

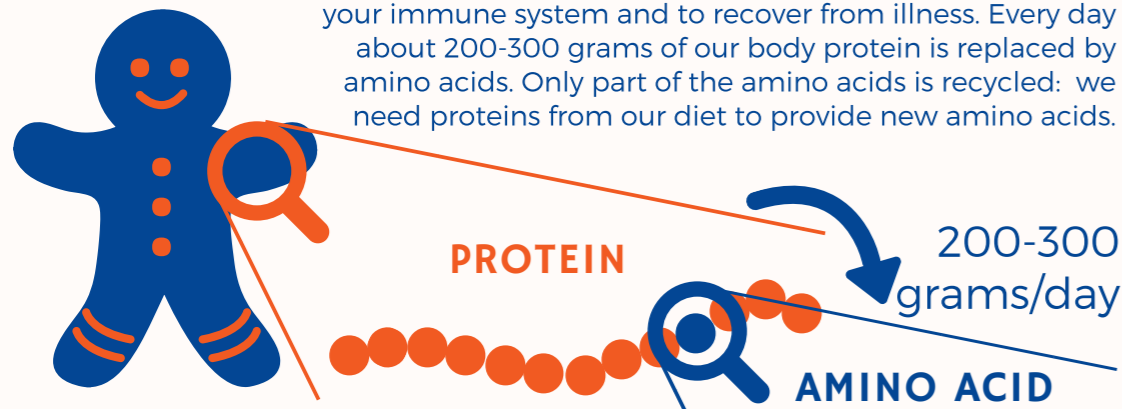
WHAT IS PROTEIN?

The main components of food products are proteins, fats, and carbohydrates. These components provide the body with energy. About 15% of all the energy (calories) we obtain from foods comes from proteins.



WHY IS PROTEIN IMPORTANT FOR ME?

All body tissues are made up of cells and all cells, for example muscles, organs, the nervous system, bones and blood, contain protein. The digestion breaks down protein from foods into amino acids (the building blocks of protein), which enter the blood stream and are used in your muscles, bones, cartilage and skin, as well as to transport oxygen and other substances in the blood, to make enzymes and hormones, for an optimal functioning of your immune system and to recover from illness. Every day about 200-300 grams of our body protein is replaced by amino acids. Only part of the amino acids is recycled: we need proteins from our diet to provide new amino acids.



WHAT FOODS CONTAIN PROTEIN?

Almost all food products contain some protein. Protein can be mostly found in animal-based food products such as meat, poultry, fish, eggs, dairy products and cheese. However, protein is also present in vegetable-based food products, such as legumes and pulses, bread, cereals, pasta and rice, nuts and mushrooms. Meat, dairy and grain products such as bread are generally the most important food sources of protein. These are some examples of food items with amounts that contain about 10 grams of protein:

Vegetable-based food products

- 2 handful of nuts
- 16 table spoons of oatmeal
- 300 g cooked rice (9 serving spoons)
- 200 g cooked pasta (6 serving spoons)
- 150 g of cooked pulses
- 3 slice of bread

- Fish**
- 50 g smoked salmon
- 4 canned sardines.

- Cheese**
- 10 table spoons cottage cheese
- 2 slices mozzarella
- 40 g of Gouda cheese (3 slices)



Eggs
2 eggs

Dairy
300 ml of milk (2 glasses)
300 g yoghurt

Tofu
100 g cooked tofu

Meat
33 g cooked beef
33 g cooked liver

- 33 g cooked chicken breast
- 4 slices of ham (prepared)
- 2 slice of roast beef (prepared)
- 4 slices of chicken breast (prepared)



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HOW TO HELP PREVENT MALNUTRITION

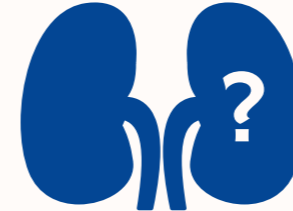
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WHAT HAPPENS IF YOU EAT TOO LITTLE PROTEIN? IS IT HARMFUL TO EAT TOO MUCH PROTEIN?



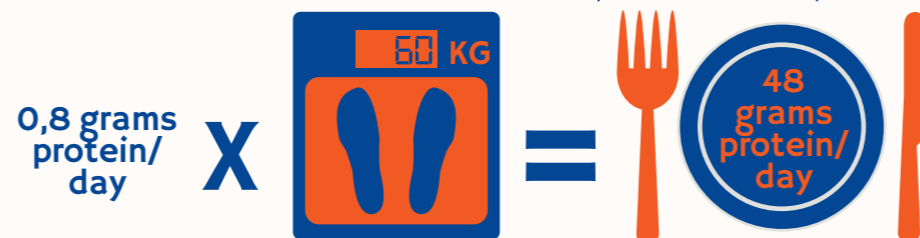
A low protein intake will have negative consequences for your health and functioning. For example, your muscle mass will decline, leading to a loss of muscle strength.



In general, eating more protein than needed is not harmful. Only older persons with severe kidney diseases should avoid a high protein intake.

HOW MUCH PROTEIN DO I NEED?

Older persons need 0.8 grams of protein per kilogram body weight per day (source: the European Food Safety Authority). This means that a person with a body weight of 60 kilogram would need about 48 grams of protein per day, every day. Recently, some European geriatricians and nutritional experts bring evidence that healthy older persons would need 1.0-1.2 grams of protein per kilogram of body weight. Older persons with acute and chronic diseases should have an intake of 1.2-1.5 gram of protein per kilogram body weight. Currently many scientific projects are being conducted to test whether a protein intake higher than 0.8 would be more optimal for older persons.



ARE ALL PROTEINS EQUAL?

The proteins present in food differ with regard to their quality. The quality mainly depends on the amino acids present in the protein. In total, there are 22 different amino acids, and 9 of them are essential: they can only be obtained through food. 6 of them are semi-essential, generally present in food, but under specific circumstances (diseases, disorders) a sufficient intake through food is necessary. And 7 are non-essential amino acids, they are present in food but the body itself can also produce these amino acids.

IS INTAKE WITH FOOD NECESSARY?



Essential amino acids

- Leucine
- Isoleucine
- Tryptophan
- Methionine
- Lysine
- Histidine
- Valine
- Phenylalanine
- Threonine



Semi-essential amino acids

- Glycine
- Asparagine
- Arginine
- Glutamine
- Serine
- Proline



Non-essential amino acids

- Glutamic acid
- Tyrosine
- Cysteine
- Alanine
- Aspartic acid
- Hydroxyproline
- Cystine

Almost all proteins contain essential amino acids. However, plant-based proteins generally contain less essential amino acids compared to animal-based proteins. For example, pulses don't contain all essential amino acids, but when combined with grains all essential amino acids will be covered.



HOW DO I KNOW THAT I EAT ENOUGH PROTEIN?

A thorough assessment of your dietary intake by a dietician is needed to determine whether you eat enough protein.

WHERE CAN I FIND MORE INFORMATION?

You can contact a dietician to discuss your diet and obtain personalized advice, and check the most recent scientific findings in the PROMISS website: <http://www.promiss-vu.eu/>

