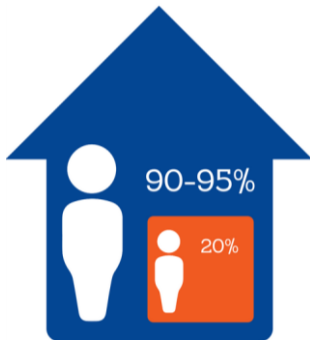


## The Horizon 2020 PROMISS project “PREvention Of Malnutrition In Senior Subjects in the EU”



In Europe, 90-95% of older adults live at home. Among them, about one out of 5 is malnourished or at risk of malnutrition

Thanks to a multi-disciplinary international consortium (23 partners from 11 countries), the PROMISS project is eager to:

- Provide insight in the **causal links between diet, physical activity, appetite and malnutrition** among older adults;
- Develop evidence-based dietary and physical activity strategies to prevent malnutrition and enhance active and healthy ageing;
- Deliver food concepts and products, as well as persuasive technology to support adherence to these strategies.



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## A sneak peek into PROMISS research

### **The lower the protein intake, the greater the risk of developing mobility limitations**

Using data from large aging studies conducted in five different countries (the Netherlands, Iceland, United Kingdom, Canada and United States of America) as well as national nutrition surveys from four different countries (the Netherlands, Finland, Italy and France), the research team lead by Carol Jagger (Newcastle University Institute) and Marjolein Visser (Vrije Universiteit Amsterdam) are analyzing habits and diets of older people: what older people eat and when during the day; how their diet relates to their appetite; their risk of malnutrition; and how diet, appetite and malnutrition affects their physical and mental function when ageing. In the first months of the project, we have determined the percentage of older men and women who have a low protein intake, report a poor appetite, and/or are malnourished.

In depth analyses have been performed in several studies to identify the main determinants of low protein intake and the distribution of protein intake over the day (during meals and with snacks). The association between diet quality, including protein intake, and the long-term development of protein-energy malnutrition (e.g. losing weight involuntarily) has also been investigated, as well as the development of mobility limitations (e.g. reporting difficulty climbing 10 steps without resting).



**Our first results suggest that older people with low protein intake are at greater risk of developing mobility limitations.** In addition researchers are examining whether having a poor appetite affects the consumption of specific food groups, and whether a poor appetite increases the risk of poor physical functioning. This PROMISS work will contribute key information on the diet and appetite of older persons and the extent to which these affect subsequent malnutrition and functional decline. This knowledge will help us to develop the best diets for older people to enable them to be active and healthy for as long as possible.

### **Vary your activities and perform them regularly in order to age well!**

Strong evidence from earlier studies showed that being physically active and less sedentary contribute to better health and functions (i.e. how well you can execute activities in daily life). The research team led by Paolo Caserotti (University of Southern Denmark) aims at understanding older people's daily physical activity, sedentary behavior and nap/sleep patterns by analyzing data from large aging studies conducted in 5 different countries (the Netherlands, Iceland, United Kingdom, Denmark and United States of America). The uniqueness of this study is that all five studies have collected data by



accelerometers, an objective measure of daily physical activity pattern (as opposed to subjective measure of physical activity, e.g. by questionnaires).

The study provides evidence on how physical activity patterns differ between different weekdays and how they are related to different demographic characteristics (e.g. gender, education level, occupation, hand grip strength, performance in daily tasks).

The researchers will then collect data from 50 well-nourished and 50 malnourished older people under both lab and free-living conditions to validate outcome by accelerometers at different anatomical positions: each participant will be provided with 3 accelerometers placed on wrist, hip, and thigh and use standard physiological measures (e.g. oxygen uptake and energy expenditure) during a set of functional tasks (e.g. walking, dressing, doing household chores).

The first results from the Danish cohort suggest that **older people with a combination of low activity count and low variability of activity throughout the week performed worst in functional tasks** (walking speed, chair stand, balance test) while those with high activity count and high variability of activity throughout the week performed best in the same tasks.

### **Towards new food products and concepts**

Food industries and experienced innovation labs of applied science universities are cooperating to develop new food products and food concepts which fit within the dietary and physical activity strategies developed in the PROMISS Project.

In a first stage a selection of existing food products was made to test in a set of experiments. The selected products are ready-to-eat meals, breakfast cereals, snacks (bars and bites) and a ready-to drink beverage provided by Frigilunch, Kellogg and Laboratoires Grand Fontaine. All products have high protein content and will be used for the first experiment in the short term trials.

Based on the input of the PROMISS research, companies will think about new food products and concepts. Currently two companies have already started with respectively the development of protein-rich soups and increasing the protein content in warm meals. Meanwhile, two food technology graduation students from the HAS University of Applied Sciences, started working on the development of **five new protein-rich soups** with more than 20 EN% protein, based on the current scientific knowledge.



In future more of these products and concepts will be developed and tested in both short and long term trials. At the end a roadmap will be developed which will be practical guidelines for the food industry translated from the scientific research obtained in PROMISS.



## What do older people think?

### Some opinions of experts, carers and seniors

It is known that malnutrition is linked to multiple factors<sup>1</sup>, from **physical** related ones (e.g. (chronic) illness, lack of mobility, change of taste, the uptake of some medicines, the loss of smell, bad teeth or not-fitting dentures, swallowing difficulty...) to **social and personal** ones (such as loneliness, the loss of partner or dear ones, the impossibility of choosing or purchasing food, especially the most expensive healthy and protein-rich, ...). **Misinformation** about food and about gaining and losing weight is part of the problem. And **economic difficulties** cannot be neglected either: Rian van Schaik, President of the Flemish Dietetic Association (VBVD) reported *"I saw people who used 1 meal in 2 days, so 2 x ½ a meal as this was a cheaper option"*<sup>2</sup>.



The causes of malnutrition are clear, but complex: are people aware of the challenge? While waiting for the results of a far more comprehensive survey led in PROMISS, whose results will be available at the end of the year, AGE Platform Europe consulted its members to gather some personal opinions on nutrition in old age.

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- The majority of the sample reported eating because food is presented as "ready-to-eat", both when eating at home and when in the day-care facility. Eating is not triggered by appetite, hunger or the need to get fed, but by the fact that food is physically available.
- Half of the seniors interviewed are open to taste new food and to varying the type of meals: with respect to the choice of what to eat. The caring personnel of Solimai reports that *"the fact that guests are eating all together, it often happens that some of them do not follow their personal tastes, but choose their meal on the basis of what they see or think there is in their neighbour's dish"*.

<sup>1</sup>

Determinants of protein-energy malnutrition in community-dwelling older adults: a systematic review of observational studies. Van der Pols-Vijlbrief R, Wijnhoven HA, Schaap LA, Terwee CB, Visser M., Ageing Res Rev. 2014 Nov; 18:112-31. doi: 10.1016/j.arr.2014.09.001. Epub 2014 Sep 22. Review. PMID: 25257179

<sup>2</sup> More opinions : Perspectives on the causes of undernutrition of community-dwelling older adults: A qualitative study, JNHA jan 2017, Van der pols-Vijlbrief et al.



- Carers stated that seniors' relationship with food is very much influenced by the fact that the majority of them go to discount markets for their groceries, and by the type of illness they suffer from. For example, diabetes pushes people to eat more than needed, and even older people with diabetes report they should be more careful with the quantity of food they get. Dementia prevents them from tasting food properly: sweet and salty tastes are detected with difficulty, and the difference between meat and fish is often not recognized. Moreover even the temperature of the meal and water (the difference between warm and cold) is not easily detected.
- With respect to their knowledge on protein and protein-intake, the interviewed seniors are divided on the statement "*health experts recommend people of their age to consume less protein*", with half considering it to be true and half false. However they all agree that proteins bring energy to the body and are necessary for repairing bones and muscles.
- Seniors provided mixed replies on very specific questions, such as whether "whole milk (100ml) has more protein than cheese (100g)" and "cooked lean beef has more protein than the same amount of cooked tomato", suggesting their difficulties in interpreting the protein content of foods.
- Interestingly, when asked about "who do you consult for questions or pieces of advice on your nutrition?" 8 people out of 10 replied "no one", while only one person looks to the doctor and one person asks a family member.



When living at home alone, the risk of malnutrition might increase: Pres. Van Schaik adds that "*if you lose your partner, you have to eat alone or you do not like to cook any more, malnutrition is around the corner. People who get company, who have help to cook and make them to eat better, are better-off, especially when they eat together*".

And when hospitalised, and then returning home, there is a pressing need to follow-up the patient but also from the nutritional perspective, which is not always the case. Sometimes dietary expense and advice for such follow-up are at the patient's charge. Pres. Van Schaik underlines "*the transfer of information about nutritional status and dietary advice from the dietitian in the hospital to first-line care should be continued at home since a lot of people need to further recover at home, and this is where the greater risk of malnutrition lies. We need to treat this by teamwork: of dietitian, first-line care workers, the patient and family or friends and the family physician*".

Taking all these inputs into account, greater awareness on the topic of malnutrition among seniors, families, carers and physicians must be raised, advice and training must be provided, as well as the care-continuum must be better considered, in order to effectively tackle malnutrition in old age..



## What happens beyond research?

### The ESPEN congress on nutrition of older adults

This year, the annual congress of ESPEN (the European Organisation for Clinical Nutrition and Metabolism), gathering around 3000 visitors, mainly doctors, dietitians and nurses, takes place in The Hague, Netherlands (9-12 September 2017). Nutrition of older adults represents one of the main tracks of the congress, with both scientific and educational sessions. A combined symposium on malnutrition on older aged will be held by the PROMISS/MaNuEL project on Saturday morning (9 September) to highlight the first results of studies performed. Alongside, there will be many interesting lectures on nutrition for older adults: more information at [www.ESPEN.org](http://www.ESPEN.org)

### EFAD's "Working together across health professions to combat malnutrition"

EFAD (the European Federation of the Associations of Dietitians) works for reducing inequalities and improving nutritional health in Europe. It gathers 34 National Dietetic Associations and 38 Higher Education Institutes in 29 countries and its members are 34.000 dietitians and 9000 students, with around 200 volunteers from across Europe also working for EFAD as dietitians, supporting EFAD to advocate for the profession.

This year EFAD's conference focuses on 'The Future is Now', looking into new areas for dietitians, and presenting evidenced-based dietetic practice. One session, "Working together across health professions to combat malnutrition", will be held on 29 September 2017, presenting the preliminary results of PROMISS, among which "*poor diet quality and long-term risk of incident protein-energy malnutrition in community-dwelling older adults*" (Linda Hengeveld, Vrije Universiteit, Amsterdam) and "*protein intake pattern over the day and the risk of low total protein intake in Dutch older adults*" (Jolanda de Boer, National Institute for Public Health and the Environment Bilthoven). [www.efad.org](http://www.efad.org)

### EUGMS Congress and PROMISS General Assembly

The 13th EUGMS International Congress (20-22 September 2017, Nice, France) targets health care professionals (geriatricians, internists, general practitioners, neurologists and physicians, therapists, nurses, gerontologists, researchers and scientists, pharmacists, nutritionists) and formal and informal carers to understand the social, medical and clinical approach to geriatric diseases. PROMISS will be presenting a symposium on the preliminary results of research, and its **General Assembly** will take place on 19-20 September in Nice. For information on the congress: [www.eugms.org/2017.html](http://www.eugms.org/2017.html)

