



Sport

Nutrition plays a pivotal role in supporting the training

and competition demands of athletes - recreational or elite – in any sport.

Good food choices help make sure you have enough energy, which in turn helps training and aids recovery.

Five Goals of Sport Nutrition

- Mix it up** Eat a varied and well balanced diet that supplies the right amount of energy and essential nutrients.
- Fuel up** Eat plenty of carbohydrate rich foods such as cereals, grains, bread, pasta, rice, fruit and vegetables.
- Strive for five** Eat at least five portions of fruit and vegetables a day – fresh, frozen, dried, canned all count.
- Refuel** Start refueling with carbohydrate foods and fluids as soon as possible after exercise.
- Think fluid** Ensure you are well hydrated by drinking throughout the day as well as before, during and after exercise, as appropriate.

Fuel up - carbohydrates

No matter what your sport, carbohydrates are vital for the best performance. Exercising muscles rely on carbohydrate as their main source of fuel. The amount

Estimated carbohydrate needs for athletes based on activity level

Activity or timing	Recommended intake (per kg body weight each day)
3 - 5 hours a week	4 – 5g
5 – 7 hours a week	5 – 6g
1 – 2 hours a day	6 – 8g
2 + hours a day	8 – 10g

*Although general requirements can be provided, carbohydrate intakes should be fine tuned with individual consideration of total energy needs, specific training needs and feedback from training performance.

you need will depend on your training programme and dietary goals. In general, the more intense the training programme, the more carbohydrate you need to include in your diet. A diet low in carbohydrate can lead to a lack of energy during exercise, early fatigue, loss of concentration and delayed recovery.

Carbohydrate is stored in muscles as glycogen. The body's stores of glycogen are limited and need to be topped up each day. The best way to do this is to have a regular meal/eating pattern which includes a low fat, high carbohydrate snack or a light meal 2-3 hours before exercise. Then after exercise start replenishing your glycogen stores immediately with a high carbohydrate low fat snack. The most effective refuelling occurs within 0-30 minutes after exercise.

More specifically, aim to consume 1g carbohydrate per kg body weight within the first two hours after exercise. If you are doing only light exercise then 50g carbohydrate should be enough. Your main meal (2-4 hrs after exercise) should also contain plenty of carbohydrate rich foods.

Foods containing 50g of carbohydrate

2 medium- large bananas	15 dried apricots
800ml isotonic sports drink	3 slices thick sliced bread
500ml fruit juice	1 large bowl (60g) breakfast cereal
2 carbohydrate gels	200- 250g cooked pasta/ rice
3 (25g) cereal bars	1 large potato (250g)

What about protein?

Protein is required for building and repairing muscle and plays an important role in how the body responds to exercise.

“ One of the biggest myths is that eating large amounts of protein equates to big biceps! ”

One of the biggest myths is that eating large amounts of protein equates to big biceps! Strength athletes do have higher protein requirement (1.2-1.7 g per kg body weight per day) than endurance athletes (1.2 – 1.4 g per kg body weight per day) who have slightly higher requirements than the general sedentary population (0.80 -1.0 g per kg bodyweight per day). However providing energy requirements are met, a healthy diet will certainly provide enough protein to meet any increased requirements.

Athletes need 5 - 10g of carbohydrate per kg of body weight each day compared to the average person who needs 3 - 5 g per kg body weight per day.

Estimated carbohydrate needs for athletes based on activity level*

Muscle is gained through a combination of resistance training and a diet that contains adequate energy and carbohydrate. If you only concentrate on a high protein intake without enough carbohydrate, then the protein will be used for energy instead of being used to build muscle! Additionally, too little carbohydrate will lead to low energy levels, which will make it very difficult for you to train and perform at your best.

Food Portions Providing 20g* Protein

Food	Portion of Food
Beef, lamb, pork	2 medium slices (75g)
Chicken	1 small breast (75g)
Fish	1 medium fillet/steak (100g)
Tuna in brine	1 small can (100g)
Semi-skimmed milk	1 pint (600ml)
Cheddar Cheese (reduced fat)	2 matchbox-sized pieces (60g)
Low fat fruit yogurt	2 x 200g pots (400g)
Eggs	3 medium eggs
Baked beans	1 large can (400g)
Peanuts	2 handfuls (100g)
Quorn mince	6 ½ tablespoons (165g)

*approximately

TOP TIPS: Carbohydrates

- Choose nutrient-rich carbohydrate foods and add other foods to recovery meals and snacks to provide a good source of protein and other nutrients
- Split your total carbohydrate intake into several meals and snacks throughout the day and always remember to refuel as soon as possible after exercise
- Always have portable choices such as fresh fruit, dried fruit, cereal bars and low fat powdered milk shakes or recovery shakes
- Sports drinks, sports bars and carbohydrate gels can boost your carbohydrate intake around training and competition

TOP TIPS: Protein

- Choose a variety of protein-rich foods. Lean meat, poultry, fish, eggs, milk and milk products such as cheese and yogurt, beans and pulses, quorn, tofu and nuts are all good examples of protein rich foods.
- Protein intake should be distributed throughout the day. Do not let protein dominate all meals, leave enough space on your plate for all the carbohydrate – rich foods and vegetables etc
- Always choose lean meat and low fat dairy products.
- If you are a vegetarian you will need to make special effort to ensure that your diet provides enough good quality protein

Fat

The total amount of fat (in grams per kg body weight each day) you need depends on your total energy requirements, body composition goals and sport. Athletes should follow healthy eating guidelines which focus on consuming moderate amounts of mono-unsaturated and omega-3 fats and a reduction in intake of saturated fats.

The richest sources of monounsaturated fats include olive, rapeseed, groundnut and almond oils, avocados, olives, nuts and seeds. Omega-3 fats can be found in oily fish such as mackerel, fresh tuna, salmon and sardines as well as in flaxseed (linseed), walnuts, soybeans and dark green leafy vegetables.

Think Fluid

Maintaining adequate hydration is essential for performance. Dehydration affects both physical and mental performance – the effects becoming more noticeable as the body gets progressively more dehydrated. It is important to start each training session and competition well hydrated, take on-board appropriate fluids during training and competition and restore hydration levels as soon as possible afterwards in order to replace the water and salts lost in sweating. There are a few simple yet effective ways of assessing hydration status such as keeping track of body weight on a daily basis, (i.e. estimating fluid losses during exercise) and monitoring changes in urinating habits - urine colour, frequency and volume. The choice of drink depends on intensity, duration of exercise and your training goals. In general:



- Low to moderate intensity exercise that lasts less than an hour i.e. when sweat losses are low → WATER
- Moderate to hard sessions that last longer than an 1 hour i.e. when sweat losses are greater → Isotonic sports drinks or a home-made sports drink (200ml squash [not low calorie], 800ml water and a large pinch of salt).

Supplements

In general a balanced diet will provide the nutrients and energy necessary for sport. However, there are some sports where it may be beneficial to take a supplement (e.g. strength athletes may choose to take creatine). Athletes interested in using a supplement should consult an accredited sports dietitian to ensure they use the supplements safely and appropriately. For more information see www.sportsdietitian.org.uk

Conclusion

It is crucial to get your food and fluid intake right if you want to train harder, go faster and recover quicker from training sessions and competitions. In summary, eat the right amount of food for your activity level, make sure you eat a range of foods to meet the 'five goals of sports nutrition', but most of all – enjoy your food! View our other fact sheets on Carbohydrates, Fluid and Fat - Getting the Balance Right or www.sportsdietitians.co.uk. For further advice and to find a qualified sports nutritionist visit the Sports and Exercise Nutrition website:

SENr
The Sport and Exercise Nutrition Register

www.senr.org.uk

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