

A practical guide for dietitians

Other sources of protein

A more sustainable diet does not necessarily have to exclude red meat or dairy altogether – therefore meat and dairy nutrient intakes need not be compromised.

This information sheet provides some useful and practical guidance with regard to plant food sources of nutrients associated with meat and dairy consumption.

Plant food sources of protein

Tofu, soya mince / chunks, Quorn™ (mycoprotein), soya beans – fresh, frozen or roasted (soya nuts), other beans, peas, pulses, nuts and seeds, soya alternatives to yogurt.

Did you know?

- An environmentally sustainable diet does not mean a vegetarian or vegan diet i.e. complete exclusion of dairy and meat proteins is not necessary.¹⁻³
- Cereal products are low in protein, however, due to the quantities they are consumed in they contribute significantly to protein intakes.⁴ Cereal products contribute to 22-29% of total protein intakes whilst meat contributes to 29-37% and milk and dairy 13-20%.
- All age groups and sexes are overconsuming protein.⁴ Therefore, the current government recommendations for a more sustainable diet to reduce red meat to no more than 70g per day per person and reduce dairy by a third, whilst increasing plant-food sources of protein will not compromise protein status.
- Plants contain all essential amino acids – be it some at lower levels compared to animal proteins.⁵⁻⁸
- Terms ‘high biological’ and ‘low biological’ value and ‘complete’ and ‘incomplete’ proteins are misleading as they only reflect the ability of one food to meet all essential amino acid needs.⁷ It does not reflect the ability of a whole day’s consumption to meet essential amino acid needs.
- Studies have repeatedly shown that a diet based purely on plant foods that meets energy requirements will meet all essential amino acid needs.⁸⁻¹²
- There is no need to compliment plant protein food sources at each meal – nitrogen balance is achieved over the course of a day’s essential amino acid intakes.⁷
- Spread protein load evenly throughout the day:¹³⁻¹⁷ it is now well established that protein loads should be spread throughout the day to optimise muscle protein synthesis. Protein uptake and utilisation plateaus at around 20g of animal protein – for plant proteins this will be higher at around 30g and for elderly even higher.



Tips for using plant proteins

- Have three helpings of plant protein foods daily.
- Tofu – 75-100g: Cut into bite size pieces added to curries and stir fries.
- Meat replacers – 100g: swap your meat or go half and half with soya or Quorn™ mince or chunks.
- Go meat free a couple of days a week.
- Beans – 100g: go for canned beans and add to your salads, to replace some meat in your dishes or how about beans on toast.
- Quinoa (40g dry weight): use in salads or instead of rice.
- Nuts (a handful) and seeds (1 tbsp): sprinkle over breakfast cereals, porridge and salads and add to main meals or have as a snack.
- Snack time: a handful (30g) of soya nuts (roasted edamame beans), a small pot (150g) of soya alternative to yogurt or Greek-style yogurt, a handful of nuts or a tbsp. of seeds.
- Starchy foods and wholegrain cereals: although low in protein content, due to the quantities they are consumed in, they will significantly contribute to an individual’s intake.

How much do we need?

| | DRV for protein mg ¹⁸ | | Who needs to up their intakes? |
|--------------------|----------------------------------|--------|--|
| | Male | Female | |
| 2-3 year olds | 14.5 | | <ul style="list-style-type: none"> • All age groups and sexes are exceeding government protein recommendations (0.75g/kg body weight). • *Elderly & sarcopaenia. International and European groups are recommending that the elderly (>65 years) should aim for higher protein intakes to offset inflammatory and catabolic conditions.¹⁹ <ul style="list-style-type: none"> ○ At least 1-1.2g protein/kg body weight ○ 1.2-1.5g/kg body weight for those regularly exercising or have an acute/chronic disease. |
| 4-6 year olds | 19.7 | | |
| 7-10 year olds | 28.3 | | |
| 11-14 year olds | 42.1 | 41.2 | |
| 15-18 year olds | 55.2 | 45.0 | |
| 19 – 64 year olds | 55.5 | 45.0 | |
| 65 year and older* | 53.3 | 46.5 | |

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Plant food sources of protein²⁰

| Food | Serving size household | Serving size g | Protein g /serving |
|---|-------------------------------|-----------------------|---------------------------|
| Quorn™ (mycoprotein) pieces / mince ²¹ | 1/5 th of a pack | ~100g | 10.9 |
| Soya mince (chilled or frozen) ²²⁻²⁶ | 1/5 th of a pack | 100g | 16.6 |
| Tofu, firm silken | ~1/4 block | 75g | 17.6 |
| Tofu, marinated ²⁷ | ~1/3 pack | 75g | 12.8 |
| Quinoa, raw | One serve | 40g | 5.5 |
| Soya beans, soaked, boiled and drained | 4 tbsp | 100g | 14.0 |
| Red kidney beans, canned and drained | 4 tbsp | 100g | 6.9 |
| Chickpeas, canned and drained | 4 tbsp | 100g | 7.2 |
| Butter beans, canned and drained | 4 tbsp | 100g | 5.9 |
| Baked beans | 1 small can | 200g | 10.0 |
| Soya nuts / Roasted edamame beans ²⁸ | Small handful | 28g | 10.8 |
| Lentils, green/brown, boiled and drained | 4 tbsp | 100g | 8.8 |
| Lentils, split red, boiled and drained | 4 tbsp | 100g | 6.9 |
| Peanuts, plain or mixed nuts | Handful | 30g | 7.0 |
| Almonds | Handful | 30g | 6.3 |
| Cashews | Handful | 30g | 6.2 |
| Pistachios | Handful | 30g | 5.4 |
| Walnuts | Handful | 30g | 4.4 |
| Brazil nuts | Handful | 30g | 4.3 |
| Hazelnuts | Handful | 30g | 4.2 |
| Pecans | Handful | 30g | 2.8 |
| Peanut butter – smooth | Thickly spread on 2 slices | 40g | 9.1 |
| Pumpkin seeds | 1 tbsp | 10g | 2.7 |
| Sunflower seeds | 1 tbsp | 16g | 3.2 |
| Sesame seeds | 1 tbsp | 7g | 1.3 |
| Flaxseeds / linseeds ²⁸ | 1 tbsp | 10g | 1.8 |
| Chia seeds ²⁸ | 1 tbsp | 10g | 1.6 |
| Pine nuts | 1 tbsp | 8g | 1.1 |



| | | | |
|--------------|--------------|-----|-----|
| Tahini paste | 1 heaped tsp | 19g | 3.5 |
| Hummus | 2 tbsp | 60g | 4.1 |
| Falafel | 2 | 60g | 3.8 |

Useful links

Click [here](#) to access the One Blue Dot Nutritional Considerations: Protein document which summarises the evidence around protein intakes in the UK.

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