



FrieslandCampina 

# 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 ♀ 0.89
15-18	♂ 0.87 ♀ 0.84

## 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 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

To ensure adequate protein intake, 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 groundnut, fish, crayfish, chicken, eggs and dairy to your meals or take them as a snack.

# Protein tool

Protein content per 100g edible portion of some Nigerian foods.



Food groups	Protein (g) per 100g edible portion <sup>5</sup>
<b>Cereals and their products</b>	
Maize yellow	7.6
Maize, white, fermented gruel (Ogi)	1.04
Maize, yellow fermented gruel	0.77
Maize, white, fermented gruel cooked, molded	1.84
Millet, whole grain, raw	10.9
Rice, white, boiled	2.6
Rice, brown, boiled	3.1
Sorghum, fermented gruel, dried	11.7
Bread, whole wheat, white	8.4
<b>Starchy roots, tubers and their products</b>	
Cocoyam, tuber, boiled	2.5
Yam, tuber, boiled	1.9
Yam flour	3.4
Yam, peeled, boiled, pounded	1.03
Cassava, white. Grated, fermented, dewatered, fried	1.6
Plantain, ripe, peeled, roasted	3.3

<b>Legumes and their products</b>	
Beans, white, boiled	8.2
Soybean, dried, raw	32
Soybean, boiled	13.2
Moin-moin	6.5
Lentils, boiled	9.3

<b>Vegetables and their products</b>	
Cabbage, raw	1.6
Amaranth, leaves, raw	3.8
Carrot raw	1.0
Egg plant raw	1.1
Spinach boiled	2.9

<b>Fruits and their products</b>	
Banana	1.0
African Star Apple	4.0
Orange	0.7
Mango	0.6
Water melon	0.5
Papaya	0.5

<b>Nuts, seeds and their products</b>	
Cashew nut raw, raw	17.7
Coconut milk	2.1
Coconut Fresh raw	1.6
Groundnut, raw dried	23.5
Soya bean milk	3.15

<b>Meat, poultry, sea foods and their products</b>	
Beef, meat, lean, boiled	36.2
Chicken, dark meat, flesh, boiled	26.8
Goat meat, boiled	26.1
Egg, chicken boiled	12.6
Crayfish, Dried	67.4
Sardine, steamed	22.8
Tilapia, steamed	22.1

<b>Milk and their products</b>	
Milk, cow, powder, whole	25.9
Milk, cow, powder, skimmed	36.2
Milk, cow, whole, 3.5% fat (includes pasteurised, sterilized and UHT)	3.4
Yoghurt, whole milk plain	3.8

<b>Other (fill in yourself)</b>	

<b>Total protein intake</b>	g
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This information is developed by FrieslandCampina Institute in collaboration with the Nutrition Society of Nigeria. Version: February 2022, Nigeria.

## Source:

<sup>5</sup>Stadlmayr, B., Charrondiere, R., Enujiugha, V. N., Bayili, R. G., Fagbohoun, E. G., Samb, B., Addy, P., Barikmo, I., Ouattara, F., Oshaug, A., Akinyele, I., Annor, G. A., Bomfeh, K., Ene-Obong, H., Smith, I. F., Thiam, I., & Burlingame, B. (2012). West African Food Composition Table.

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.

