Danone Nutricia Campus

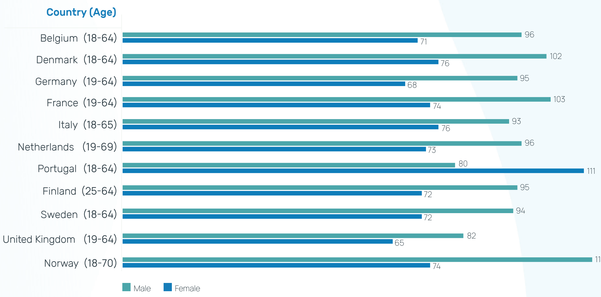
Protein Consumption

Plant Protein:
for health and planet

Protein intake

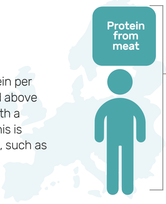
Protein intake across Europe varies from 12 to 20% of energy intake. Table 2 presents data on total protein intakes in grams per day in males and females in a variety of European countries.

Table 2[1]



On average, Europeans have a high protein intake.

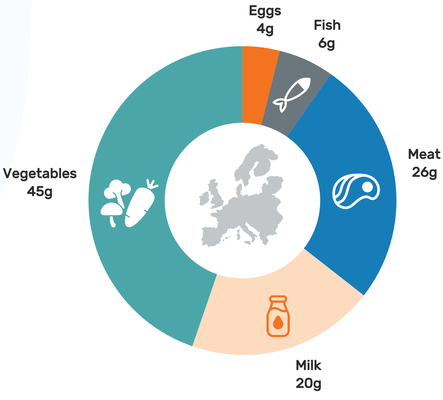
There is a global trend towards over-consumption of protein. With a global average intake of 68g of protein per person per day, consumption is estimated at one third above What we need the average adult daily requirement, with a growing share of this being animal-derived protein. This is particularly prevalent in the world's wealthiest regions, such as Europe, but expected to undergo the most growth in developing countries in years to come[2].



Sources of Dietary Protein

Dietary protein is available from a variety of both plant and animal sources. Globally, most protein is sourced from plant foods such as wheat, maize and rice (57%), however since the 1970s, protein in Europe has been predominantly derived from animal sources such as meat, dairy and fish (55-60%)[3].

Common sources of protein in Europe diet



Protein supply from plant and animal sources in Europe (g/capita/day)[3]

Protein intake patterns and muscle protein synthesis

Protein contributes to the maintenance of muscle mass, which plays an important role in supporting health and physical function with ageing. Muscle protein synthesis (MPS) refers to the process by which amino acids are incorporated into skeletal muscle proteins, supporting muscle repair and growth. Research suggests that consuming around 20g of protein after resistance exercise may help stimulate acute MPS. More recent evidence indicates that, in addition to total protein intake, the distribution of protein consumption across a 12-hour period may also influence the attainment and maintenance of muscle mass[4]. Studies have also reported that both omnivorous and vegan diets can support similar daily MPS rates at rest and following exercise in healthy young adults consuming a high-protein diet[5].

Protein intakes across dietary patterns

Protein intake tends to vary depending on the number of animal-based foods included in the diet. For example, meat eaters have been reported to consume around 90g of protein per day, while flexitarians consume approximately 67g per day and vegans around 64g per day[6]. These findings suggest that overall protein intake can remain adequate across dietary patterns, including those that limit or exclude animal foods.

Plant proteins are sometimes described as "incomplete" due to differences in their amino acid profiles. This reflects the fact that some plant foods contain lower amounts of certain essential amino acids when consumed in isolation, although foods such as soy, hemp, buckwheat and quinoa provide more balanced amino acid profiles. However, all plant foods contain all amino acids, and a varied plant-based diet can provide sufficient amino acids when overall energy intake and dietary variety are adequate.

In addition, the term "high quality" is often used to describe protein sources based on essential amino acid content and digestibility. While this can be useful in some contexts, it may not fully reflect how protein sources contribute within a mixed diet, or take account of broader health and environmental considerations. As a result, its relevance may be more limited in developed countries[7].

How to meet essential protein requirements

What people think:
only possible with meat

How it works:
eat diverse foods in a 24h period

1. European Commission 2021. Health Promotion Knowledge Gateway. Dietary Protein – overview of protein intake in European countries. Accessed 14.09.2024. Available from: https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway/dietary-protein-overview-countries-it_en
2. Rangarathan et al. (2016). Shifting Diets for a Sustainable Food Future. Creating a Sustainable Food Future. Instalment Eleven. World Resources Institute. Accessed 14.06.2024. Available from: https://www.wri.org/research/shifting-diets-sustainable-food-future.
3. European Parliamentary Research Service (EPRS). 2024. Panel for the Future of Science and Technology. Alternative protein sources for food and feed. Scientific Foresight Unit (STOA). Accessed 14.06.2024. Available from: https://www.europarl.europa.eu/RegData/etudes/STUD/2024/757806/EPRS_STU(2024)757806_EN.pdf
4. Areta JL, Burke LM, Ross ML, et al. Timing and distribution of protein ingestion during prolonged recovery from resistance exercise alters myofibrillar protein synthesis. J Physiol 2013;591(9):2319-2331. doi:10.1113/jphysiol.2012.244897
5. Monteyne AJ, Coelho MOC, Murton AJ, et al. Vegan and Omnivorous High Protein Diets Support Comparable Daily Myofibrillar Protein Synthesis Rates and Skeletal Muscle Hypertrophy in Young Adults. J Nutr. 2023;153(5):1480-1495. doi:10.1016/j.tjnut.2023.02.023
6. Mariotti, F., & Gardner, C. D. (2019). Dietary Protein and Amino Acids in Vegetarian Diets-A Review. Nutrients, 11(11), 2661. https://doi.org/10.3390/nu11112661
7. Katz DL, Doughty KN, Geagan K, Jenkins DA, Gardner CD. Perspective: The Public Health Case for Modernizing the Definition of Protein Quality. Adv Nutr. 2019;10(5):755-764. doi:10.1093/advances/nmz023