



FrieslandCampina nir

# Institute

for dairy nutrition and health

## Protein

Protein is a component of every cell in the human body and is necessary for proper growth and development, especially during childhood, adolescence and pregnancy. For children it is therefore important to meet their daily protein requirements by eating a variety of foods.



Protein is found in a variety of foods such as milk and dairy products, meat, fish, eggs, bread and other grain-based products, legumes and nuts. The quality of animal proteins is usually higher than plant proteins.<sup>1</sup>

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

Age (years)	Protein (g/kg bodyweight/day)
0.5	1.31
1	1.14
1.5	1.03
2	0.97
3	0.90
4-6	0.87
7-10	0.92
11-14	0.90 (boy), 0.89 (girl)
15-18	0.87 (boy), 0.84 (girl)

## Essential amino acids

Protein is made up of hundreds or thousands of smaller units, called amino acids, which are linked to one another in long chains.<sup>1</sup> There are 20 different amino acids that can be combined to make every type of protein in the body.<sup>1</sup> Of these, 9 amino acids are considered essential.<sup>1</sup> Essential amino acids are needed for the body to function well but they cannot be made by the body. Therefore, they need to be obtained from the diet.<sup>1</sup> Foods with high-quality proteins, like milk and dairy products, meat, fish, eggs, cheese and soybeans, provide all the essential amino acids.<sup>1</sup>

## Growing up

Growth occurs rapidly during infancy, childhood, and adolescence. Calories and protein fuel this rapid growth. When children consume inadequate protein and energy, their weight may become too low or children may not be growing properly.<sup>3</sup> For these children, additional protein intake may be beneficial.<sup>3</sup> Choosing high-quality protein food sources ensures children obtain all essential amino acids, which may be beneficial for children who are too short for their age.<sup>4</sup>

## Tips to increase protein intake

When protein intake is low, remember to include protein in every meal. For example, have a glass of milk with breakfast, include egg on a sandwich and add protein rich foods like fish, chicken, tofu, eggs and dairy to your meals or take them as a snack.

**Source** <sup>1</sup>Whitney, E., & Rolfe, S.R. (2011). Understanding Nutrition (12th edition). Cengage Learning | <sup>2</sup>WHO/FAO/UNU (2007) Protein and Amino Acid Requirements in Human Nutrition: Report of a Joint WHO/FAO/UNU Expert Consultation. WHO Technical Report Series no. 935. Geneva: WHO. | <sup>3</sup>De Vries-Ten Have, J., Owolabi, A., Steijns, J., Kudla, U., & Melse-Boonstra, A. (2020). Protein intake adequacy among Nigerian infants, children, adolescents and women and protein quality of commonly consumed foods. *Nutrition Research Reviews*, 1-19. | <sup>4</sup>Ghosh, S., Suri, D., & Uauy, R. (2012). Assessment of protein adequacy in developing countries: quality matters. *British Journal of Nutrition*, 108(S2), S77-S87.

# Protein tool

Asses your own daily protein intake



Product	Serving Size	Protein <sup>5</sup>
<b>Bread and Cereals Products</b>		
Bread, white	2 slices, 56 g	6
Bread, whole meal	2 slices, 56 g	7
Bread, wholegrain	2 slices, 64 g	8
Bread with raisin	2 slices, 66 g	5
Breakfast cereal, plain/flavoured, wholegrain/not wholegrain	1 rice bowl, 30 g	2
Breakfast cereal, wholegrain, with dried fruits/nuts	1 rice bowl, 30 g	3
Oat, rolled, raw	0.5 cup, 48 g	5
Oat, instant, raw	0.5 cup, 22g	3
3-in-1 cereal	1 sachet, 30 g	2
<b>Rice/Porridge and Noodles/Pasta</b>		
Rice, brown, cooked	1 rice bowl, 230 g	7
Rice, white, cooked	1 rice bowl, 230 g	6
Porridge, plain, cooked	1 soup bowl, 546 g	7
Porridge, brown rice, cooked	1 soup bowl, 768 g	9
Bee hoon, cooked	1 rice bowl, 176 g	2

Bee hoon, brown rice, cooked	1 rice bowl, 176 g	4
Yellow noodle, cooked	1 rice bowl, 115 g	6
Kway Teow, cooked	1 rice bowl, 136 g	3
Instant noodle, cooked	1 soup bowl, 496 g	9
Pasta, white, boiled	1 rice bowl, 160 g	7
Pasta, wholemeal, boiled	1 rice bowl, 180 g	11

<b>Meat, Poultry, Seafood &amp; Egg</b>		
Chicken, without skin, cooked	90 g	16
Pork, lean, cooked	90 g	19
Beef, lean, cooked	90 g	19
Lamb, cooked	90 g	18
Fish, cooked	90 g	17
Prawn, cooked	1 piece, 10 g	1
Egg, boiled	1 whole, 55 g	6

<b>Milk and Dairy Products</b>		
Milk, full fat	1 cup, 200 mls	7
Milk, low fat	1 cup, 200 mls	6
Milk, skimmed	1 cup, 200 mls	7
Yoghurt, natural, full fat/low fat	1 cup, 150 g	7
Yoghurt, flavoured, low fat	1 cup, 125 g	5
Yoghurt drink, flavoured, low fat	1 cup, 200 g	4
Cheese, cheddar	1 slice, 21 g	4
Cheese, cheddar, reduced fat	1 slice, 16 g	5

<b>Soy, Legumes and Nuts</b>		
Tofu, silken	1 piece, 152 g	12
Egg tofu	1 tube, 150 g	11
Soya bean milk, commercially packed	1 cup, 250 mls	10
Soya bean milk, hawkler centre	1 cup, 250 mls	7
Lentils, dried, uncooked	0.5 cup, 95 g	23
Nuts (almonds, cashews, walnuts, peanuts)	30 g	4 - 7

<b>Vegetables</b>		
Leafy vegetables, cooked (spinach, kang kong, cai xin)	0.5 cup	1 - 3
Non-leafy vegetables, cooked (broccoli, cauliflower, carrot)	0.5 cup	1 - 2
Potato, cooked	1 whole, 135 g	2
Sweet potato, cooked	1 whole, 65 g	1

<b>Fruits</b>		
Whole fruits (apple, pear, orange)	1 medium	1

Slice fruits (papaya, watermelon, pineapple, honeydew)	1 slice	1
Mango	0.5 whole, 116 g	1
Banana	1 medium, 118 g	1

<b>Common Local Dishes</b>		
Pau, with meat filling	1 whole, 91 g	8
Pau, with sweet filling	1 whole, 67 g	4
Chee cheong fun, plain/meat filling	1 piece	2 - 3
Chicken rice, with roasted/steamed chicken	1 plate	26
Mee soto	1 bowl	19
Roti prata, plain	1 piece	5
Thosai, plain	1 piece	2
Chapati	1 piece	3

<b>Miscellaneous</b>		
Jam, fruit	1 tablespoon	<1
Peanut butter spread	1 tablespoon	7
Malted drink powder	1 tablespoon	1
Biscuits, plain	1 piece	1
Biscuits, cream filling	1 piece	1
Chocolate	1 cube/square	<1
Ice cream	1 scoop	2

<b>Daily intake</b>		
<b>Total protein intake:</b>	<input type="text"/>	

This information is developed by FrieslandCampina Institute Version January 2021, Asia

**Source**  
<sup>5</sup>Health Promotion Board. Energy & Nutrition Composition of Food. Retrieved December 15, 2020, from <https://focos.hpb.gov.sg/eservices/ENCF/>

The composition of foods 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 dietitian/nutritionist.