



Nutrition Factsheet

February 2018

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THE POTENTIAL OF DAIRY PRODUCTS IN PREVENTING UNDERNUTRITION AMONG ELDERLY

Undernutrition among elderly citizens and people being hospitalised is an increasing phenomenon in Western societies and affects the well-being of the individual as well as public health budgets. Thanks to their specific nutritional composition, **dairy products have a potential role in preventing and reversing** this negative trend. EDA suggests undernourishment among elderly citizens and people being hospitalised is given a priority under the current and coming EU health programmes.

UNDERNUTRITION AMONG ELDERLY IN WESTERN SOCIETIES

- In Western societies, many elderly citizens are able to follow a healthy life style, including a varied and balanced diet and therefore benefiting from active and healthy aging and enjoying high quality of life. Undernutrition is not widespread among healthy and well-functioning elderly citizens. However, **some groups of elderly in Western societies**, especially those very advanced in age, **are at risk of undernutrition**, which manifests in different symptoms as unplanned **weight and muscle loss (sarcopenia) and bone fractures due to osteoporosis and increased risk of falling**.
- Germany: about **13 %** of care-dependent elderly in private households are **undernourished** and **57 % have the risk** for malnutrition (1).
- Belgium: incidence of malnutrition is higher in **care centres (16%)** and in **hospitals (30-40%)** than in elderly living at **home (13%)** (NutriAction I study, 2008). Also, the NutriAction II study (2013) showed that **45%** of the screened (70+) were at risk on malnutrition and **12%** were malnourished (2).
- France: the **prevalence of protein-energy malnutrition** increases with age in elderly citizens. It is **4-10 %** in people living at home, **15-38 %** in those in institutional care, and **30-70 %** in hospitalized patients (3).
- Denmark: almost **50 %** of the elderly receiving home care experience unplanned weight loss (4). Also at hospitals, about **20 %** of patients are undernourished or at risk **on admission**, and almost **40%** of the **hospitalized patients** are undernourished or at risk (5,6).
- The Netherlands: the prevalence of undernutrition is relatively high, especially in **home care patients (35%)**, followed by the **general practice (12%)** and elderly people **living at home (11%)** (7).





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- A study has shown that **two of three** elderly citizens participating in ambulatory rehabilitation after a hospital treatment have an unhealthy nutritional state or are at risk of it (8).
- **Weight-losses can have fatal consequences** as even a very small unplanned weight loss can have a big impact on health for elderly citizens and increase the risk of premature death. **Elderly can also be malnourished without experiencing a weight loss or even when they are overweight**, e.g. lacking certain vitamins and minerals or by loss of skeletal muscle mass, compensated in weight by fat mass. Isolated protein deficiencies may also be observed even in elderly people apparently in good health. In that cases, in foods and oral nutritional supplements, preference should be given to high-energy (≥ 1.5 kcal/ml or g) and/or high-protein products (proteins ≥ 7.0 g/100 ml or g or proteins ≥ 20 % of total energy intake) (3).

CAUSES OF UNDERNUTRITION

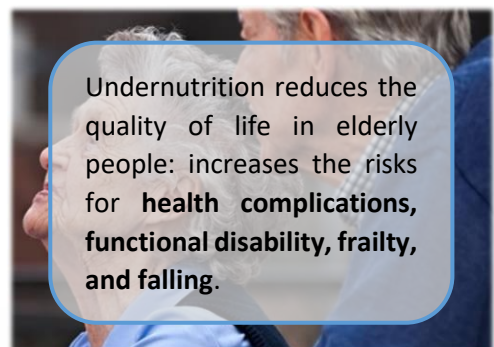
- There are many **complex causes of undernutrition**. For elderly in particular, the main factors associated with undernutrition can be:



- Loss of **taste and/or smell**
- Loss of **appetite** due to non-complicated illnesses
- **Chewing, swallowing, and/or digestion** problems (maldigestion, malabsorption)
- **Less interest and difficulties** doing their own shopping and preparing food (eating less varied meals)
- **Loneliness**
- **Physical impairment**
- **Illness and hospitalization:** undernutrition can occur both during treatment and post-treatment.

CONSEQUENCES OF UNDERNUTRITION

- Undernutrition resulting in lack of certain important nutrients may have negative physiological consequences, e.g.:
- **Lack of protein** can accelerate the already involuntary loss of muscles naturally occurring during ageing (sarcopenia), and can be detrimental in patients in combination with weight loss and loss of appetite in chronically ill patients (cachexia).
- **Lack of vitamins and minerals** can have multiple negative effects, like decreased immune function and cognitive impairment. Lack of **calcium and vitamin D** can lead to loss of bone mass resulting in osteoporosis (common among elderly women especially). **Phosphorus and magnesium** also play an important role in bone health.



Undernutrition reduces the quality of life in elderly people: increases the risks for **health complications, functional disability, frailty, and falling.**



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SOCIAL COSTS OF UNDERNUTRITION

- The negative impact on the well-being of the individual as well as the societal costs of undernutrition are high. Figures show that in Denmark better strategies against undernutrition could save the society costs in the range of approximately **€200 million yearly**. Also studies from the Netherlands and UK show a big potential for public savings by preventing undernutrition among elderly and at hospitals (9).

Undernutrition is not just a problem for **patients and their families**. It is also an important concern for **society**.

THE POSITIVE ROLE OF DAIRY PRODUCTS IN PREVENTING UNDERNUTRITION

- Based on FAO 2013 report, milk and dairy programmes show potential to improve human nutrition worldwide (10). They have a potential role in **preventing or reversing undernutrition** in Western societies, in particular among elderly citizens living in nursing homes, receiving home care, or living in their own homes as well as for patients at hospitals.
- **Dairy products are an excellent source of high quality proteins**, containing all the essential amino acids we need with high leucine levels, which are important to optimally **stimulate skeletal muscle synthesis**. In addition, the bioavailability of dairy proteins is high, meaning that a high proportion of the protein is absorbed from the food and incorporated into proteins in the body. Thus, dairy products contribute to maintain muscle mass, which is particularly important among elderly because muscle loss occurs naturally during ageing (sarcopenia) (11).



- **Dairy products are an important source of calcium** due to the high calcium content. Thus, **dairy products play a role in preventing the loss of bone mass** resulting in osteoporosis (common especially among elderly women).
- **Dairy products contain high levels of vitamin B12**, which is important for normal function of the **brain and immune system**, and also minerals like zinc and selenium, naturally present in dairy, which contribute to the protection of cells from oxidative stress.
- **Dairy products are easily available in supermarkets, storable, tasty and affordable**. Thanks to their nutritional qualities, they do therefore deserve more attention from a public health perspective also with regards to preventing and reversing undernourishment among elderly.
- **Many elderly citizens are already familiar with dairy products, as these products have been a part of their diet for their entire life**. Therefore, it would not be a big change in their purchasing habits to add dairy products in to their shopping basket and to their daily diet. However, most elderly consume less dairy products than recommended by national dietary guidelines. For example, elderly in the Netherlands consume (on average) only half the recommended daily intake of dairy (12).



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- **Dairy products are naturally nutrient rich, fresh and tasty**, which is important for people with a reduced appetite.
- **In some EU Member States, like Denmark, it is already recommended** that elderly people should increase their protein and energy intake. (13). Danish guidelines for people over 65 years old recommend increasing **protein, calcium and vitamin D** intakes for muscle and bone health and maintenance (14). **Dairy products** are known to be good sources of this nutrients.
- **Traditional dairy products** with high protein-energy content like cheeses and milk-based products can be recommended for all elderly and is an easy way to increase protein intake additionally.
- **Specialised dairy products** with specific nutritional qualities, for example drinking yoghurts and dairy desserts with high protein content and/or energy content may be recommended for underweight elderly.
- **Hospital patients, including elderly, are often at risk of losing their appetite due to various medical treatments.** In these situations, patients would need a diet with higher energy and protein content than normally in order to recover quicker. Therefore, a diet including dairy products with high protein and high energy content can be seen as beneficial for a faster recovery period. These dairy products can be both specialised dairy based products targeting consumers with special nutritional needs, but also traditional dairy products like cheeses and other milk-based products.



RECOMMENDATIONS FOR FURTHER ACTIONS

- **Undernourishment** among elderly citizens and people being hospitalised should be a **priority under the current and future EU health programs.**
- A **data collection on the prevalence of undernourishment** among vulnerable populations groups in the EU should be initiated and also a compilation of initiatives (public, private-public, private) in Members States with regards to preventing undernourishment.
- It also will be useful to establish a forum with representatives from Member States experts, NGOs, research institutions, and food business operators with the purpose to **exchange best practices on preventing and reversing undernourishment** among elderly citizens in the EU.

Nutrition intervention may be a cost-effective way to reduce morbidity, mortality, and health care costs.



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REFERENCES

1. German Nutrition Society. The Nutrition Report 2012 [Internet]. Federal Ministry of Food, Agriculture and Consumer Protection. 2012. Available from: <https://www.dge.de/fileadmin/public/doc/en/DGE-Nutrition-Report-summary-2012.pdf>
2. Vlaamse ouderenraad. Ondervoeding, een vaak voorkomend probleem bij de oudste ouderen: Achtergrondnota bij het advies over de aanpak van ondervoeding bij ouderen. [Internet]. 2013. Available from: <http://vlaamse-ouderenraad.be/Actualiteit/Achtergrondnota bij advies ondervoeding Vlaamse Ouderenraad.pdf>
3. Haute Autorité de Santé. Nutritional support strategy for protein-energy malnutrition in the elderly [Internet]. 2007. Available from: https://www.has-sante.fr/portail/upload/docs/application/pdf/malnutrition_elderly_guidelines.pdf
4. Socialstyrelsen. Faglige anbefalinger og beskrivelser af god praksis for ernæringsindsats til ældre med uplanlagt vægttab. 2015;56. Available from: <https://sundhedsstyrelsen.dk/da/udgivelser/2015/~/media/2627323832484F4FB4C2F8747C82A85B.ashx>
5. Kondrup J, Johansen N, Plum LM, Bak L, Larsen IH, Martinsen A, et al. Incidence of nutritional risk and causes of inadequate nutritional care in hospitals. Clin Nutr [Internet]. 2002 Dec;21(6):461–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12468365>
6. Rasmussen HH, Kondrup J, Staun M, Ladefoged K, Kristensen H, Wengler A. Prevalence of patients at nutritional risk in Danish hospitals. Clin Nutr [Internet]. 2004 Oct;23(5):1009–15. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15380890>
7. Schilp J, Kruijenga HM, Wijnhoven HAH, Leistra E, Evers AM, van Binsbergen JJ, et al. High prevalence of undernutrition in Dutch community-dwelling older individuals. Nutrition [Internet]. 2012 Nov;28(11–12):1151–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22749873>
8. Kaur S, Miller MD, Halbert J, Giles LC, Crotty M. Nutritional status of adults participating in ambulatory rehabilitation. Asia Pac J Clin Nutr [Internet]. 2008;17(2):199–207. Available from: <http://apjcn.nhri.org.tw/server/APJCN/17/2/199.pdf>
9. Kost- og Ernæringsforbundet, Arla. Underernæring: Det skjulte samfundsproblem. 2014;
10. Food and Agriculture Organization of the United Nations (FAO). Milk and dairy products in human nutrition [Internet]. Muehlhoff E, Bennett A, McMahon D, editors. Rome; 2013. 404 p. Available from: <http://www.fao.org/docrep/018/i3396e/i3396e.pdf>
11. Devries MC, Phillips SM. Supplemental Protein in Support of Muscle Mass and Health: Advantage Whey. J Food Sci [Internet]. 2015 Mar 1;80(S1):A8–15. Available from: <http://doi.wiley.com/10.1111/1750-3841.12802>
12. Ocké M, Buurma-Rethans E, Boer de E, Wilson-van den Hooven C, Etemad-Ghameshlou Z, Drijvers J, et al. Diet of community-dwelling older adults. Dutch National Food Consumption Survey Older Adults 2010–2012 [Internet]. 2010. Available from: www.rivm.nl/dnfcs
13. Fødevarestyrelsen S. Anbefalinger for den danske institutionskost [Internet]. 2015. Available from: <http://altomkost.dk/publikationer/publikation/pub/hent-fil/publication/anbefalinger-for-den-danske-institutionskost/>
14. Fødevarestyrelsen. Miljø- og Fødevareministeriet. Råd om mad når du er over 65 år - supplement til De officielle Kostråd [Internet]. 2017. Available from: http://altomkost.dk/fileadmin/user_upload/altomkost.dk/Publikationsdatabase/Pjecer_plakater_mv/Raad_om_mad_til_borger_65_.pdf