BDA The Association of UK Dietitians

Food Fact Sheet

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

1. Mix it up – Eat a varied and well-balanced diet that supplies the right amount of energy and essential nutrients.

2. Fuel right – Choose a variety of food including foods that contain carbohydrates based on the amount of exercise

3. Strive for five – Eat at least five portions of fruit and vegetables a day; fresh, frozen, dried, canned all count.

4. Refuel – If you need to recover quickly then start refueling with carbohydrate foods and fluids as soon as possible after exercise

5. 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 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. In general people who do regular intense training should make sure they get enough food energy, which includes from carbohydrate as well as not forgetting the importance of fluid. If the right amount of food and fluid is eaten and drunk before, during and after exercise, performance can be maximised during exercise and recovery after exercise supported.

Carbohydrate is stored in muscles as glycogen. The body's stores of glycogen are limited and need to be topped up each day, particularly if you are exercising each day or exercising at a high intensity.

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 two to three 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.

Foods containing 50g of carbohydrate

2 medium- large bananas	15 dried apricots
800ml isotonic sports drink	2 slices thick sliced bread
500ml fruit juice	1 large bowl (60g) breakfast cereal
2 carbohydrate gels	150-160g cooked pasta/rice
3 (25g) cereal bars	1 large potato (250g)

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.

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! Strength athletes do have higher protein requirement (1.2-1.7g per kg body weight per day) than endurance athletes (1.2-1.4g per kg body weight per day) who have slightly higher requirements than the general sedentary population (0.8-1.0g per kg bodyweight per day). Providing energy requirements are met, a healthy diet will provide enough protein to meet any increased requirements. Studies show that the addition of 15-25g of protein to a post-workout meal or snack can boost glycogen storage, reduce muscle soreness and promote muscle repair. Depending on your goals, if you are training at a high intensity you may benefit from a recovery snack that contains protein.

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 (cooked weight)	2 medium slices (75g)
Chicken (cooked weight)	1 small breast (75g)
Fish (grilled)	1 medium fillet/steak (100g)
Tuna/salmon (tinned)	1 small can (100g)
Semi-skimmed milk	1 pint (600ml)
Low-fat cottage cheese	half a 300g pot (150g)
Low fat yoghurt	200g pots
Eggs	3 medium eggs
Baked beans	1 large can (400g)
Unsalted nuts or seeds	2 handfuls (100g)
Quorn mince	6 ½ tablespoons (165g)

*approximately

Top tips

Carbohydrates

- Choose a variety of food including foods containing carbohydrate, based on amount of exercise
- Split your total carbohydrate intake into several meals and snacks throughout the day
- Plan and prepare to fit your eating in around your training
- If you are training for multiple hours or at a very high intensity sports drinks, sports bars and carbohydrate gels can boost your carbohydrate intake around training and competition

Protein

- Choose a variety of protein-rich foods. Lean meat, poultry, fish, eggs, milk and milk products such as cottage cheese and Greek yoghurt, beans and pulses, quorn, nuts and seeds are all good examples of protein rich foods.
- Protein intake should be distributed throughout the day. 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.

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.

Summary

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. 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.

Further information: Food Fact Sheets on other topics including Carbohydrates, Fluid and Fat are available at **www.bda.uk.com/foodfacts**

To find a qualified sports and exercise nutritionist visit the Sports and Exercise Nutrition website **www.senr.org.uk**