

Protein

- ✚ Protein is needed to build and maintain all the cells of the body. Cells are constantly being replaced so protein is needed on a daily basis.
- ✚ Generally foods from animal sources such as meat, fish, eggs, cheese and milk are good sources of protein.
- ✚ Vegetable foods such as beans, lentils, nuts, soya, bread, potatoes and cereals also contain protein and it is important to ensure that a wide range of foods are eaten on a daily basis

How much protein?

One the whole most people eat enough protein. To include protein in your diet:

- Try to eat breakfast such as cereal and skimmed milk or egg on toast
- Choose snacks which are good sources of protein such as cold meat in sandwiches/rolls and low fat yoghurts/ low fat milkshakes/sports bars which contain protein
- Eat a meal or snack after training which contains both carbohydrates and proteins such as beans on toast/ pasta with bacon or ham.

Post exercise

The amino acids which make up protein are used by the body to repair muscle after training and to build new muscle to maintain strength. Just as it is necessary to eat some carbohydrates after you finish exercise, it is important to also include some protein as well as carbohydrates after any type of weight training. This will help to refuel you energy supplies (carbohydrates) and re-generate and repair new muscle cells. However if you take extra protein as *supplements* to increase strength please discuss it with me to be sure that you are getting the right amount. It is recommended that during the immediate post exercise period (30mins) a mixture of proteins and carbohydrates are consumed. Choices include low fat milkshakes, fruit and yoghurt smoothies, sports bars which contain protein and carbohydrate

Protein Supplements

What's available?

Protein bars/powders/recovery drinks/shakes and meal replacements

Most of these products are based on whey or soya protein

Are they better than food?

There is no scientific evidence that protein or individual amino acids are any better for athlete's performance or for their health than ordinary protein foods.

How much protein is needed?

Studies have recommended the following levels:

Strength and speed athletes = 1.2 - 1.7g/kg body weight/day

Endurance athletes = 1.2 - 1.4g/kg body weight per day

Can you eat too much protein?

It is recommended that the upper safe limit is 2g/kg body weight per day

What happens if you eat too much protein?

Protein is needed to build and maintain all the cells of the body. Cells are constantly being replaced so protein is needed on a daily basis.

Any excess can not be used for these processes and would either be converted to glucose, if glucose reserves are low, and then used to fuel activity or it is converted and stored as fat. Probably not what you want!

Do you need to drink more if you eat more protein?

It is a good idea to drink plenty anyway but also when eating more protein as when protein is broken down it forms urea in the body which needs to be excreted as urine!

So how much do I need?

	Protein Requirements (g/kg/day)	60kg athlete	65 kg athlete	70 kg athlete	75 kg athlete	80 kg athlete	85 kg athlete	100kg athlete
Strength and speed athlete	1.2-1.7	72-102g	78-110g	84 -120g	90 -119g	96-136g	102 -144g	120-170
Endurance athlete	1.2-1.4	72 -84g	78 -91g	84 -98g	90 -105g	96 -112g	102 -119g	120-140

British Swimming

What does this mean in terms of food?

Here is an example of the foods chosen by an 80 kg swimmer

Breakfast: Cereal with semi skimmed milk and chopped banana

Mid am snack: Tuna sandwich (2 slices)
2 pieces fruit

Lunch: Large jacket potato (225g) with 1 large tin baked
beans and salad
1 low fat yoghurt

Post training
Recovery snack: 500mls sports drink and 6 Jaffa cakes

Evening Meal: Noodles (175g) with tomato/vegetable sauce and
chopped chicken (100g) and stir fry vegetables
Iced bun

Snack: 2 slices toast and jam

This is certainly sufficient for normal training. If you undertake a period of heavy resistance type training and wants to increase the protein content of the diet here is a list of possible foods/drinks/products, What is chosen depends how much protein is needed, other nutrients/amount to be consumed, energy content and availability

Product	Protein (g)	Carbohydrate (g)	Fat (g)	Calories (kcal)
Frijj Milkshake (500mls)	17.5	56.5	5.0	340
Yop Drinkable yoghurt (400mls)	10.8	62	4.0	328
Goodness Shakes	16	45	1.5	248 (banana)
Example of A protein bar (65g)	10	59	8.2	354(choc)
2Hot Cross Buns	11.4	42	2	230
		65.6	3	340

Homemade milk shakes

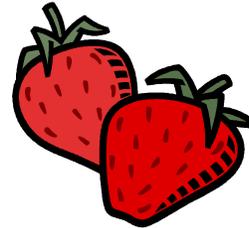
Frothy Banana Shake

2 small bananas, peeled
600mls (1 pint) skimmed milk or skimmed milk powder made up to 1 pint
50g glucose powder
Grated nutmeg (optional)

- Place, bananas, milk and glucose powder in a blender
- Blend on high speed for 10 secs or until smooth and frothy
- Pour into 2 glasses and sprinkle with nutmeg

Preparation time: 2-3 mins

Nutrition per serving: Protein 11g, Calories 290, Carbohydrate 64g, Fat 1g



Super smoothies

Strawberry 1 banana, chopped
 500g , chopped strawberries (fresh or frozen)
 900mls ice cold semi skimmed milk

Peach Melba 1 banana, chopped
 2 peaches, stoned and chopped
 250g chopped strawberries (fresh or frozen)
 900mls ice cold semi skimmed milk

- Place all ingredients in a hand blender and blend until smooth
- Serve in tall glasses

Preparation time: 5-10 mins

Nutrition per serving: Protein 9g, Calories 158, Carbohydrate 25g, Fat 3g

Milk Powder shakes

Skimmed milk powder can also be used to increase the protein content of the diet. It can be added to soups, stews, casseroles, cereals, porridge, yoghurts and fresh milk.

A base for a milkshake can be made by mixing skimmed milk powder (50g) with 500mls semi skimmed milk and a flavoured milkshake powder or syrup or frozen berries (found in many supermarkets)