



# FIGHTING THE MALNUTRITION CASCADE

Healthcare and communications professionals will bring PROMISS-results to the older adults

‘The world is facing a situation without precedent: We will soon have more older people than children and more people at extreme old age than ever before. As both the proportion of older people and the length of life increase throughout the world, key questions arise. Will population ageing be accompanied by a longer period of good health, a sustained sense of well-being, and extended periods of social engagement and productivity, or will it be associated with more illness, disability, and dependency? How will ageing affect health care and social costs? Are these futures inevitable, or can we act to establish a physical and social infrastructure that might foster better health and well-being in older age?’

These are the questions posed by the World Health Organization (WHO) in its report on ‘Global Health and Ageing’, which outlines concerns on the coming global shift in what our societies will look like in only a few years. As a nutritionist and health epidemiologist, Professor Marjolein Visser from Vrije Universiteit Amsterdam is very familiar with the WHO’s findings. She views them as a challenge, as she has, for a long time, studied how lifestyles are related to health and, especially, how this correlation impacts the older generations. As well as this, since 2016, the Dutch food and health researcher has been coordinating a vast consortium of specialists in the EU’s PROMISS project, assembling a worldwide body of expertise in epidemiology, clinical trials, geriatrics, nutrition, physical activity, and microbiomics, as well as in behavioural, consumer, sensory and computer sciences.

Together, the experts aim at finding the appropriate answers and strategies to encourage active and healthy lifestyles in ageing societies, including the prevention of malnutrition (which is at the root of many deterioration disorders and diseases in later life). Marjolein Visser points out the precise problem, ‘We need to stop the malnutrition cascade.’ The topics the PROMISS project is clearly focused on dealing with are: a better understanding of malnutrition in the later stages of life; a protein-rich diet combined with physical exercise for maintaining health and physical functioning; and pathways, strategies and concepts that can convey the relevant knowledge to older citizens.

Initially, the scientists involved exploited existing data from scientifically well-established cohort studies on ageing and national nutritional surveys from Europe and ‘Third World’ countries. This will now be combined with new data from short- and long-term intervention studies on older adults at risk of malnutrition. Three specific main areas came under the team’s lens: the relations between vanishing appetite, gut microbiome and the mouth’s sensory faculties in later life; the links between protein and physical activity for the functioning of the body; and the role of communication technologies in sparking behavioural changes among older adults.

To put it in numbers: more than 90% of older people in Europe are living at home. A very poor appetite is reported by 10–15% of them, which, consequentially, causes malnutrition, and a ‘cascade’ of deteriorated body functions and illnesses; muscle loss, cognitive decline, weak immune systems and slowed wound healing. As a result, the healthy-ageing specialists first investigate the ‘body system changes to gain more insights and understand better what the physiological causes of appetite could be,’ the coordinator explains.

## **Optimal protein intake combined with physical activity at certain time points – extra positive effects on ageing bodies**

Another area being developed by PROMISS is centred on an adequate diet for older adults. Research suggests that most malnourished people have a protein deficiency; their muscles are exploited as an energy source by the body, causing severe decay. Here, PROMISS' focus is on the optimum amounts of proteins in the diets of older consumers. Are animal or plant proteins the better choice? What quantities are appropriate? How can the dietary advice given support sustainability? These are the questions the nutritionists are elaborating on in several intervention studies.

Combining an optimal protein intake with physical activity may lead to extra positive effects on ageing bodies. The scientists therefore will test the impact of eating more proteins at those time points during the day when older persons are physically active. Healthcare professionals working with older adults at home need to be made aware of these links. They are the ones best placed to pass on the dietary advice, to ensure healthy supplies of proteins are provided at the right time of the day and that they are combined with exercise.

### **The focus is on teaching people at home by healthcare professionals**

What may seem obvious, is often not the case. Marjolein Visser refers to national data showing consistent patterns of low protein intake in subgroups of older persons, 'even in the Netherlands' — with plenty of dairy and meat products on the shelves. With its focus on teaching people at home and by healthcare professionals on the relations between low appetite and low protein intake, the project aims at making a contribution in terms of preventative health measures. 'Through reaching people living at home we can make the most cost-effective prevention,' the research coordinator stresses.

The study, therefore, not only encompasses the development of tailor-made food products for older persons with low appetites, and their easy integration into regular diets, but also the right communication methods and tools. Specific messages for different cultural zones and their different dietary habits are elaborated on, as well as the use of modern communication technologies to spark lifestyle changes. For example, there are ideas to install electronic signs on fridges that are activated if they have not been opened for a day or more. This could be the right reminder for those people with a poor appetite or insufficient dietary intake. More educative tools could also come into action: a physical activity monitor that sends a reminder to eat a protein snack after exercise, for example. Though tool developments are only at the pilot stage, digital mobile communication technologies using bracelets, sensors or the connected internet of things could soon be at the service of ageing populations. The researchers' goal is to develop holistic strategies combining diet and physical activity with enough scientific evidence to support future recommendations from medical doctors, healthcare professionals, policymakers and industry.

With an efficient stakeholder involvement from the professional side, the PROMISS coordinator Marjolein Visser is confident that they 'have a strong voice for our case.' According to her, the broad multi-disciplinary consortium contributing expertise and opinions from many different angles is a valuable extra asset. PROMISS is also a member of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA), which can serve as an efficient dissemination tool for the study results and the diffusion of guidelines to many players in associations, industry and policy across Europe, and beyond — the project will present its results during the 21st International Congress of Nutrition, organised in Argentina by the International Union of Nutritional Sciences (IUNS), adding to growing networks and the global recognition of the PROMISS-ing results.