

# Information for Health Professionals

## ▶▶▶ 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 contain 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, 19-24g of protein per 100g (raw weight) while cooked red meat contains 27-35g of protein per 100g (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.

## RED MEAT & 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.

### How much Protein?

In the UK, on average, adults aged over 18 years need 0.75g of protein per kg of body weight daily. This equates to approximately 55.5g/day and 45g/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 1.2-1.7g 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. 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.

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

### 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.



# Gwybodaeth ! Weithwyr Iechyd Profesiynol



## ANSAWDD PROTEIN

Rhaid i ddeiet ddarparu'r cydbwysedd iawn o asidau amino a nitrojen sy'n hanfodol i'r corff allu syntheseiddio protein ar gyfer tyfu a chynnal. Mae ansawdd protein yn fesur o ba mor dda neu wael mae'r corff yn gallu defnyddio'r protein i fodloni ei anghenion. Mae hyn yn dibynnu ar gyfansoddiad asid amino hanfodol protein a hefyd pa mor hawdd ydyw i'r corff i'w dreulio a chaff ei bennu gan y dull Sgoriau Asid Amino wedi'u Cywiro - Treuliadwyedd Protein neu'r dull PDCAAS. Mae cig coch (ac mewn rhai achosion, cynhyrchion cig) yn ffrionellau da o brotein gwerth biolegol uchel oherwydd eu bod yn cynnwys y naw asid amino hanfodol na all y corff eu creu. Felly, mae gan cig coch sgor PDCAAS uchel.

## CYNNWYS PROTEIN

Ar gyfartaledd, mae cig coch yn cynnwys 19-24g o brotein fesul 100g (pwyasau amrwd) tra bod cig coch wedi'i goginio yn cynnwys 27-35g o brotein fesul 100g (pwyasau wedi'i goginio). Wrth i'gig gael ei goginio, mae'r cynnwys dwr yn lleihau ac mae'r maetholion yn dod yn fwy crynodedig, ac felly mae'r cynnwys protein yn cynyddu yn ôl pwyasau. Mae cig coch braster isel yn cynnwys cyfran uwch o brotein na thoriadau mwy brasterog.

## CIG COCH A PHROTEIN

Mae protein yn hanfodol ar gyfer twf a chynnal y corff, a gall hefyd ddarparu egni. Mae protein wedi'i ffurfio o asidau amino. Gall rhai o'r rhain fod wedi'u syntheseiddio yn y corff, tra bod eraill - asidau amino hanfodol - na all gael eu syntheseiddio yn y corff. Mae angen bwyta asidau amino yn y deiet i gadw'n iach.

## Faint o Brotein?

Yn y DU, ar gyfartaledd, mae oedolion dros 18 mlwydd oed angen 0.75g o brotein i bob kg o bwysau eu corff bob dydd. Mae hyn yn cyfateb i tua 55.5g/ dydd a 45g/dydd i ddynion a merched 19-50 mlwydd oed, yn y dreft honno. Mae angen mwy ar gyfer twf mewn babanod a phlant, ac ar gyfer menywod beichiog a menywod sy'n bwydo ar y fron. Ar gyfer athletwyr cryfder a dygnwch, mae gofynion protein yn cynyddu i tua 1.2-1.7g o brotein fesul cilogram o bwysau'r corff bob dydd i gefnogi twf ac atgyweirio meinw'r cyhyrau.

## Protein a rheoli Pwysau

Mae wedi dod i'r amlwg bod protein yn cyfrannu at deimlad o fod yn llawn wedi prydau bwyd (sy'rffed) o'i gymharu â braster a charbohydrad. Mae rhoi hwb i sy'rffed yn helpu i atal yr awydd i fwyta am gyfnod o amser ar ôl pryd o fwyd, a gallai hyn helpu i leihau'r demtasiwn i fwyta byrtyd. Honnir yn aml mai teimlo'n llwglyd yw un o'r rhesymau mwyaf cy'rffed in dros nifer o unigolion yn rhoi'r gorau i ddeiet coll pwyasau. Drwy helpu i beidio â theimlo'n llwglyd, gallai ymgorffori protein braster isel i ddeiet coll pwyasau wella gallu unigolyn i gadw at y deiet.

## Egni, braster a chynnwys protein torladau braster isel a heb eu tocio o gig coch (fesul 100g; ffigurau'r DU)

Cig (wedi'i goginio)	Egni kJ (kcal)	Braster (g)	Protein (g)
Stecen rym - braster isel a thrwchus	953 (228)	12.7	28.4
Stecen rym - braster isel	745 (177)	5.9	31.0
Coes cig oen - braster isel a thrwchus	1003 (240)	14.2	28.1
Coes cig oen - braster isel	853 (203)	9.4	29.7
Coes porc - braster isel a thrwchus	903 (215)	10.2	30.9
Golwythion lwyn porc - braster isel	774 (184)	6.4	31.6

## I GIG!

Mae cig coch braster isel yn darparu'r asidau amino hanfodol sydd eu hangen i dyfu a chynnal y corff. Y lleiaf o fraster sydd mewn cig, wedi'i goginio, y mwyaf crynodedig fydd y ffrionhonnell o brotein (h.y. y mwyaf o brotein mae'n ei gynnwys yn ôl pwyasau). Gall bwyta bwydddydd sy'n llawn protein, fel cig coch braster isel, helpu i leihau teimlo'n llwglyd rhwng prydau a gallai helpu i hwyluso coll pwyasau wrth ddilyn deiet rheoli calorïau, yn ogystal â chynnal pwyasau.

Finglas et al. (2015) McCance and Widdowson's The Composition of Foods. Seventh Summary Edition.  
Cambridge: Royal Society of Chemistry.  
Paddon-Jones D et al. (2008) Am J Clin Nutr 87: 1558S-61S.