Poor	☐ No teeth
Dentures	☐ Yes	☐ No		
Hemiparesis	☐ Yes	☐ No		
Paresis side	☐ Right	☐ Left	☐ Both	
Degree of paresis	☐ Mild	☐ Moderate	☐ Severe	
Facial paralysis	☐ Yes	☐ No		
Hypersalivation	☐ Yes	☐ No		
Tracheostomy	☐ Yes	☐ No		
CRP, Elevated	☐ Yes	☐ No		
Pneumonia	☐ Yes	☐ No		
Effective coughing	☐ Yes	☐ No		

Weight, height and BMI

Upon arrival in the ward _____

After 1 week _____

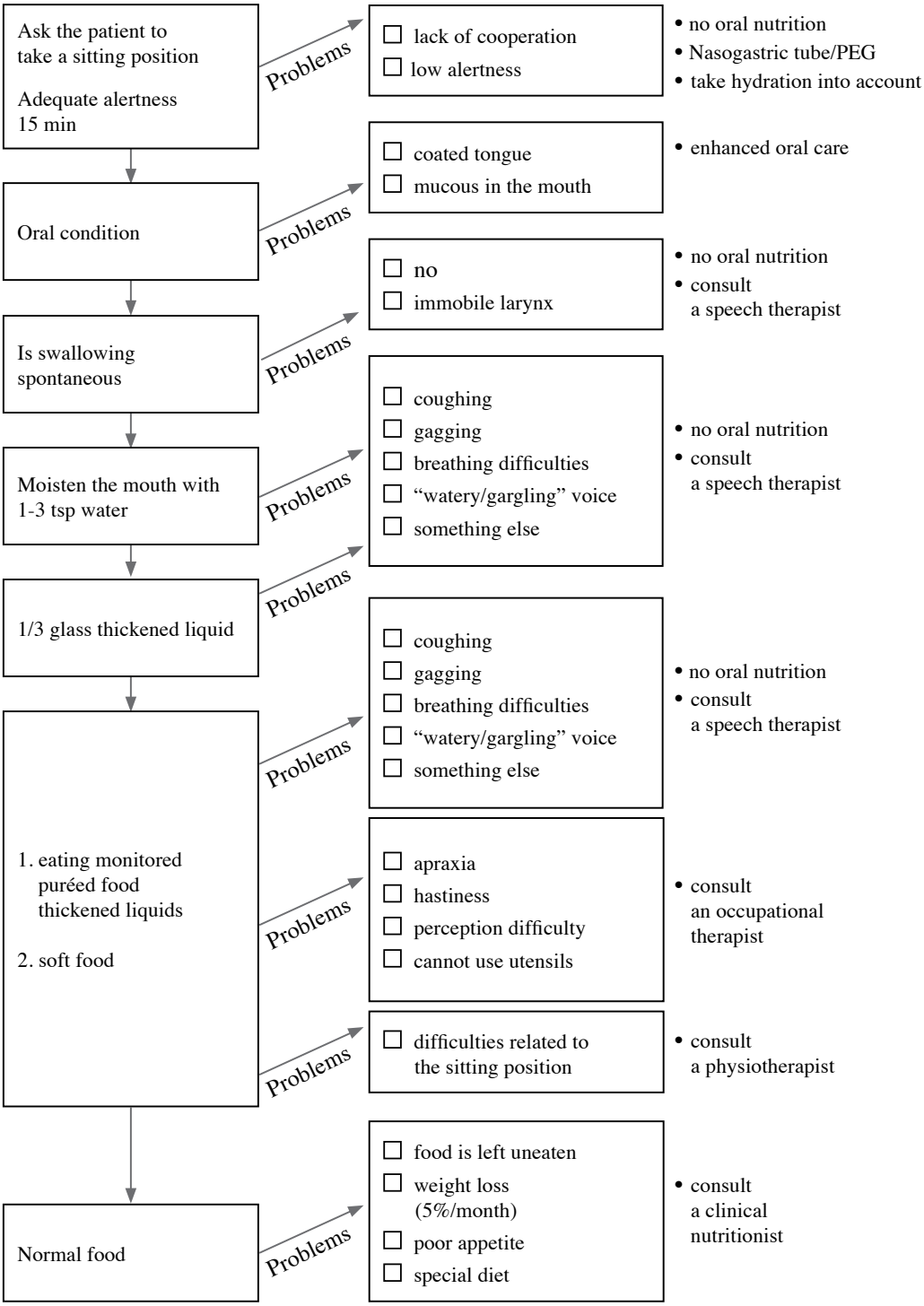
After 2 weeks _____

After 3 weeks _____

After 4 weeks _____

WEEKLY WEIGHT MONITORING
If weight decreases by 5%/month,
consult a clinical nutritionist

Assessment of swallowing



Permission to include the form as part of the Food Recommendation for Older Adults has been obtained from the City of Helsinki's Social Services and Health Care Division.

Appetite

1. How would you describe your appetite?				
1 point	2 points	3 points	4 points	5 points
• Very poor	• Poor	• Average	• Good	• Very good
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
3. Food taste...				
1 point	2 points	3 points	4 points	5 points
• Very bad	• Bad	• Average	• Good	• Very good

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

A score of less than 14 indicates a poor appetite and a significant risk of weight loss ≥ 5% during the next six months.

Spoon-to-mouth exercise

The Spoon-to-mouth exercise can be used when caring for people with memory disorders. The objective of the exercise is to:

- Motivate a person to eat
- Create a positive atmosphere and team spirit
- Stimulate and activate
- Provide time orientation
- Increase joint mobility
- Improve blood circulation
- Improve perception
- Improve hand-eye coordination
- Improve motor skills of the mouth and hands
- Activate the brain

An example of leading a Spoon-to-mouth exercise session

- Take a good position and place your hands on the table.
- Look at your hands, nails and palms for a moment. Think about how old your hands are and everything that has been done with them. Rub some disinfectant onto your hands.
- Talk about the importance of hands when eating.
- Clench the hands into fists and open them.
  Use speech to set the pace for this movement.
- Make the task more difficult: Make a fist with one hand and keep the other open. Practice.
- Think about what day of the week it is. List the days of the week twice and simultaneously make a fist with one hand while keeping the other open.
- Repeat the previous movement, but list the days of the week backwards twice.
- Turn the palms so that they face up and down alternatively.
  Use speech to set the pace for this movement.
- Make the task more difficult: turn one palm up and the other down. Practice.
- Think about which month it is now. List the months of the year while turning the palms at the same time: One turns up, the other turns down.
- Repeat the previous movement, but list the months of the year backwards.
- Stretch the fingers. Spread the fingers and then bring them together.
  Use speech at the same time.
- Touch the thumb to each finger of the same hand and say out loud which finger it is touching. An easier version involves alternate between touching the thumb to only the fore finger and middle finger.
- Sing a familiar song (for example *Kullan ylistys*). During the first verse, bend and straighten the elbow. During the second verse, make a boxing movement to the front and also stretch the fingers. During the third verse, touch the forefingers to the chin in an alternating way. During the fourth verse, stretch the wrists.
- Learn the Finnish nursery rhyme *Vatsa hankaa selkärankaa/huulet huokaa tuokaa ruokaa.* Recite it together a few times in louder voices each time.
- Tell the participants what kind of food is being served and wish them a good meal.

APPENDICES

Appendix 1. Energy and protein table for food items

FOOD ITEM	Quantity	Energy kcal	Protein g	Quantity	Energy kcal	Protein g
PORRIDGES AND GRUELS						
Porridge (made with water)	1⁄2 bowl (1 dl)	52	2.0	1 bowl (2 dl)	104	4.0
Porridge (made with milk)	1⁄2 bowl (1 dl)	100	5.2	1 bowl (2 dl)	200	10.4
Gruel (made with milk)	1⁄2 bowl (1 dl)	62	3.7	1 bowl (2 dl)	124	7.4
Rice porridge (made with milk)	1⁄2 bowl (1 dl)	83	3.3	1 bowl (2 dl)	165	6.6
Semolina porridge	1 dl (100 g)	65	1.2	1.5 dl (150 g)	100	1.8
Oil supplement in porridge	1 tsp (4.5 g)	40	0	1 tbsp (13.5 g)	120	0
BREADS AND BREAD TOPPINGS						
Rye bread	1⁄2 slice (15 g)	38	1.4	1 slice (30 g)	76	2.8
Multigrain and dark wheat bread	1⁄2 slice (10 g)	25	0.8	1 slice (20 g)	50	1.6
Karelian pastry	1 small (35 g)	83	2.2	1 pce (60 g)	142	3.7
Butter	1 tsp (5 g)	36	0	1 pat (10 g)	73	0
Vegetable fat spread (40%)	1 tsp (5 g)	18	0	1 pat (10 g)	37	0
Vegetable fat spread (60%)	1 tsp (5 g)	27	0	1 pat (10 g)	53	0
Vegetable fat spread (80%)	1 tsp (5 g)	36	0	1 pat (10 g)	72	0
Cheese (15–18%)	1 slice (10 g)	23	2.3	2 slices (20 g)	46	4.5
Cheese (25–35%)	1 slice (10 g)	36	2.8	2 slices (20 g)	73	5.6
Cheese spread (20–24%)	1 slice (20 g)	60	3.7	2 slices (40 g)	120	7.4
Cold cuts (sausage)	1 slice (15 g)	30	2	2 slices (30 g)	60	4
Cold cuts (ham)	1 slice (15 g)	20	3.4	2 slices (30 g)	40	6.8
Liver sausage	1 slice (15 g)	33	1.7	2 slices (30 g)	65	3.4
Egg	1 slice (8 g)	12	1	Whole (55 g)	80	6.9

FOOD ITEM	Quantity	Energy kcal	Protein g	Quantity	Energy kcal	Protein g
YOGHURTS, CURD MILKS, JUICE SOUPS AND QUARKS						
Yoghurt (fat-free)	1 dl (100 g)	71	2.8	1.5 dl (150 g)	107	4.2
Yoghurt (2% fat)	1 dl (100 g)	86	3.6	1.5 dl (150 g)	129	5.4
Curd milks (1%)	1 dl (100 g)	40	3.3	2 dl (200 g)	80	6.6
Curd milks (2%)	1 dl (100 g)	50	2.9	2 dl (200 g)	100	5.8
Kissel/juice soup	1 dl (100 g)	50	0.2	1.5 dl (150 g)	75	0.3
Snack quark	1 dl (100 g)	117	6.7	1.5 dl (150 g)	176	10.1
DRINKS						
Milk/buttermilk, fat-free	1 dl	34	3.3	1 glass (1.5 dl)	51	5
Milk (1%)	1 dl	40	3.3	1 glass (1.5 dl)	60	5
Semi-skimmed milk (1.5%)	1 dl	46	3.2	1 glass (1.5 dl)	69	4.8
Whole milk (3.5%)	1 dl	63	3.2	1 glass (1.5 dl)	95	4.8
Buttermilk (2.5%)	1 dl	51	3.2	1 glass (1.5 dl)	77	4.8
100% fruit juice	1 dl	45	0.2	1 glass (1.5 dl)	68	0.3
Fruit beverage	1 dl	57	0	1 glass (1.5 dl)	86	0
Coffee or tea	Coffee cup (1.1 dl)	0	0.3/0	1 mug (1.7 dl)	0	0.5 / 0
Sugar cube	1 pce (3 g)	12	0	2 pcs (6 g)	24	0
Sugar (crystal)	1 tsp (4 g)	16	0	1 tbsp (12 g)	50	0
Cream for coffee (19%)	2 tsp (10 ml)	20	0.2	1 tbsp (15 ml)	30	0.3
Milk for coffee	Fat-free 1 tbsp (15 ml)	5	0.5	Semi-skimmed 1 tbsp (15 ml)	7	0.5
OTHERS						
Oral nutritional supplement	1/2 bottle	150	10	1 bottle (2 dl)	300	20

FOOD ITEM	Quantity	Energy kcal	Protein g	Quantity	Energy kcal	Protein g
MAIN DISHES						
Minced meat patty	1 pce (60 g)	150	8.7	2 pcs (120 g)	300	17.4
Meat balls	1 pce (30 g)	73	5.1	4 pcs (120 g)	290	20.5
Minced meat sauce	1 dl (100 g)	130	10.2	1.5 dl (150 g)	195	15.3
Other meat sauces	1 dl (100 g)	143	9.7	1.5 dl (150 g)	215	14.5
Meat casseroles	1 dl (100 g)	110	7.5	2 dl (200 g)	220	15.0
Potato casseroles	1 dl (100 g)	150	5	1 dl (200 g)	300	10
Meat and fish stews	1⁄2 bowl (1 dl)	105	7	bowl (2 dl)	210	14
Soups (meat, sausage)	1⁄2 bowl (1 dl)	60	3.9	bowl (2 dl)	120	7.8
Pea soup	1⁄2 bowl (1 dl)	92	7.9	bowl (2 dl)	185	15.8
Fish soup	1⁄2 bowl (1 dl)	75	5.2	bowl (2 dl)	150	10.3
Puréed soups (made with milk)	1⁄2 bowl (1 dl)	40	0.9	bowl (2 dl)	80	1.8
Frankfurters	1 pce (30 g)	74	3.5	4 pcs (120 g)	295	14
Grill sausages	1 pce (100 g)	240	11.6			
Pork chops (breaded)	1⁄2 pce (63 g)	200	8.5	1 pce (125 g)	400	17
Liver steak			25	1 pce (120 g)	155	25
Piece of fish			25	1⁄2–1 pce (120 g)	180	25
Main course crepes	1 pce (25 g)	47	7.5	5 pce (125 g)	200	7.5
Vegetarian dishes	1 dl (100 g)	80	9.4	2 dl (200 g)	160	9.4
Woks	1 dl (100 g)	80	18.6	2 dl (200 g)	160	18.6
WARM SIDE DISHES						
Potato	1 pce (60 g)	50	1	2 pce	100	2
Mashed potato (made with milk)	1 dl (100 g)	90	2.1	1.5 dl	135	3.2
Rice	1 dl (80 g)	98	1.8	1.5 dl	145	2.6
Macaroni	1 dl (65 g)	60	2	2 dl	120	4
Gravy	0.5 dl	40	0.4	1 dl	80	0.8
White sauce	0.5 dl	55	2.4	1 dl	110	4.7
Vegetable side dish	0.5 dl (25–40 g)	10	1.7	1 dl (50–80 g)	20	3.3

FOOD ITEM	Quantity	Energy kcal	Protein g	Quantity	Energy kcal	Protein g
SALADS, VEGETABLES AND FRUIT						
Fresh salad	0.5 dl	4	0.3	1 dl	8	0.6
Salad dressing (oil-based)	1 tsp (4.5 g)	15	0	1 tbsp (14 g)	44	0
Potato/beetroot salad (with mayonnaise)	0.5 dl	68	0.6	1 dl	135	1.2
Cucumber	2 slices	0	0.05	4 slices	≈0	0.1
Tomato	1 slice	3	0.1	2 slices (30 g)	6	0.2
Apple	1⁄2 pce	33	0.2	1 pce (200 g)	65	0.4
Banana	1⁄2 pce	60	0.9	Whole (150 g)	120	1.7
DESSERTS AND SNACKS						
Dessert kissel	1 dl	58	0.5	1.5 dl	87	0.8
Fruit salad	1 dl (70 g)	35	0.4	1.5 dl	55	0.6
Dessert pudding	0.5 dl (50 g)	144	2.6	1 dl (100 g)	288	5.4
Ice cream	1 stick (60 g)	157	2.6	1 cone (115 g)	255	4.7
Pancake	1⁄2 piece	62.5	2.7	1 piece (85 g)	125	5.4
Dessert crepes	1 pce (18 g)	32	1.3	5 pcs (90 g)	160	8
Berry jam	1 tsp (5,5 g)	11	0	1 tbsp (17 g)	33	0
Whipped cream	1 tbsp (7 g)	25	0.1	0.5 dl (25 g)	90	0.5
Coffee cake	1 slice (25 g)	90	1.4			
Coffee bread	1 slice (30 g)	85	2.2	1 pce (50 g)	142	3.7
Biscuits	1 small (8 g)	35	0.6	1 large (15 g)	50	1.2
Cream cake slice (small)	1 small (40 g)	80	1.5	1 medium slice (70 g)	140	2.6
Sweet	1 pce (3 g)	10	0			
Chocolate confection	1 pce (8 g)	34	0.4			

Appendix 2. Pajala porridge

1 portion

2 dl	water
1 tsp	linseed
2	prunes
2	dried apricots
2 tbsp	graham flour or rye flakes
2 tsp	bran

- Soak the linseed, prunes and apricots in water overnight.
- Boil them in the morning and add the flour and bran.
- Let the porridge simmer for about 15 minutes.

Appendix 3. Instructions for enriching food

Oral nutritional supplements sold in pharmacies have been used in the instructions.
Adapted according to Nutricia Medical guidelines.

WARM SOUP

Ingredients
1 bottle (125 ml) Neutral flavour oral nutritional supplement
0.75 dl water
1 pouch of the desired soup mix, for example, cauliflower-broccoli soup
or creamy chicken soup
salt, pepper, fresh/frozen herbs
In addition: ½ cup ready-made croutons

Instructions
1. Heat (don't boil) the oral nutritional supplement and the water, add the pouch of soup mix and mix.
2. Season with salt and pepper, garnish with herbs.
3. Serve in a large cup with croutons.

Tip! You can also add shrimp, crab, smoked salmon, feta cheese, chopped ham or grated parmesan cheese to the soup.

OMELETTE

Ingredients
½ bottle (appr. 60 ml) Neutral flavour oral nutritional supplement
2 eggs
1 tbsp grated cheese
Salt and pepper to taste
In addition: 2 slices of ham, fresh basil

Directions
1. Break the eggs and add them to the oral nutritional supplement. Whip the grated cheese, salt and pepper into the mix.
2. Microwave the egg mixture for 3 minutes on high (750 W).
3. Garnish with chopped ham and fresh basil.

Tip! Season with salt and pepper or other spices.
Vary the added ingredients (for example, ham, feta cheese, smoked salmon or avocado).

COCOA

Ingredients
1 single-serving pouch of cocoa powder
1 bottle (125 ml) Neutral flavour oral nutritional supplement
0.75 dl water

Instructions
1. Heat the water and nutritional supplement drink (don't boil).
2. Add the cocoa and mix.

RICE PORRIDGE

Ingredients
250 g prepared rice porridge
1 bottle (125 ml) Neutral flavour oral nutritional supplement
Sugar, cinnamon and vegetable fat spread, berries

Instructions
1. Place the porridge in a deep plate or bowl.
   Add the oral nutritional supplement and mix until smooth.
2. Heat in the microwave at full power (750 W) for 3 minutes.
3. Serve with sugar, cinnamon, vegetable fat spread and berries.

MASHED POTATOES

Ingredients
1 bottle Neutral flavour oral nutritional supplement
½ pouch (45 g) instant mashed potato powder
1.3 dl water
½ tbsp liquid vegetable fat spread
Dash of salt

Instructions
1. Boil the water in a hot water kettle. Add salt and vegetable fat spread. Mix.
2. Add the oral nutritional supplement and mashed potato powder.
   Mix and let stand for about 1 minute.

Appendix 4. Nutritional status of older adults in regular services based on RAI assessments[1]

Autumn 2018	Home Care (HC)*	Regular sheltered housing (HC)	Sheltered housing with 24-hour assistance (HC)	Sheltered housing with 24-hour assistance (LTC)	Home care for older persons (LTC)	Long-term care in a health centre (LTC)
Clients, no.	26,172	1,016	3,534	18,498	2,969	629
Age (years), average	81.7	82.9	83.3	83.6	83.8	83.4
Cognition (CPS 0-6), average	1.5	1.7	3.0	3.3	3.5	3.6
Daily performance (ADL-H 0-6), average	0.8	1.1	3.0	3.5	4.2	4.5
Frailty Health stability (CHESS 0–5), average	1.0	1.0	1.2	1.4	1.3	1.4
Frailty: perceives health status as poor, %	28	31	26	–	–	–
Frailty: terminal care situation, %	0	0	1	1	2	1
Informal care: lives with the client, %	20	4	1	–	–	–
Informal care: informal caregiver, %	13	8	5	–	–	–
Home environment: inadequate kitchen facilities, %	2	1	0	–	–	–
Need for help with preparing meals, %	76	89	99	–	–	–
Need for help in eating, %	17	16	49	62	76	74
Nutrition: inadequate meals, %	13	8	7	–	–	–
Nutrition: unintentional weight loss, %	4	5	–	8	9	9
- Nutrition: unintentional weight loss, number included in the calculation	26,130	1,012	–	–	–	–
Nutrition: BMI under 24 and losing weight, %	14	13	19	17	19	19
- Nutrition: BMI under 24 and losing weight, number included in the calculation	15,016	725	2,447	13,030	2,287	384
Nutrition: dehydration, %	6	7	12	3	2	1
Inadequate food intake, Underweight, %	28	23	32	24	28	34
Inadequate nutrient intake, underweight, number included in calculation	26,133	1,012	3,500	–	–	–
Chewing problems, pain in the mouth, %	–	–	–	17	17	11

[a] HC = Client evaluation with the RAI-HC tool (Home care)
[b] LTC = Client evaluation with the RAI-LTC tool (Residential care)
[c] – = Data not collected

Cube updated on 16 June 2019

1 THL. RAI assessments. https://thl.fi/fi/web/ikaantyminen/palvelutarpeiden-arviointi-rai-jarjestelmalla/tietoa-rai-jarjestelmasta/rai-valineisto. (In Finnish)

Appendix 5. Nutrition-related statistics data

	2013	2014	2015	2016	2017	2018
Participating in activities organised by associations etc. (%), age 75 and over	22.1	22.8	22.9	23.1	26.9	26.2
Persons who feel themselves lonely (%), age 75 and over	13	12.1	11.2	11.5	9.4	9.1
Severe mental strain (%), age 75 and over	10.3	9.8	9.4	10.4	8.3	9
Self-rated health good or very good (%), age 75 and over	31.2	32.4	34	34.5	36	42.1
Leisure time physical inactivity (%), age 75 and over	42	40	42.2	44.3	40.8	35
People who have great or greater difficulties in taking care of themselves (%), age 75 or older	14.2	13.5	11.9	15.9	12.2	11.1
Those who experience poor memory (%), age 75 and over	11.5	11.3	9.8	8.5	7.5	8.7
Persons who drink too much alcohol (AUDIT-C) (%), age 75 and over	16	16.7	15.8	19.5	17.6	15.5
Obesity (Body Mass Index BMI ≥ 30 kg/m^2) (%), age 65 and over	20.5	20.7	20	22	20.6	21.7
People who eat fresh and cooked vegetables poorly (%), age 75 and over	30.5	28.9	30.8	29.7	24.5	
Reimbursement for depression medicines in those aged 65 and over, as % of total population of same age	11.5	11.5	11.5	11.2	11.5	11.8
Influenza vaccination coverage, age 65 and over	36.7	41.3	40.1	43.1	47.4	47.7
Received influenza vaccination during the past 12 months, age 75 and over (%)						62.8

Appendix 6. Tips for using nutritional information contained in the RAI assessment

RAI-HC (Home Care)

A new client moves to home care after a period of hospitalisation. The reason for hospitalisation was a decrease in functional capacity caused by a fall, assessment of medication and determination of memory matters. At the end of the hospitalisation period, an assessment determined that the older woman living alone needs home care support in the early stages following discharge.

According to the home care guidelines, a RAI assessment is performed in cooperation with the client and, if necessary, her family The first assessments are made immediately after discharge and within two weeks of discharge.

Important nutritional information included in the RAI-HC assessment includes:

- Ability to eat: independent
- Ability to prepare meals: needs some assistance. The client is able to heat up prepared meals.
- Vomiting, poor appetite, diarrhoea, constipation: poor appetite, constipation.
- Alcohol use: no.
- Weight, unintentional weight loss, serious malnutrition, morbid obesity, BMI: Weight has decreased. BMI = 23, has lost 6 kg over a period of 6 months.
- Low or reduced intake of food and fluid intake. Drinks poorly at times, poor appetite, does not eat full meals.
- Ability to swallow: No problems.
- Chewing problems, dry mouth and difficulties with oral care: oral care has been handled, no problems. Occasionally complains about dry mouth.
- Other RAI information that should be considered when planning nutritional care:
  CPS = 2 (Cognition, short-term memory and slight decision-making problems),
  Pain = 0 (No pain) and DRS = 0 (No depression),
  ADLH = 0 (good daily functional capacity),
  IADL_21 = 9 (needs assistance with, for example, preparing meals and shopping)

RAI-LTC (Long Term Care)

The client is in residential care primarily because of a severe memory disorder and poor functional capacity. Two previous RAI-LTC assessments have already been performed for the client. The client is unable to participate in the assessment, but the daughter is involved. The client has been weighed regularly on a monthly basis. Although weight is low, it has not changed in recent months. The resident's functional capacity has continued to deteriorate and the resident is tired, even though there is no clear reason for the change.

Important nutritional information included in the RAI-LTC assessment includes:

- Ability to eat: eats with guidance and receives assistance if necessary.
- Vomiting and nausea, low fluid intake, diarrhoea, constipation:
  Drinks poorly, constipation.
- Swallowing or chewing problems, mouth pain:
  Unable to chew normal food. Weight, weight loss.
  BMI = 20, stable. Difficulty swallowing.
- Repetitively complains about the taste of food or hunger, leaves 25% or more of meals uneaten: leaves part of meals uneaten.
- Tube feeding, chopped or puréed food, fed with a syringe etc.:
  food has to be puréed.
  Liquids are thickened.
- Oral health assessment, for example, does not use dentures, loose, broken or cariotic teeth, problems with oral mucous membranes and gums, and daily cleaning of the teeth: some missing teeth, cannot wear dentures.
  Oral cleaning is difficult due to clenching of the teeth.
- Other RAI information that should be considered when planning nutritional care:
  CPS = 5 (Severe cognition deterioration),
  ADLH = 5 (needs a lot of assistance with daily functions).

These factors are taken into account in the description of the client's care need, in the care functions and during assessment. The client's views and self-determination are taken into account when planning care if the client is able to participate in the planning of their own care. The client's RAI assessment is carried out regularly and the plan is reviewed. Comparing RAI assessments illustrates changes occurring in the client's situation.

DIRECTIONS

National Nutrition Council and
Finnish Institute for Health and Welfare (THL)

Vitality in later years
– food recommendation for older adults

Vitality in later years – food recommendation for older adults is a new national quality recommendation that promotes and supports the nutrition of older people and provides guidance to arrange quality food services based on the needs of older people.

The recommendation describes a health-promoting diet that is suitable as the foundation for food choices made by all older people. Eating in accordance with the recommendation safeguards the maintenance of good nutritional status, thus promoting health, physical and mental functional capacity as well as social well-being and quality of life. The recommendation contains instructions for determining and monitoring the nutritional status of older people and for implementing nutritional care on an individual basis. It also describes the special characteristics of nutrition for older adults and provides good practices for developing services. The quality criteria and monitoring indicators are intended for self-monitoring and official supervision as well as monitoring and impact assessment carried out at the municipal, regional and national levels.

The recommendation produced by the National Nutrition Council and Finnish Institute for Health and Welfare is intended for operators that make decisions, are responsible for and handle tendering related to care, nursing and food services for older adults as well as for staff working in home care, residential care and food services, for older people themselves and for informal care families. The recommendation is also suitable as a textbook for students in the field.

Finnish institute for health and welfare

VRN National Nutrition Council

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