Red meat and protein

Protein is essential for growth and maintenance of the body, and can also provide energy. Protein is made of amino acids, some of which can be synthesised in the body, whilst others – essential amino acids – cannot. Essential amino acids need to be consumed in the diet to maintain health.

Protein quality

Diets must provide the right balance of amino acids and nitrogen essential for the body to be able to synthesise protein for growth and maintenance. Protein quality is a measure of how well or poorly the body can use a given protein to meet its needs. This is dependent on the essential amino acid composition of a protein and also how easy it is for the body to digest and is determined by the Protein Digestibility-Corrected Amino Acid Scores or PDCAAS method. Red meat (and in some cases meat products) are good sources of high biological value protein because they contains the nine essential amino acids that the body cannot make. Therefore, red meat has a high PDCAAS score.

Protein content

Red meat contains, on average, 19-24 g of protein per 100 g (raw weight) while cooked red meat contains 27-35 g of protein per 100 g (cooked weight). As meat is cooked, the water content decreases and the nutrients become more concentrated, therefore the protein content increases by weight. Lean red meat contains a higher proportion of protein than fattier cuts.

Energy, fat and protein content of lean and untrimmed cuts of red meat (per 100 g; UK figures)

Meat (cooked)	Energy kJ (kcal)	Fat (g)	Protein (g)
Rump steak - lean and fat	953 (228)	12.7	28.4
Rump steak - lean	745 (177)	5.9	31.0
Leg joint of lamb – lean and fat	1003 (240)	14.2	28.1
Leg joint of lamb - lean	853 (203)	9.4	29.7
Pork leg joint – lean and fat	903 (215)	10.2	30.9
Loin chops of pork – lean	774 (184)	6.4	31.6

Source: Finglas et al. (2015)[1]

[1] Finglas et al. (2015) McCance and Widdowson's The Composition of Foods. Seventh Summary Edition. Cambridge: Royal Society of Chemistry.

How Much Protein?

In the UK, on average, adults aged over 18 years need 0.75 g of protein per kg of body weight daily. This equates to approximately 55.5 g/day and 45 g/day for men and women aged 19-50 years, respectively. There is an extra requirement for growth in infants and children, and for pregnant and breast feeding women. For strength and endurance athletes, protein requirements are increased to around 1.2-1.7 g of protein per kilogram of body weight daily to support muscle tissue growth and repair.

Protein and Weight management

Protein has been found to contribute more to a feeling of fullness after meals (satiety) compared with fat and carbohydrate[1]. Boosting satiety helps to suppress the urge to eat for a period of time after a meal, which may help to reduce the temptation to snack. Feeling hungry is commonly cited as one of the main reasons why many individuals abandon a weight-loss diet. By helping to keep hunger at bay, incorporating lean protein into a weight-loss diet may improve an individual's ability to stick to the diet.

In Conclusion

Lean red meat supplies the essential amino acids required for growth and maintenance. The leaner the meat, after cooking, the more concentrated the source of protein (i.e. the more protein it contains by weight). Eating protein rich foods, such as lean red meat, may help to curb hunger between meals and may help to facilitate weight loss when following a calorie-controlled diet, as well as weight maintenance.

Please visit www.meatandhealth.com for more information.

[1] Paddon-Jones D et al. (2008) Am J Clin Nutr 87: 1558S– 61S.