

What the elite eat

A balanced diet is essential for optimum performance in all sporting activities. What do elite athletes eat to maintain their condition?

What you eat can have an effect on your health, weight and energy levels. Top performers place huge demands on their bodies during both training and competition. Their diets must meet their energy requirements, as well as provide nutrients for tissue growth and repair. Fast food does not meet these requirements, so ditch the McDonald's and

concentrate on a well-balanced diet. A balanced diet should contain 15% protein, 30% fat and 55% carbohydrate. During exercise this percentage needs to change in favour of carbohydrates. Sports nutritionists recommend the following:

- protein 10–15%
- fats 20–25%
- carbohydrates 65–80%

Carbohydrates

There are two types of carbohydrates. **Simple carbohydrates** are found in fruits and are easily digested by the body. They are also often found in processed foods and anything with refined sugar added. **Complex carbohydrates** are found in nearly all plant-based foods, and usually take longer for the body to digest. They are

most commonly found in bread, pasta, rice and vegetables.

Carbohydrates play an important role in the performance of exercise lasting an hour or more. Therefore it is imperative that carbohydrate is consumed before, during and after exercise.

Carbohydrates are no longer thought of just as fuel for muscles. It is now known to be important to take into account the **glycaemic index** (release rate) of different carbohydrates and the consequence this has on *when* they should be consumed in relation to training. Foods with a low glycaemic index cause a slow, sustained release of glucose to the blood, whereas foods with a high glycaemic index cause a rapid, sharp rise in blood glucose. Suitable foods to eat 3–4 hours before exercise include beans on toast, pasta or rice with a vegetable-based sauce, breakfast cereal with milk, crumpets with jam or honey. Suitable snacks to eat 1–2 hours before exercise are fruit smoothies, cereal bars, fruit-flavoured yoghurt and fruit. An hour before exercise, liquid consumption appears to be more important, such as sports drinks and cordials.

Fats

Fats are made from glycerol and **fatty acids**. Each glycerol molecule is attached to three fatty acid molecules. Glycerol and fatty acids contain the elements carbon, hydrogen and oxygen. Fats contain a lot of carbon and this is why they give us so much energy. Fat is an important energy fuel during low intensity exercise but it has to be used in combination with glycogen due to its hydrophobic quality (low water solubility), which inhibits fat metabolism.

Proteins

Proteins are combinations of amino acids. They are important for tissue growth and repair and to make enzymes, hormones and haemoglobin. Generally proteins tend to provide energy when glycogen and fat stores are low.

However, during strenuous activities or sustained periods of exercise, proteins in the muscles may start to be broken down to provide energy.

Fluid

Water constitutes up to 60% of a person's body weight and is essential for good health. It carries nutrients to cells in the body and removes waste products. It also helps to control body temperature. During exercise, water is lost via sweating. The volume of water lost depends on the external temperature, the intensity and duration of the exercise and the volume of water consumed before, during and after exercise. Water is important to maintain optimal performance. Make sure you take on fluids regularly. Sports drinks such as Lucozade Sport and Gatorade can boost glucose levels before competition, while water will rehydrate during competition.

Vitamins and minerals

Vitamins are needed for muscle and nerve functioning, tissue growth and the release of energy from foods. Excessive consumption will not have any beneficial effects because vitamins cannot be stored in the body. Excess amounts are excreted in urine.

Box 1 Pre-match meal: NEC Harlequins Rugby Club

Food

- Chicken breast without skin (preferably poached)
- Vegetable-based sauce served on the side rather than over the dish
- Two carbohydrate sources such as brown rice or wholemeal pasta
- Unglazed vegetables
- Salad without dressing
- Selection of fresh fruit (plenty of bananas)
- Fresh fruit salad and yoghurt
- Scrambled eggs, bacon, baked beans and fresh wholemeal toast
- Porridge, Special K, muesli

Drinks

- Still water, orange or apple juice

Box 2 Pre-match meal: Cardiff City Football Club

Food

- Chicken (boiled or steamed)
- Pasta dish with low-fat tomato-based pouring sauce
- Baked potatoes
- Baked beans
- Scrambled eggs
- Cereals
- Toast and preserves
- Yoghurt
- Bananas

Drinks

- Still water, orange, blackcurrant or lime squash

Minerals assist in bodily functions. For example, calcium is important for strong bones and teeth, and iron helps in the formation of haemoglobin. It is important to get the right balance. Too much sodium (contained in salt) can result in high blood pressure. As with vitamins, excessive consumption is unlikely to enhance performance.

What should you eat before a competition?

To achieve optimal performance in sport it is essential to be well-fuelled and well-hydrated. This means that the importance of a precompetition meal should not be understated. It should be eaten 3–4 hours before competing, to allow the food to be digested and absorbed in order to be useful. The meal should be high in carbohydrate, low in fat and moderate in fibre to aid digestion (foods high in fat, protein and fibre tend to take longer to digest). High levels of carbohydrate will keep the blood glucose levels high throughout the duration of the competition/performance. Suggestions for precompetition meals can be seen in Boxes 1 and 2.

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