Optimising Dietary Protein

Protein is a vital macronutrient that is created through the binding of amino acids into peptides and complex protein structures. The body is unable to store adequate amounts of protein for our needs, so relies on regular dietary intake. The body is then able to manufacture most amino acids, except for nine essential amino acids which must come regularly from our diet.

The role of protein is not restricted to just muscle synthesis, growth and repair, but also includes enzyme, neurotransmitters, antibody and hormone production. Protein also regulates our body's pH and fluid balance, and is a last resort for energy production.

Protein has an important role to play in our daily health, immune system, energy and metabolism, and weight management.

The protein quality is variable amongst food groups.

Animal sources:

Tend to be high quality protein that contain all the essential amino acids. Animal sources of protein are usually highly digestible.

Plant sources:

Tend to be lower quality protein that do not contain all essential amino acids, making it necessary to combine foods to optimise amino acid intake. The exception being soy and some legumes. It's not necessary to combine proteins at every meal. Vegetarian protein combining may look like legumes, lentils or peanuts combined with grains such as rice and wheat.

Plant sources of protein are also less digestible than animal sources

Recommended Daily Intakes (RDI):

Recommendations differ across the lifespan according to individual growth and repair requirements, and with certain health conditions and type of physical activity. Excess protein intake may adversely affect certain health conditions, including kidney disease, osteoporosis risk, some cancers and cardiovascular disease.

The basic RDI for protein intake is 0.8g per kilogram of body weight. If you are a 65kg adult you would require 65 x 0.8 = 52g of protein per day

Children	Adults	Special Considerations
Child 1-3 years – 0.92g/kg	Male 19-30 yrs – 0.84g/kg	Pregnant women 2nd & 3rd
Child 4-8 years – 0.73g/kg	Male 31-50 yrs – 0.84g/kg	Trimester
	Male 51-70 yrs – 0.84g/kg	14-18 yrs – 1.02g/kg
Boys 9-13 years – 0.94/kg	Male 70+ yrs – 1.07g/kg	19-50 yrs – 1.00g/kg
Boys 14-18 years – 0.99/kg		Lactation
	Female 19-30 yrs – 0.75g/kg	14-18 yrs – 1.10g/kg
Girls 9-13 years – 0.61g/kg	Female 31-50 yrs – 0.75g/kg	19-50 yrs – 1.10g/kg
Girls 14-18 years – 0.77g/kg	Female 51-70 yrs – 0.75g/kg	
	Female 70+ yrs – 0.94g/kg	Female Athletes 0.75g/kg
		Male Athletes 0.84g/kg

Animal-based sources of protein

- Red meat (beef, lamb, veal, pork, kangaroo)
- Offal (liver, kidney, pate)
- Poultry (chicken, turkey, game birds)
- Fish or shellfish (salmon, sardines, tuna, anchovy)
- Eggs

Plant-based sources of protein

The type of protein found in plant-based products is not as easy to absorb as animal sources, but can still contribute to an adequate protein intake.
- Nuts and seeds (tahini, sunflower, almonds)
- Dried fruit (prunes, dates, apricot, apple, fig)
- Wholemeal pasta and bread
- Wholegrains (quinoa, oats, buckwheat, amaranth)
- Iron-fortified bread and cereals
- Legumes (mixed, broad, red kidney, baked, lentils and chickpeas)
- Dark leafy vegetables (bok choy, kale, green peas, spinach, silverbeet, broccoli)
- Vegetables (sundried tomato, beetroot, avocado, garlic)
- Tempeh and tofu
- Seasonings (nutritional yeast, Marmite, curry powder, cinnamon, parsley, thyme)
- Foods high in Vitamin C and citric acid, malic acid

Ensuring you eat from a wide variety of protein rich foods, cooked in a variety of ways will help you to reach your protein target.

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Animal Sources	Serving Size	g of protein
Yoghurt Greek-style	225g	20g
Chicken skinless breast	100g	34.5g
Chicken drumstick	100g	29g
Cottage cheese	½ cup	14g
Cheese parmesan	50g	20g
Cheese cheddar	85g	20g
Milk – regular fat 3.5%	250ml	8g
Milk - Oat	200ml	2.8g
Milk - Almond	200ml	1g
Kangaroo, steak	100g	34.6g
Sardine, whole	100g	20g
Beef steak	100g	32g
Beef sausage	100g	16g
Ham, lean	100g	17g
Lamb	200g	33g
Prawn (cooked)	100g	25g
Squid / calamari	100g	18g
Tuna (canned in water)	85g	20g
Salmon fresh	200g	40g
Turkey (hind quarter)	100g	19g
Egg (chicken)	Large x 1	6g
Fruit & Vegetables	**Serving Size**	**g of protein**
Apple – medium	1 piece	0.4g
Banana - medium	1 piece	0.2g
Carrot – sliced	½ cup	0.8g
Potato – medium cooked	1 piece	2.5g
Nuts, seeds & grains	**Serving Size**	**g of protein**
Bread – can vary, check package	1 slice	2.1g >
Lentils (Puy)	100g	28g
Chickpeas	¼ cup	4g
Black beans	¼ cup	4g
Hemp seeds	1 tbl	4g
Chia seeds	1 tbl	3g
Red kidney beans	¼ cup	4g
Lima bean	¼ cup	4g
Edamame (shelled)	¼ cup	5g
Quinoa	1 cup	8g
Green peas	1 cup	8g
Almonds	100g	20g
Peanut or nut butter	1 tbl	4.6g
Yeast, dry powder	10g	4g
Almond meal	100g	20.5g

Buckwheat, cooked	100g	2.7g
Amaranth, uncooked)	100g	15.2g
Cashew nut	50g	9g
Pecans	50g	4g
Muesli untoasted	100g	10.8g
Tahini (sesame seed)	50g	10g
Sunflower seed	25g	8g
Wheat bran (unprocessed)	25g	2.5g
Pepitas	30g	10g
Soy flour	100g	50g
Tempeh	100g	13g
Firm tofu	100g	13g
Seaweed, nori dried	25g	12g
Protein supplements	**Serving Size**	**g of protein**
Whey based <70% unfortified	100g	85g
Gelatine	50g	42g
Gluten from wheat	50g	37g
Milk powder full fat	50g	13g

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