

Cardiopulmonary exercise testing (CPET)

What is it?

It is an exercise test whereby your rate of breathing, carbon dioxide production, oxygen uptake, blood pressure, oxygen blood level (saturation) and electrocardiogram (ECG) will be recorded.

Why is it done?

A cardiopulmonary exercise test is often requested to evaluate disease progression in patients with heart or lung disease. It can be used in making a decision as to whether breathlessness is related to the heart or lungs, or in quantifying the risk of planned surgery. It can be used to track your exercise capacity over time.

How is it also done?

Your height and weight will be measured and an opportunity will be given for you to change into exercise clothing and running shoes. A member of staff will prepare the areas of your chest where electrodes are going to be attached with a wipe and some fine sandpaper. 10 electrodes will then be attached to your chest and a blood pressure cuff fitted on your arm. Do inform us of any skin conditions that may need a different approach to ensuring good electrode contact.

Women are usually allowed to keep their bra on and wear a loose T-shirt or blouse after the electrodes are attached. You will be asked to perform a breathing test to determine your lung volume. This is later used to determine how short on breath you become during exercise.

A mask will then be placed on your face with a tube leading off it. This does not restrict your breathing. It is very important that the mask will make a good seal with your face and for this reason men are advised to remove any facial hair before attending. If you do not wish to remove your facial hair, some gel can be used to make a seal instead. However, this does not always give satisfactory results and in some occasions we might not be able to undertake the test. If needed, different sized masks can be used to ensure a good seal. With the mask in place, you will be able to talk, but are advised not to once the test has started as this could affect the measurements taken.

A sensor will be placed on one of your fingers before and after exercise, to measure the oxygen saturation in your blood.

After this, there will be a period of a few minutes where you will be asked to sit down and relax to calm down your breathing before the test is started.

The exercise will be done using a treadmill that will start slowly, but increase in speed and incline throughout the test. The protocol for the treadmill is chosen so that you reach your maximum exercise capacity anywhere between eight and 12 minutes of exercise. In some circumstances a stationary bike is used instead of the treadmill.

Information for Patients

During the test we will communicate using closed questions that can be answered by using hand gestures or head movements. If you wish to stop the test, please let us know by raising a hand in a stop signal.

After the test there is a recovery period that lasts for at least five minutes. After this, the mask, electrodes and cuff will be taken off and unless you have more tests booked, you are allowed to go home.

The results will be sent to the requesting consultant – no results will be communicated to you after the test.

Like most tests, this test carries a risk. The risk of significant complications is about one in 10,000. This includes the need for hospitalisation and, in extreme cases, a risk of death. You will be asked to verbally consent to this before the test is started.

Please also follow these instructions before attending the test:

- Do not eat a heavy meal before the test
- Do not use any stimulants like nicotine, alcohol or caffeine on the day of the test
- If you normally use inhalers, please bring your inhalers with you
- Remove any nail varnish
- Wear suitable flat and comfortable shoes
- Your letter will state if any medication needs to be stopped
- **For women:** please bring a loose T-shirt or blouse to wear during the test. If you are able to run, you are expected to do so and will benefit from a sports bra
- **For men:** if possible remove any facial hair
- Please bring some water to drink after the test; tap water is fine
- The exercise room is small. Please bring no more than one other person to accompany you.

The exercise room is small. Except in exceptional circumstances, no visitor will be allowed to accompany you.

Department address and contact information:

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If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email: interpreting.service@uhb.nhs.uk