



Addressing demographic and climate change: prevent protein malnutrition

Two of the biggest challenges the EU faces are an ageing population and climate change. Through research on protein malnutrition, the **PROMISS** project sought to address both challenges by:

1. Tackling protein malnutrition in older persons to keep them active and healthy;
2. Identifying sustainable protein sources acceptable to older persons to reduce greenhouse gas emission, and fossil fuel and land use.

Protein malnutrition is a severe problem among older Europeans living at home. According to the European Food Safety Authority (EFSA) older persons need 0.83g protein/kg body weight/day. **PROMISS** research shows that 29% of older adults (more than one in four) do not meet the current EFSA recommendation, and this rises to 54% for the recommendation of 1.0 (as currently used in German-speaking countries) and 76% for the recommendation of 1.2 (as currently used in Nordic countries). Protein malnutrition may result in a weaker immune system increasing the risk of infections and muscle weakness, and subsequently increasing the risk of falls and hospitalisations.

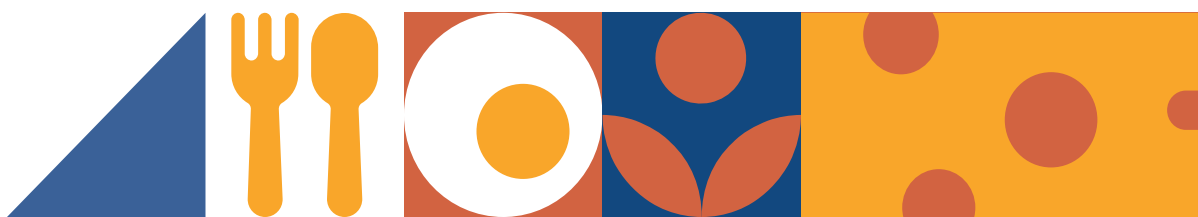
The importance of nutrition for healthy ageing has been acknowledged in the Green Paper on Ageing. Healthy and active ageing is about promoting healthy lifestyles throughout our lives including our dietary intake and our levels of physical and social activity. It also highlights that the new EU4Health programme can support Member State actions, for example in promoting healthy diets as well as regular physical activity.

Furthermore, the European Green Deal's "Farm to Fork Strategy" stipulates the necessity to strive towards sustainable food consumption and promoting affordable healthy food for all.

PROMISS provides strategies on how to optimize older persons' protein intake to support not only healthy and active aging but also a healthy planet.

For optimal protein intake of older persons, PROMISS recommends the following strategies:

- Eat at least 1.0g of protein per kg body weight per day to benefit physical function;
- Consume of at least 30g of protein in one meal per day and, if possible, in two meals per day;
- These strategies apply to all men and women aged 70 and older living at home, irrespective of physical activity level.



Farm2Fork Strategy: how nutrition contributes to a sustainable planet

Vegetable proteins are more sustainable than animal proteins, and both are associated with similar clinical outcomes in older persons.

PROMISS provides the following strategies for a more sustainable diet:

- Encourage the consumption of more plant-based protein such as legumes, cereals, nuts and seeds, although it is not necessary to go completely vegetarian or vegan;
- Encourage reducing the intake of beef, lamb, and processed meats and choose chicken and pork if meat is eaten;
- Encourage the selection of fish that requires less intensive means of capture and do not eat fish more than once a week.

Greenhouse gas emissions of different protein sources

Animal-based protein sources

Product	CO ₂ emissions (kg CO ₂ eq/kg)
Steak	57,9
Pork	14,3
Chicken (with skin)	13,4
Cheese Gouda 48+	12,9
Cod fish	7,5
Whole milk	2,0

Plant-based protein sources

Product	CO ₂ emissions (kg CO ₂ eq/kg)
Tofu	5,8
Vegetarian burger (average)	4,1
Peanut butter	2,9
Brown beans (glass/can)	1,9
Rye bread	1,3
Potatoes	0,8

Screening is crucial – the Protein Screener

The Protein Screener (www.proteinscreener.nl) developed in **PROMISS** rapidly screens for the risk for low protein intake. When high risk of low protein intake is indicated, a subsequent thorough nutritional assessment is always necessary to determine habitual protein intake, and before individualized advice on increasing protein intake can be given. The Protein Screener is available in English, Dutch and Finnish, and will become available in more languages.



PROMISS made use of large-scale databases to understand the relationships between food intake, food characteristics, physical activity, the oral and gut microbiota, and poor appetite, malnutrition and poor health among older adults. Preferences and attitudes of older persons with regard to food intake and physical activity were also identified. Based on the outcomes of this research, PROMISS has developed optimised, sustainable and evidence-based dietary and physical activity strategies, which were tested for effectiveness and cost-effectiveness in a long-term intervention study.

For more information on the **PROMISS** project visit www.promiss-vu.eu.



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