

Protein is a building block for muscles and bones. This macronutrient plays a role in the growth and preservation of muscle mass and maintenance of bone mass.



A low protein intake is associated with a decrease in muscle mass.<sup>1</sup> Therefore, it is important to get enough protein every day, by eating sufficient and varied food (see Table 1).

**Dairy products, eggs, fish, meats, tofu and legumes are good sources of protein.**

**Source:**<sup>1</sup> International Osteoporosis Foundation (2013). Bone development in young people. Retrieved from via [www.iofbonehealth.org](http://www.iofbonehealth.org) in November 2019. |<sup>2</sup> Department of Health, Dietary Reference Values for Food Energy and Nutrients for the United Kingdom, HMSO, 1991. |<sup>3</sup> American College of Sports Medicine, Academy of Nutrition and Dietetics and Dietitians of Canada. Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance. Journal of the Academy of Nutrition and Dietetics, 2016; 116: 501-528.

Table 1. Daily recommendations for protein<sup>2,3</sup>

Age	Amount gram per day*		Amount for athletes gram per day*	
0 - 3 months	12.5 ♂	12.5 ♀		
4 - 6 months	12.7 ♂	12.7 ♀		
7 - 9 months	13.7 ♂	13.7 ♀		
10 - 12 months	14.9 ♂	14.9 ♀		
1 - 3 years	14.5 ♂	14.5 ♀		
4 - 6 years	19.7 ♂	19.7 ♀		
7 - 10 years	28.3 ♂	28.3 ♀	84 - 140 ♂	74 - 123 ♀
11 - 14 years	42.1 ♂	41.2 ♀	92 - 153 ♂	78 - 130 ♀
15 - 18 years	55.2 ♂	45.4 ♀	89 - 148 ♂	75 - 125 ♀
19 - 49 years	55.5 ♂	45.0 ♀	90 - 150 ♂	78 - 130 ♀
50+ years	53.3 ♂	46.5 ♀	90 - 150 ♂	77 - 128 ♀
Pregnancy		+6 ♀		
Lactation				
0 - 6 months post-partum		+11 ♀		
> 6 months post-partum		+8 ♀		

\*Based on average bodyweight

### Essential amino acids

Protein consists of amino acids of which 9 are essential. The body has a daily need for these essential amino acids in order to function well, because the body cannot synthesize them itself. Therefore, it is important to receive these amino acids through diet. Foods with high-quality proteins, like milk, dairy products, meat, fish, eggs, cheese and tofu, provide more essential amino acids.

### Healthy Ageing

From a biological point of view, our body is fully developed between 25 - 30 years of age. After this age, both bone mass, muscle mass and muscle strength slowly decrease. As we grow older, it is important to pay attention to a healthy diet and sufficient physical activity, in order to slow down the degradation of muscles and bones. Although people over 50 years of age need fewer calories per day than younger people, it is important to maintain the intake of protein in the diet. It is recommended to divide the total protein requirement over several eating moments per day.

### Protein intake for athletes

The protein requirement of athletes is higher than for non-athletes, namely 1.2 - 2.0 gram per kilogram bodyweight per day. This is because athletes generally have more muscle mass, or they want to build more muscle mass. The exact recommendation depends on training status, training intensity, and availability of carbohydrates and energy in the body to support training, metabolic adaptations and performance goals.

# Protein tool

Assess your own daily protein intake



Product	Portion size	Protein (g)
<b>Fish, legumes, meats, nuts, dairy and egg</b>		
Milk (semi-skimmed)	1 glass, 150 ml	5.2
Buttermilk	1 glass, 150 ml	5.1
Yoghurt (semi-skimmed)	1 glass, 150 ml	6.8
Quark (semi-skimmed)	1 portion, 150 ml	17
Cheese spread (reduced fat)	For 1 slice of bread, 15 g	2.3
Cheddar cheese (full fat)	For 1 slice of bread, 20 g	5.1
Cheddar cheese, 30% fat	For 1 slice of bread, 20 g	5.6
Gouda cheese	For 1 slice of bread, 20 g	5.1
Cottage cheese	For 1 slice of bread, 20 g	1.9
Brie	For 1 slice of bread, 30 g	5
Egg	1 piece, 50 g	7.1
Tofu	1 slice, 75 g	6.1
Hummus, salt-free	For 1 slice of bread, 20 g	1.5

Lentils	1 serving spoon, 60 g	4.6
Salmon	1 piece, 105 g	21.4
Chicken breast	1 piece, 100 g	32
Vegetarian sausage	1 piece, 90 g	13.4
Unsalted nuts	1 small handful, 25 g	6
Peanut butter	For 1 slice of bread, 20 g	4.6

## Vegetables and fruit

Kale	1 serving spoon, 85 g	2.3
Broccoli	1 serving spoon, 50 g	1.7
Tomato	1 piece, 70 g	0.4
Avocado	1/2, 90 g	1.4
Raw vegetables	1 bowl, 70 g	0.6
Blueberries	1 bowl, 100 g	0.9
Banana	1, 130 g	1.6
Apple	1, 135 g	0.8

## Spreading and cooking fats

Margarine	For 1 slice of bread, 6 g	0
Olive oil	1 table spoon, 10 g	0
Butter	For 1 slice of bread, 6 g	0

## Drinks

Water/tea	1 glass, 150 ml	0
Coffee (without sugar and milk)	1 cup, 125 ml	0.2

## Grain products and potatoes

Bread (wholemeal)	1 slice, 35 g	3.3
Oatmeal	1 table spoon, 15 g	1.6
Muesli	1 table spoon, 15 g	1.5
Potatoes, mashed	1 serving spoon, 55 g	1.1
Pasta	1 serving spoon, 45 g	3
Brown rice	1 serving spoon, 60 g	1.9

## Other foods

Candy bar	1 piece, 20 g	1
Cheesecake	1 slice, 115 g	6.1
Gingerbread	1 slice, 25 g	0.9
Currant bun	1 bun, 60 g	4.8
Chocolate, dark	1 small bar, 25 g	1.3
Crisps, regular	1 bag, 25 g	1.6
Jam	For 1 slice of bread, 15 g	0.1
Orange juice	1 glass, 200 ml	1.8
Drinking chocolate (semi-skimmed)	1 glass, 150 ml	5.6

Custard (semi-skimmed)	1 pot, 150 ml	6
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## Sports-specific nutrition and supplements

Energy bar with muesli	1 piece, 25 g	1.2
Sports drink, high energy	1 bottle, 330 ml	0
Sports gel	1 sachet, 90 g	0.5
Protein drink	1 bottle, 330 ml	20

## Products enriched with protein (fill in yourself)

Product \_\_\_\_\_

## Protein supplements (fill in yourself)

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## Daily intake

**Total protein intake** \_\_\_\_\_ **g**

This information is developed by the FrieslandCampina Institute.

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### Source:

- Composition of Foods Integrated Dataset, 2019
- Data from the manufacturer

The composition can vary per brand. This table of food composition data gives you a general idea of your intake. For personal advice please contact a registered dietician/nutritionist.