

## Cystic Fibrosis and sports nutrition

### Exercise and diet: getting the right balance

Exercise helps people with Cystic Fibrosis (CF) to clear mucus and increase lung muscle strength. It also strengthens bones and makes you feel good.

Regardless of the type of sport or exercise you do, what you eat and drink is important. Exercise increases energy, fluid and salt needs so it is important to increase the amount you eat. This material will help you to understand the food and drink requirements before, during and after exercise.

If you have cystic fibrosis-related diabetes (CFRD) you should discuss your exercise programme with your Dietitian and Physiotherapist. They will help you to understand the effects of exercise on your diabetes and give you more specific advice.

### Fluids and hydration in sport

Most exercise causes the body to become warmer. Our body responds by making sweat to cool us down. People with CF tend to lose more salt in their sweat than those without CF. It is important to have an adequate salt and fluid intake to prevent dehydration. This is very important when exercising for long periods or in warm weather.

### How much fluid do I need?

Most people need about 2-3 litres of fluid per day to remain fully hydrated. You can lose 0.5-1.5 litres of sweat per hour during exercise, and even more in hot weather. General guidelines recommend:

- Drinking 500-600ml of fluid two hours prior to exercise
- Having a small drink of 150-350ml immediately before exercise
- Aiming to drink 150-200ml every 15-20 minutes during exercise.

## What should I drink?

Isotonic sports drinks (e.g. *Powerade*, *Lucozade Sport*, *Gatorade*) are absorbed into the body as fast or faster than plain water. Research has proven these drinks to be beneficial for people with CF. They are especially good when exercising in warm weather.

Drinks like fruit juice and soft drinks are not an effective way to rehydrate. Stimulant drinks (e.g. Red Bull, V, Mother) have additives like caffeine and taurine, which claim to give you “energy”. However, there is no proof that these drinks improve sporting performance and should be avoided.

### Key points on fluid intake:

- Start exercise fully hydrated
- Drink before you feel thirsty
- Water is enough to replace fluid loss during low intensity exercise lasting less than 30 minutes
- Isotonic sports drinks are useful to replace salt, fluid and energy
- Additional salt supplementation (e.g. salt tablets, *Glucolyte*) may be needed for prolonged exercise or activity in warm weather
- Avoid carbonated drinks which can cause stomach upset
- Start rehydrating immediately after exercise
- Watch out for the signs of dehydration like tiredness, dry mouth and headache.

## Food for energy

Whenever you exercise you need energy or fuel. This energy comes from the carbohydrate and fat in our diet.

**Carbohydrate** is the most important fuel for an active person. It is stored in the liver and muscle as glycogen. These stores are used during exercise when energy is needed quickly. When you run out of glycogen stores you will start to feel tired. This will affect your performance. Eating starchy foods at all mealtimes (e.g. cereals, breads, grains, pasta), and having carbohydrate snacks (e.g. fruit, fruit juices) will help to top up your glycogen stores. Sugary foods like soft drinks and biscuits are also an important part of the CF diet and can provide additional calories to meet the needs of exercise.

## **How much carbohydrate do I need?**

This will depend on how hard and how long you exercise. If you are exercising for more than one hour a day, you may need to increase the amount of carbohydrate at mealtimes and as snacks.

Ideas for high carbohydrate snacks before and after exercise include:

- milkshakes, smoothies
- yoghurt
- cereal bars
- sandwiches (e.g. jam), fruit buns, bagels, crumpets and muffins.

## **What about fat?**

Fat is converted into energy more slowly than carbohydrate. Having fat in your diet will also help you to meet your energy needs.

## **What about protein?**

Protein rich foods like meat, fish, cheese, eggs, nuts and tofu are not the main source of energy for exercise. Protein in the diet helps gain muscle, in combination with strength and resistance exercise.

## **Are protein supplements necessary?**

If you are eating enough food to meet your energy needs for exercise, it is likely you will be eating enough protein too. Drinking plenty of milk/milkshakes with added milk powder will have a similar effect to drinking protein supplements and will cost you less. Ask your Dietitian for more details.

## **What about other sports foods and supplements?**

Sports supplements are not normally required if you are eating a balanced diet. Always talk with your Dietitian or Doctor before taking any sports supplements. They may contain substances that interact with medications.

If participating in endurance events, special sports foods such as energy and carbohydrate gels may be of benefit. Creatine is a sports supplement growing in popularity. It is a natural compound found in meat and fish. Researchers are currently looking at the benefits of Creatine supplementation to improve muscle strength in CF.

## **Eating before and after exercise**

Ideally you should eat a well-balanced meal two to three hours before exercising and a light carbohydrate snack one hour before exercise.

As soon as you have finished exercising, start refuelling your energy stores with high carbohydrate snacks. Follow with a full meal within two hours of exercising.

It is essential that you discuss your training schedule with your Dietitian so that a suitable diet can be planned for you. This will ensure that you maintain your weight and keep well hydrated. It will also see you perform and recover well after your training sessions!

**For further information contact your Dietitian or Cystic Fibrosis Centre:**

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