

## Department of Respiratory Medicine

# Cardio-Pulmonary Exercise Test

This leaflet explains more about cardio-pulmonary exercise testing (CPET) and why your doctor or healthcare team has requested that you have this test. CPET, sometimes referred to as a stress test, provides us with information about your breathing and heart during physical activity. It is typically requested for two different reasons:

1. Other tests have not provided a cause to explain your breathlessness, or their findings do not match the degree of breathlessness you are experiencing. This may be because the tests you have already performed have been whilst you are resting, so we need to see what happens when you exert yourself.
2. As part of an operation assessment, where the surgical team need to plan how best to manage you before and after any procedure. It will also help them identify and understand the relationship between any operation risk and the benefits you may get by undergoing the procedure, and they can then discuss this with you as part of your consent.

### What does the test involve?

The whole session typically takes one hour from start to end. There is a set-up stage, an exercise stage and a recovery stage.

#### Set-Up Stage

We will ask you to do a simple breathing test (spirometry) and your blood pressure will be measured. You will need to have stickers and wires applied to your chest (12-lead ECG) to monitor your heart rate and rhythms, so we may remove any chest hairs that might interfere with capturing these signals. We will check it is safe to proceed, and then you will be asked to sit on an exercise bike and begin the exercise stage.

#### Exercise Stage

You will have a mask fitted to you which covers both your nose and mouth, which measures the amount of air that you are breathing in and out, as well as the oxygen and carbon dioxide levels. The exercise will usually be done on an exercise bike, but if you cannot manage this, you may be asked to walk on a treadmill instead.



You will start at a very easy level which will slowly get harder until you are exercising as hard as you can, about 8-12 minutes after starting. During the test you will be closely monitored and frequent blood pressure readings will be taken. You do not have to worry about your fitness; you will only exercise as much as you are able to and when you cannot do any more the exercise stage will stop.

## **Recovery Stage**

After you stop exercising, you will be monitored for *at least* 10 minutes to ensure that your heart rate, ECG and blood pressure measurements return to normal, and that you feel comfortable to leave.

## **What are the benefits of performing this test?**

CPET is a non-invasive objective test which provides very valuable information about how your heart, lungs and muscles respond to gradually increasing exercise. This lets us see how well all these systems work together under pressure, which gives more information than testing each system separately when you are resting. The results of the test will be used to help provide a diagnosis for your problems, or to assess your suitability for a treatment or operation.

## **What are the risks of performing this test?**

It is important to remember that CPET involves exercising as hard as you can, so it is expected that you will get out of breath and will feel tired. Other symptoms you may have are dizziness or fainting, abnormal blood pressure changes, lower blood oxygen levels or abnormal heart rhythms. Serious complications, such as a heart attack or stroke, are extremely rare. You will be monitored very closely throughout the whole time you are being tested and if there is any risk to your wellbeing we will stop the test immediately.

These days, over 15,000 CPETs are performed every year in the UK. It is generally considered a safe procedure, and studies from around the world have shown that complications happen in about 2 per 1000 tests (0.2%). Serious complications resulting in hospitalisation happen in about 1.2 per 10,000 tests (0.012%), and there is a mortality rate of about 2-5 per 100,000 tests (less than 0.00005%).

On the positive side, the team conducting the test will be experienced at performing this test and will be led by senior staff. They will adhere to safety recommendations and national/international guidelines, and this will help to reduce the risks significantly. You can also change your mind about doing the test at any point, including asking to stop while the test is happening.

## **Pre-test preparation**

Please do not do any form of exercise on the day of the test and be well rested. Do not have any caffeine or alcohol on the day of the test. Do not smoke for eight hours before the test. Please do not wear any nail varnish or false nails, and do not put any body lotions or moisturiser on your upper body on the day of the test.

## **Clothing**

Ideally you should wear comfortable, loose-fitting clothes and shoes suitable for exercise. If you are wearing any necklaces, watches, or bracelets, we will need to remove these prior to beginning any exercise. They will stay in the room with you throughout the test and be returned at the end.

We will ask you to remove your upper body clothing so that we can apply the ECG leads. Some people are then happy to remain like this for the duration of the test, but if you would prefer to cover up you can wear a loose-fitting top, or we can provide a gown.

We do not have any shower facilities for you once the test is complete so you may wish to bring a change of clothes for after the test.

## **What should I eat and drink on the day of the test?**

Please eat and drink normally on the day of the test, but we ask that you do not eat anything after two hours before the test, so you are not overly full.

This will ensure that you are not bloated or uncomfortable whilst exercising. We would encourage you to maintain hydration by drinking water throughout the day, and please bring some for after the test.

### **Should I take my usual medication on the day?**

Please take all your routine/normal medications as usual on the day and bring along a medication list with you, as well as a list of any drug allergies you may have. Please also bring along any rescue medications that you may have (such as inhalers like salbutamol or under-the-tongue nitro-lingual sprays).

### **After the test**

We ask that you do not exert yourself for the rest of the day and avoid doing any strenuous activities. Should you develop any unusual or worrying symptoms, such as being dizzy or faint, having palpitations or racing heart, chest tightness, pressure or pain radiating into the arms or jaw, or being unusually short of breath, you should dial 999 and request an ambulance or attend the nearest Emergency Department. Explain that you have undergone an exercise test that day and inform them of your symptoms. The emergency team may not necessarily bring you in to the hospital, but they will be able to assess you to ensure that you are safe.

### **When will I know the result?**

It takes about an hour to analyse all the data from the test, so a report is usually available within two working days of the test being completed. The report will be sent to the doctor or team who referred you for the test and the results and their implications will be discussed with you by them. This may be in the form of a telephone call, a face-to-face consultation or by letter.

### **Contact Numbers**

We hope that you have found this information useful. If you have any questions or are worried about anything, please speak to the following Dorset County Hospital Staff:

Respiratory Clinical Physiologists: **01305 255 420**

### **Useful Websites**

- Association for Respiratory Technology and Physiology: [www.artp.org.uk](http://www.artp.org.uk)
- British Lung Foundation: [www.blf.org.uk](http://www.blf.org.uk)
- Perioperative Exercise Testing and Training Society: [www.poetts.co.uk](http://www.poetts.co.uk)

### **About this leaflet:**

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If you have feedback regarding the accuracy of the information contained in this leaflet, or if you would like a list of references used to develop this leaflet, please email [pals@dchft.nhs.uk](mailto:pals@dchft.nhs.uk)



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