

## Some people are at higher risk of developing pressure sores or wounds due to:

- Reduced or limited mobility
- Incontinence
- Medical conditions that affect blood circulation or reduce movement e.g, Diabetes, peripheral arterial disease and multiple sclerosis, and many more.
- More time spent sitting or lying
- Traumatic injury or post-surgery
- Poor nutrition or malnutrition
- Overnutrition and obesity

**Aims of treatment:** If you have a wound, your nutritional requirements will likely be increased. Wound healing is an energy-demanding process, and certain nutrients are required to support blood clotting, tissue repair and collagen formation; if sufficient protein and energy is not consumed, your body will have to break down fat and protein stores, which can lead to malnutrition and muscle weakness.

You should try to maintain your weight during this process or avoid significant weight loss, as this could affect wound healing. If you are underweight, ask your Doctor, Nurse or Dietitian to explain food fortification and high calorie drinks and snacks.

**PROTEIN** is key to promoting wound healing. Protein requirements are increased when you have a wound so inadequate protein intake can delay healing.

- It is recommended to aim for **1.2-1.5 grams of protein per kilogram of body weight each day\***. For example, if you weigh 60 kilograms, that would be 72-90g of protein each day. People who are bed-bound, non-weight bearing or who have severe illness may need as much as 2 grams of protein per kilogram of bodyweight each day.
- Include a portion (around a palm-size or 20-30g) at each meal, spaced evenly across the day. Try to choose higher protein snacks and milky drinks between meals also (see next page for examples). Older people may need to aim for nearer 30-40g per meal as our muscle can become less responsive to protein intake as we age.



Examples of food or drink	Approximate serving to provide 20g of protein
Chicken, fish or meat	A palm-size or ~100g
Greek yoghurt	~200-400g (depending on brand). Look for a Skyr or Greek-style yoghurt.
Eggs	Three medium-sized eggs
Tofu	~160g
Beans i.e. baked beans, kidney beans, butterbeans.	1 can or 300-400g
Cow's milk or soya drink	1 pint or ~560mls
Soya or Quorn mince	100-150g

➤ Foods are normally combined within a meal to make it easier to achieve 20g. For example, half a can of beans and two slices of toast would reach 20g protein, or 50g of porridge oats and 200mls of milk topped with a handful of mixed seeds.

**\*If you have kidney disease speak to your Doctor or Dietitian as a high protein diet may not be appropriate.**

## TOP TIPS FOR INCREASING PROTEIN INTAKE:

- **At breakfast:** eggs, smoked salmon, mackerel, kippers, sardines, baked beans, greek yoghurt or milk with cereal or porridge. Higher protein cereals: oats, muesli, All Bran™, bran flakes or Shredded Wheat®.
- **At lunch, make an omelette or scrambled eggs, or have a sandwich with a protein filling** e.g., ham, turkey or beef slices, egg, cooked chicken, tinned or smoked fish, cheese or peanut butter.
- **Prioritise milky drinks** e.g., hot chocolate, milkshakes, Horlicks®, Ovaltine®, milky coffee, lassi or a glass of cold or warm milk. Making your own fruit-based milkshake will be healthier than traditional supermarket milkshakes.
- **High protein snacks:** boiled eggs, omelette, scrambled eggs or beans on toast, beef jerky/biltong, cooked meats, Greek or Skyr-style yoghurts, milk or milkshakes, sandwich with protein filling (see above), edamame beans, nuts, houmous with pitta or vegetable sticks, chapatti with dahl and crispbreads or rice cakes with smoked salmon, cottage/cream cheese or quark.
- **Milk-based puddings:** yoghurt (*look for the highest grams of protein per 100g e.g. Skyr/ Greek-style*), rice pudding, custard, semolina, seekhund, kulfi, milk halwa, basundi, doodh pak or whipped dessert.
- **If you are at risk of malnutrition, you could choose higher energy snacks** such as sausage rolls, cocktail sausages, pork pies, scotch eggs or cheese and crackers. You could also fortify meals with whole or skimmed milk powder, whole milk, full fat yoghurt, cheese or ground nuts (*if not allergic*).
- **If you do not need additional calories, choose lower fat and leaner meat and dairy sources.**
- **If you follow a vegetarian or vegan diet, choose higher protein meat and milk alternatives** e.g., Quorn®, tofu and soya. Add beans, lentils, edamame and peas to meals and have grains such as oats, quinoa, buckwheat, rice, seitan, brown pasta and bread and couscous.

**KEY NUTRIENTS:** consuming a wide variety of foods from all the different food groups helps you to obtain key vitamins and minerals to support optimal healing. A multivitamin and mineral supplement is not necessary, however if your dietary intake is poor then you may want to consider an over-the-counter supplement.

- **At least 5 fruits and vegetables a day:** a portion is about a handful, or a piece of fruit. These support collagen formation, immune system response and iron absorption.
- **3 portions of calcium a day:** Calcium supports bone strength as well as coagulation of the blood. One portion would be 200mls of milk, a small yoghurt pot or a matchbox size piece of cheese.
- **A daily 10ug Vitamin D supplement** (particularly in the winter months). Vitamin D has a key role in the immune system and supports the production of proteins with antimicrobial properties.
- **1 portion of oily fish per week:** Oily fish provides essential omega-3s which are anti-inflammatory and make up cell membranes. This includes salmon, mackerel, herring, trout and sardines.
- **Anti-inflammatory fats:** nuts, seeds, salmon, vegetables oils and avocados are all good sources. Reduce saturated fats such as fattier meats, cakes, pastries, crisps, chips, butter, lard, and cream (unless trying to gain weight).
- **Maximize Vitamins A, C, E, Iron and Zinc-rich foods:** fruit juice, citrus fruits, berries, broccoli, spinach, kale, peppers, potatoes, eggs, shellfish, red meat and poultry, fish, milk, cheese, beans, tofu, nuts, seeds, avocados and lentils are all good sources of essential vitamins and nutrients. These help to form collagen and new tissue, support immunity and provide oxygen to the wound site.
- **Reduce alcohol intake, avoid smoking and increase physical activity** to improve circulation.

**Fluids:** Aim for at least 6-8 cups of fluid each day. This supports circulation to the skin, keeping it hydrated and preventing breakdown. Some wounds also seep, causing fluid losses which needs to be replaced.

Choose high-protein milky drinks (see above) and higher-energy drinks such as juices/smoothies if you are underweight. Water, squash, tea, coffee, soups and juicy fruits all count towards fluid intake. If you want to avoid weight gain or have diabetes, choose plain milk and limit sugar-containing drinks.

