

# Protein article

[Science](#)



**ASSIGN  
BUSTER**

**Protein Requirements in Infants and Adults** A healthy diet consists of carbohydrate, proteins, vitamins and micronutrients. These elements play a vital role in the body. In the body, dietary proteins are broken down to simple amino acids which form the building block for the cells. Proteins are also incorporated in hormones, hemoglobin, creatinine and other cellular functions. Amino acids are involved in the formation of DNA and RNA which forms the backbone of the human genome (genes). Dietary source of proteins includes eggs, milk, meat, soya and beans (Millward, 2007). This paper will focus on discussing the difference in the protein requirements of an infant as compared to an adult.

In humans, protein requirements depend on age, sex and weight. According to World Health Organisation rapid growth occurs during the period of infancy which ranges from 0-1 years. Growth is made up of increase in height, weight and mass. It also involves the development and maturation of various body systems. The rapid increase in growth is marked by an increase in the number and sizes of the body cells. This solely depends on the amount of protein provided in the diet. According to WHO, infants require about 0.8 g/kg body weight of dietary protein while as adults require about 0.5g/kg for growth (Scrimshaw, 2002). The American Academy of Pediatrics (AAP) advocates that a full term should be feed exclusively on breast milk for the first six months. Proteins constitute 6% of breast milk and are essential for the growing infant.

According to the WHO, protein requirements are determined by the weight of an individual. Infants require more proteins as a percentage of body weight when compared to adults. An infant who weighs an average weight of 10kg requires 11.8g/day of protein while an adult who weigh about 50kg requires <https://assignbuster.com/protein-article/>

about 42g/day (Barrett, 2009). This is because infants have a high energy demand owing to the high surface area to volume ratio. This means that infants lose more heat than adults thus have a higher caloric demand as compared to adults.

The intestines of a normal adult contain bacteria also known as normal flora. These organisms aid in the breakdown of complex protein to simple amino acids which are easily absorbed. The breaking down of dietary proteins to absorbable amino acids also requires complex enzymes. However, in infants these mechanisms are not fully developed (Barrett, 2009). This means that infants have to consume large amounts of proteins to meet their daily dietary requirement.

In conclusion, protein requirements depend on the age, sex and weight of an individual. According to the WHO, protein requirements are calculated in relation to age and body weight. Although infants are younger and have less body weight than adults, their physiological state increases their protein demands. It is thus necessary to provide sufficient amounts of protein for infants to facilitate normal body functioning.

#### Reference list

Barrett, E. (2009). *Ganong's Review of Medical Physiology*. NY: McGraw Hill.

Millward, D. (2007). Physical activity, protein metabolism and protein requirements. *Proceedings of the Nutrition Society*, 53, 223–240.

Scrimshaw, N. (2002). Protein requirements of man: Variations in obligatory urinary and fecal losses in men. *Journal of Nutrition*, 102, 1595–1604.