Protein
on a Plant-Based Diet

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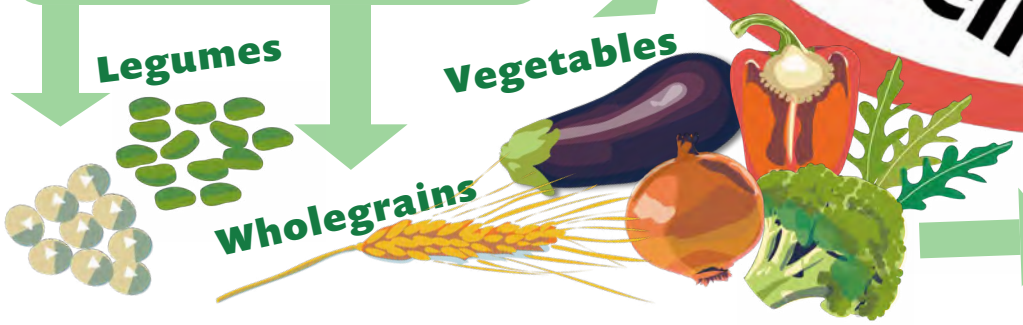
Probably the *most asked question* we face when choosing to eat a *plant-based diet* *is*.....

The truth is that for **most healthy adults**, it is **not difficult** to meet our protein requirements on a **plant-based diet *when*** eating a good **mix of:**



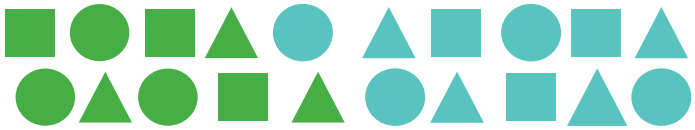
***and* meeting our energy needs.**

However, it can require some thought or consideration.

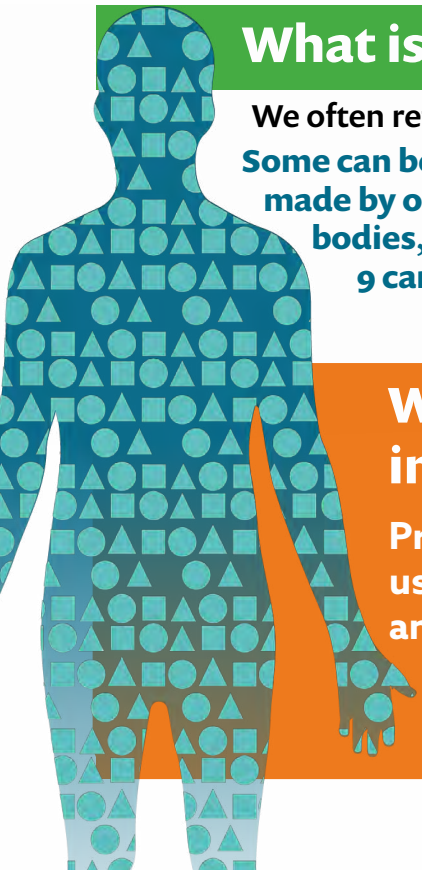
What is protein? Proteins are made of **20** different ***amino acids***.

We often refer to amino acids as the '**building blocks**' of protein.

Some can be made by our bodies, but 9 cannot.

9  **11**

These **9** are called ***essential amino acids***.
We must obtain these essential amino acids from the food we eat.



Why is protein important?

Protein is vital as it is used in the structure and function of all our tissues and organs.

Our bodies have at least 10,000 different proteins, each performing different jobs:

Protein is part of the **structure of our muscles, bones, ligaments, skin, and all cells**.
Proteins keep our **immune system strong**.
Some proteins are **enzymes** and **hormones**, acting as **messengers** for our bodies processes.
Others are used as **transport**, carrying other molecules throughout the body.

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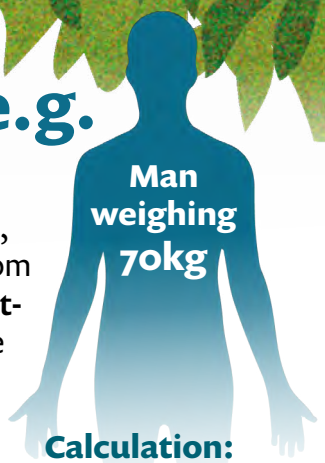
How much protein do we need?

The current international Recommended Dietary Allowance (RDA) for protein is 0.8 g per kg of ideal body weight. However, these recommendations do not consider **age**, **stage of life**, **physical activity levels** or **dietary pattern**.

Due to the presence of ***fibre*** and ***other (healthy) components*** of **whole plant foods**, we may digest around **10% less protein** from our intake if consuming a **whole food plant-based diet**, compared to those that include **animal products** in their diet.

Therefore, experts agree that we should aim for at least 1g of protein per kg of ideal bodyweight if following a plant-based diet.

e.g.

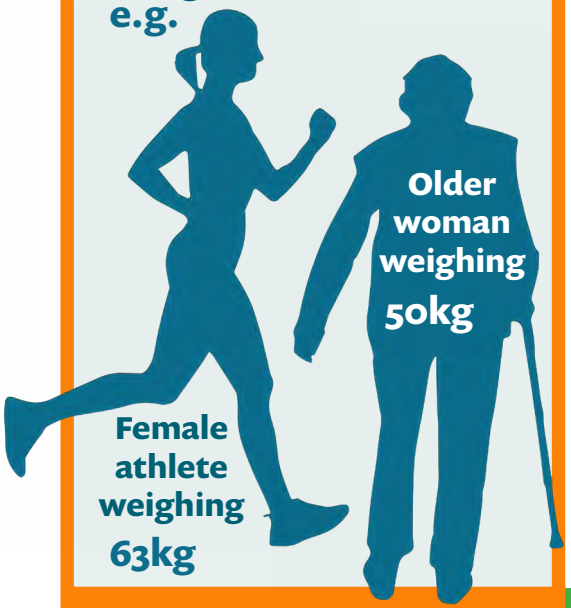


Calculation:
70 x 1 g= 70g protein

If you are an **older adult** or you are **exercising a lot**, you may want to aim for **1.2 to 1.6g/kg of ideal bodyweight**.

To maintain good health and function, and to avoid muscle and bone loss (sarcopenia and osteopenia) as we age, it is agreed that protein needs are *higher in older adults*.

e.g.



75-100g protein/day | **60-80g protein/day**

Do we need to *combine* certain foods to get enough protein?

You may have heard the **outdated myth that only animal proteins like meat and eggs are 'complete proteins'.**

This refers to protein sources that contain all nine amino acids in adequate proportions for what we need. We were told that to obtain adequate protein on a plant-based diet you **must combine certain foods *within a meal* to get 'complete proteins'**.

We now know this is not true. Some plant foods contain similar proportions of amino acids to meat, such as tofu and quinoa.

Most importantly, ***all* plants contain every essential amino acid,** but proportions do vary from one plant to another.

Therefore, if we eat a *mix* of plant foods *over the course of each day*, and meet our protein requirements, we will get the balance of amino acids that we need.

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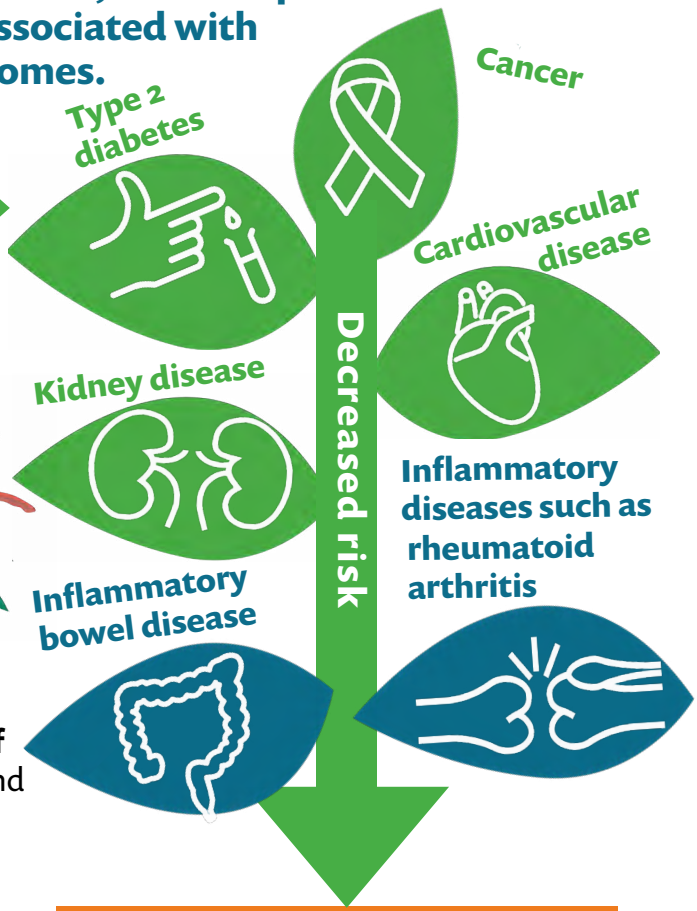
Where we get our protein from matters.

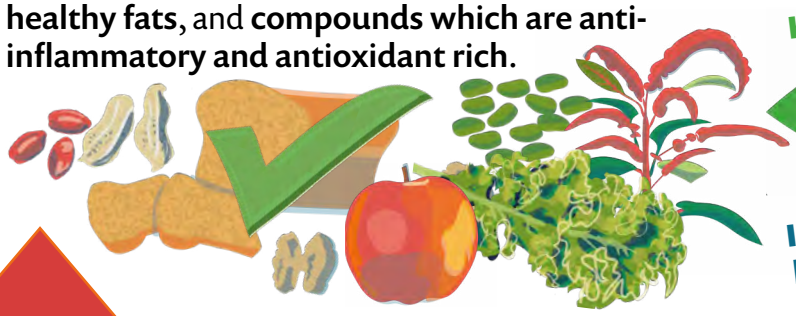
Animal vs. plant protein

Protein from whole plant foods has been found to be protective to our health, whereas protein from animal products is often associated with poorer health outcomes.

Replacing **animal protein** with **plant protein** has been shown to ***decrease our risk*** of...



This is because plant protein comes within a package of **protective components** such as **fibre, healthy fats**, and **compounds which are anti-inflammatory and antioxidant rich.**



In contrast, **animal protein** comes within a package of components that **increase risk of disease** such as **saturated fat, haem iron**, and **other compounds that cause inflammation and cellular damage.**

Ref: Neuenschwander et al, 2023; Zhong et al, 2021; Joshi et al, 2020; Philippou et al, 2020; WCRF. dietandcancerreport.org, 2018.

Who is at risk of protein deficiency?

The following people may have an increased risk of not meeting protein requirements:

- Those with a diet **low in calories** due to eating disorders or for any other reason.
- Those with a diet **too high in 'ultra-processed foods'** - crisps, cakes, sweets, sugary cereals.
- **Older adults.**

Anyone with increased requirements:

- **professional athletes**
- **pregnant and lactating women,**
- **people with some acute and chronic illnesses.**

Signs of deficiency

- Oedema (swelling of feet and ankles and other parts of the body)
- Muscle wasting and high bone fracture risk
- Greater risk or severity of infections
- Lack of energy and fatigue.
- In children, failure to thrive and stunted growth

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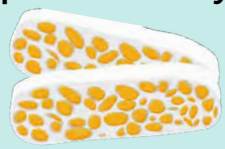
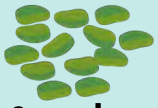
What plant foods are good sources of protein?

We should aim to eat **3-4 servings/day of high-protein plant foods**, therefore try to include a serving of plant protein at every meal and with some snacks.

80g **tofu**
13g protein



80g **tempeh**
17g protein



80g **edamame beans**
9.4g protein

20g pea protein powder
16g protein

80g **tinned chickpeas**
6g protein

80g **cooked red lentils**
6g protein

½ can **baked beans**
9.5g protein

2 **vegan sausages**
9.3g protein

60g serving of **cooked seitan**
18g protein

1 cup **cooked quinoa**
11g protein

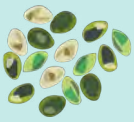
1 serving (75g dried) **legume pasta**
18.5g protein

1 cup **broccoli**
4.6g protein

2 slices **wholemeal bread**
8.8g protein

1 cup (250ml) **soya milk**
8.3g protein

15g (1 tbsp) **peanut butter**
4g protein



2 tbsp **hemp**
6.7g protein

30g (handful) **mixed nuts and seeds**
6g protein

7g (1 tbsp) **nutritional yeast flakes**
3.4g protein

10 tips to get more protein

1 

Make tofu and tempeh a regular part of your diet. Slice/cube, marinade and grill, then use in sandwiches, stir fries and salads. Silken tofu can be blended into pasta sauce, soups or to make a delicious chocolate pudding.

2

Vary your whole grains - swap rice for other higher protein choices such as quinoa, spelt and buckwheat in your meals and salads.

Choose high-protein plant-based milks such as soya or pea for your cereals and smoothies. Add in a pea protein powder as well if you need to boost your intake.

3

Oils and vegan butter have no protein so **try using hummus or nut and seed butters** instead on toast and sandwiches, and in baked goods; and blend either white beans, silken tofu, nuts or seeds to make high protein and tasty sauces and dressings.

4

5

Top breakfasts, soups and salads with a sprinkling of nuts and seeds. Walnuts, hemp, flax and chia seeds are also a good source of essential omega-3 fats.

6

You can **include some plant-based meat alternatives** such as mycoprotein (Quorn™) or seitan as part of a healthy diet. They can help you to boost your protein intake, and can sometimes make eating plant-based easier to stick to.

7

Include beans and lentils more often. Bean burritos and burgers, houmous and other bean dips, bean stews, chillis and soups, and lentil curries.

8

Add spices to cooked chickpeas or lentils, then roast or air fry to scatter on salads, or snack on as an alternative to popcorn and crisps.

9

Use higher protein flours and pastas in your baking and cooking. For example, use chickpea (gram) flour to make a flatbread or vegan omelette, and choose green pea or chickpea pasta (available in most supermarkets) for your next pasta dish.

10

Don't forget, **vegetables are higher in protein than you might think** so every little adds up. Ranking highest are green peas, spinach, sweetcorn, broccoli, Brussel sprouts, kale, asparagus and mushrooms.

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How can I improve the digestibility of plant proteins?

Some plant foods that are **lower in fibre** provide more **digestible protein**. Such as:


Seitan

Plant-based meat alternatives

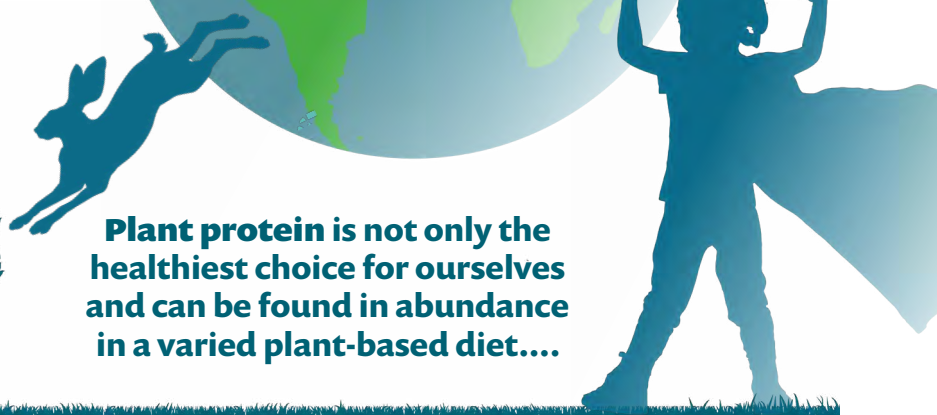
Cook beans and **lentils** until they are soft enough to **mash easily** with a fork.

Sprouting and **soaking** can improve the **digestibility** of higher fibre plant foods like legumes and wholegrains.

When **transitioning** to a **diet higher in legumes**, starting with the **smaller ones (lentils, peas and mung beans)** can help with digestion. **Begin with small portions**, giving your **gut microbes a chance to adapt** to this new food.

And finally…

We know that moving from animal food to plant protein reduces the environmental impacts of foods, including *carbon emissions*, *water utilization*, and *land use changes* by up to 75%



Plant protein is not only the healthiest choice for ourselves and can be found in abundance in a varied plant-based diet....

... it is also the best choice for our planet, and of course, for the animals that we share it with.

Please note: this fact sheet focuses on dietary requirements for adults and is not intended to replace individual nutrition or medical advice.

Please refer to our website for our **'PBHP for kids'** section, which includes several articles, fact sheets and other resources on **feeding your family on a healthy plant-based diet**, and for **pregnancy**. It is worth noting that **protein needs do increase during pregnancy**, particularly in the **third trimester** and whilst **breastfeeding**.

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