



# Dietary Advice for Exercise and Sport

## What are the benefits of exercise?

Exercise is important for everyone but especially if you have cystic fibrosis. It can:

- help to clear the mucus from your lungs
- can help slow the rate of decline in lung function or improve it
- increase your muscle mass, improve your appetite and therefore your weight
- generally make you feel better
- reduce the risk of depression.

Good nutrition is an important part of your treatment for CF, and increasing your exercise may lead to a change in the amount of nutrients you need - including calories and protein.

The right training programme and diet regime can make improvements to your muscle mass and strength, and overall health and fit-

## Carbohydrates

Carbohydrate is the first nutrient to look at, as without an adequate carbohydrate intake you won't have the energy to exercise.

Carbohydrates are classified as **sugar** and **starches**.

The body stores carbohydrates in the muscles and liver. During exercise, this carbohydrate is released, giving you the energy to exercise.

These energy stores are mainly used to fuel short intense bursts of exercise such as a weight training set in the gym or a short sprint.

As you continue to exercise the body then uses a mixture of fuels – carbohydrate from liver stores and the body's fat stores. Therefore, for a mixed intensity exercise session, such as going to the gym, or an exercise class, the body will use a mixture of fat **and** carbohydrate for energy.



## Sugars

The simplest form of carbohydrates, such as sweets and sugary drinks.

These will give you an instant source of energy as they are quickly absorbed by the body.

## Starches

Complex carbohydrates for example bread and pasta.

These take longer to absorb and therefore release energy slowly.

**Information for Patients**

**Respiratory Directorate—Cystic Fibrosis**

## Fuelling before, during and after exercise

**BEFORE YOU EXERCISE:** It is important to eat carbohydrates before exercising as this will improve your performance and endurance. It is recommended you eat 2-4 hours before exercise.

**DURING EXERCISE:** You will only need to take on additional carbohydrate during exercise if this lasts for more than 2 hours e.g. marathon running, strenuous hiking.

Ideal sources of carbohydrate for during exercise are sports bars, drinks and gels. Please ask your dietitian for more detailed individualised advice on this.

**AFTER YOU EXERCISE:** It is essential you replace your muscle energy stores within 2 hours of ending your exercise session by consuming a carbohydrate rich meal, drink or snack.

This is because immediately after exercise, the muscles and liver are more effective at storing carbohydrate and this will help fuel your next exercise session more efficiently.

### Meal and snack ideas pre and post exercise

Before Exercise Snack Ideas	After Exercise Snack Ideas	After Exercise Meal Ideas
1 large banana and 1 pint milk	1 large banana and 1 pint milk	Jacket potato with filling e.g. tuna/beans/cheese
Large toasted tea cake or bagel	1-2 pots yogurt	Pasta or rice with meat/fish/ e.g. spaghetti bolognese/chilli con carne/tuna/chicken and
Bowl of cereal and milk	1 bagel with cheese spread	Beans on toast (x2 slices toast)
Sandwich/roll with filling	Sandwich/roll with filling	Fish fingers, chips and beans
500ml fruit juice	15 dried apricots with nuts	2-3 scoops mash potato with fish/sausages/pork chop and vegetables
Medium size jacket potato with filling	1-2 Nutri-grain bars and glass of milk	Pasta based ready meal e.g. lasagne/spaghetti carbonara/macaroni cheese
Small tin spaghetti hoops with 2 slices toast	Bowl of cereal with milk	Curry (meat or lentil) and rice

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### Respiratory Directorate—Cystic Fibrosis

## Protein

Protein is needed by the body for the growth and creation of new tissues (e.g. muscles) and for the repair of damaged tissues.

Protein can be used as an energy source if there is not enough carbohydrate or body fat available. Therefore it is important to have an adequate intake of carbohydrate when exercising to prevent the body using any muscle as an energy source.

A protein food should be included in each meal. Protein is found in:

- meat
- fish
- eggs
- milk
- nuts, beans, lentils and pulses
- Soya products



When you are exercising on a regular basis, you will need to eat more protein. However, how much protein you need will depend on:

- what type of exercise you are doing
- how frequently you are doing it.
- how long you are exercising for
- intensity of the exercise

Generally, you only need a small increase in your protein intake and by including a good quality protein food in each meal (from the list above) and some protein in your snacks, you will meet your increased protein needs.

However, if you are training for a specific event ask your dietitian for more specific recommendations.

*Consuming enough carbohydrate will give you the energy for a good workout. This ensures the body uses protein more effectively, which will help with improving your muscle mass*

## Protein supplements—do I need them?

It is essential to make sure your diet is nutritionally adequate before you consider protein shakes or supplements. Even then, they are unlikely to be needed as you can manipulate your diet to include more protein.

Take a look at the table below. It gives an example of a days food intake and the protein intake. As you will see, it is easy to incorporate protein into your diet without protein supplements.

Meal	Protein	
Breakfast: 1 scrambled egg made with full fat milk, 2 slices toast	16g	
Mid morning: 35g nuts, 1 glass milk	15g	
Lunch: tuna mayonnaise sandwich, (1/2 small tin) yogurt, chocolate bar	25g	
Mid afternoon: 1 portion cheese e.g. Babybel, cheese string	5g	
Evening meal: ready meal – lasagne	23g	
Supper: milky hot chocolate, bowl of corn-flakes + milk	19g	Total 103g

As long as you are eating a balanced diet and include a good variety of protein sources, protein shakes and protein supplements are not necessary. Not only are they expensive to keep buying but the excess protein you are consuming has no benefit and increases the work to your kidneys.

## The cost of protein supplements

The tables below compare the price and nutritional content of protein supplements\* available to buy to everyday food. As you will see, choosing the appropriate food will not only provide very similar amounts of nutrients (if not more), it is also a lot cheaper!

### Protein Bar vs. Food

*Precision Engineered Protein Flapjack Bar*

287kcal, 18g protein, 40g carbohydrate, cost £1.79 per bar

*1 pint whole milk + 1 banana*

439kcal, 20g protein, 41g carbohydrate, cost 57p

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#### Protein Snack Ball vs. Food

*Bounce Energy Ball*

178kcal, 9g protein, 18g carbohydrate, cost £1.99 per ball

*Tuna + mayonnaise roll*

365kcal, 32g protein, 25g carbohydrate, cost 69p

#### Protein Supplement vs. Homemade Supplement

*Precision Engineered Whey Protein Powder (1 scoop + 125ml milk)*

192kcal, 27g protein, 29g carbohydrate, cost 81p per drink

*Homemade milkshake (recipe below)*

516kcal, 25g protein, 68g carbohydrate, cost 72p per drink

*\*These are examples of protein supplements, alternatives are available*

## Milkshake recipe

Having a milkshake after exercise is just as beneficial as and much more nutritious than a protein shake – and cheaper too! Why not try the following recipe. You can even add ice cream for extra calories!

### Post work out recovery drink:

400ml full fat milk

2 heaped tablespoons skimmed milk powder

2 heaped tablespoons flavoured milkshake powder

1 table spoon sugar

Pinch of salt

Place all the ingredients in a sports bottle and shake well. If adding ice cream, place all ingredients in a blender and blend until smooth.



*Protein supplements will have little effect on your sporting performance if your diet is not nutritionally adequate. Even then, supplements are unlikely to be needed. Take a food first approach!*

## Fluids and hydration

When you exercise you lose fluid and salt through sweating therefore it is important you stay well hydrated and take salt tablets if these are required.

If you become dehydrated it can put extra strain on your heart and lungs and they have to work harder to pump blood around your body.

It is recommended you drink about 2-3 glasses of fluid 2-3 hours before exercising. To check if this is enough and your hydration status, check the colour of your urine – if it is dark in colour it suggests you are dehydrated and need to drink more.

During exercise, it is important to replace the fluid lost in sweat so remember to take a bottle of water with you.

If you are exercising for more than 1 hour, an isotonic sports drink may be beneficial. These provide a source of carbohydrate (energy) and electrolytes (sodium, potassium, magnesium). You can buy these drinks e.g. Powerade, Lucozade Sport, but alternatively you can make your own:

### Isotonic drink recipe:



200ml squash (full sugar)

800ml litre of water

Large pinch of salt (1/4tsp) – this can be adjusted for personal taste/needs

Mix together and cool

After exercise, you should continue to drink regularly. Milk and milkshakes are an ideal post work out drink – not only do they provide protein and carbohydrates, they also provide fluid. By drinking milk or a milkshake, you are more likely to maintain an adequate hydration state.

See the recipe in the protein section for a post work out milkshake.

## Key points

1. Ensure you eat carbohydrates before and after exercise
2. Protein shakes and protein supplements are not necessary. You can easily meet your protein requirements through your diet
3. Remember to stay well hydrated and take salt tablets. Signs of needing more salt or inadequate hydration include salty/gritty skin, muscle cramps, feeling tired/lethargic, headaches, nausea and dark coloured urine
4. If you need any further advice or recipe ideas, speak to your dietitian
5. If you have diabetes, refer to the information sheet 'Cystic Fibrosis Diabetes and Exercise' for more specific information on how to control your blood sugars during exercise

## Information for Patients

### Respiratory Directorate—Cystic Fibrosis

#### Contact us:

If you have any questions or concerns regarding this information, please contact one of our CF Dieticians on :- 0121 424 1796/0121 424 1788 / 0121 424 2000 bleep 2425/2944/2734 , mobile 07794 375776 or email:

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We keep personal and clinical information about you to ensure you receive appropriate care and treatment. Everyone working in the NHS has a legal duty to keep information about you confidential.

We will share information with other parts of the NHS to support your healthcare needs, and we will inform your GP of your progress unless you ask us not to. If we need to share information that identifies you with other organisations we will ask for your consent. You can help us by pointing out any information in your records which is wrong or needs updating.

#### Additional Sources of Information:

Go online and view NHS Choices website for more information about a wide range of health topics <http://www.nhs.uk/Pages/HomePage.aspx>, [www.cysticfibrosis.org.uk](http://www.cysticfibrosis.org.uk), [www.heartlandscf.org](http://www.heartlandscf.org)

#### You may want to visit one of our Health Information Centres located in:

- Main Entrance at Birmingham Heartlands Hospital Tel: 0121 424 2280

- Treatment Centre at Good Hope Hospital Tel: 0121 424 9946

Clinic Entrance Solihull Hospital Tel: 0121 424 5616

or contact us by email: [healthinfo.centre@heartofengland.nhs.uk](mailto:healthinfo.centre@heartofengland.nhs.uk).

#### Dear Patient

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Patient Information Feedback email: [patientinformationleafletfeedback@heartofengland.nhs.uk](mailto:patientinformationleafletfeedback@heartofengland.nhs.uk)

*If you wish to make any other comments this can be done through the links listed below:*

*Patient Opinion:* [www.patientopinion.org.uk](http://www.patientopinion.org.uk)

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Be helpful and respectful: think about what people might want to know about our patient information and this hospital and how your experiences might benefit others. Remember your words must be polite and respectful, and you cannot name individuals on the sites.

