

# Cardiopulmonary Exercise Test (CPET)

## For patients being tested at the Ted Rogers Heart Function Clinic

Read this brochure to learn:

- What a cardiopulmonary exercise test is
- How to prepare for a cardiopulmonary exercise test
- What to expect before and during the test

Please read this brochure before your appointment.  
Contact your patient coordinator if you have questions.



Patient Education



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## **What is a cardiopulmonary exercise test?**

A cardiopulmonary exercise test (CPET) measures how your heart and lungs work during exercise. You walk on a treadmill or pedal a stationary bike while wearing devices that measure and record:

- your heart rate
- your blood pressure
- how much oxygen your body uses
- how deep and how often you breathe

The exercise starts easy and gets more difficult over time.

**Important:** It is important to exercise as hard as you can during the test, even if you feel uncomfortable. This gives your health care team the best information when preparing your care plan.

## **Why do I need this test?**

There are many reasons why you may have a cardiopulmonary exercise test. Your health care team may have asked you to have the test:

- to determine the cause of heart, lung and functional problems
- to find your exercise capacity (the maximum amount of effort you can manage when exercising) and create an exercise plan that works for you
- to assess your risk before having a planned surgery
- to understand the severity of heart failure
- as part of a research study you are participating in

If you have heart or lung disease, they may have asked you to have the test to:

- check how serious a respiratory disease (condition that affects your breathing) is, such as chronic obstructive lung disease, pulmonary vascular disease, or cystic fibrosis.

- better understand how lung or heart disease limits your ability to exercise
- better understand your impairment or disability when creating a rehabilitation or exercise plan for you
- see how effective your treatment has been
- see if you need to consider more advanced treatment, such as a heart transplant if you have congestive heart failure

The results of the test help your health care team create the best care plan for you.

### **Who should NOT do a cardiopulmonary exercise test?**

We do not recommend doing a cardiopulmonary exercise test if you:

- have a physical condition that prevents you from walking on a treadmill or pedalling a stationary bike
- are recovering from a sudden illness, such as a cold or flu
- have a chronic medical condition that is not managed, such as symptomatic severe aortic stenosis or uncontrolled asthma
- had a heart attack in the last 30 days
- had an ICD/CRT implant within the last 4 weeks
- have very low blood oxygen levels
- have very high blood pressure
- have an uncontrolled heart rhythm or heart rate problems

Call us before your appointment if you had a recent change in your health that may affect your ability to exercise, including if you are recovering from a sudden illness or injury.

## How do I prepare for a cardiopulmonary exercise test?

### The day of your test

- **Take your medicines** as you normally would.

### Eating before your test

- **Do not eat a large meal within 4 hours of your exercise test.**
- **Consider eating a small meal** (such as half a sandwich and some fruit) if your test starts within the next 2 to 4 hours.
- **Consider only eating a snack** (such as a granola bar, yoghurt, fruit) if your test starts within the next 1 to 2 hours.
- **Consider only drinking liquids** (such as fruit juice, smoothies) if your test starts within the next hour.
- **Do not drink alcohol, coffee, tea or other drinks with caffeine** (Pepsi, Coke). Caffeine is a stimulant that can change how your heart works and may alter the accuracy of your test.

### Activity before your test

- **Do not exercise.** Exercising on the same day of the test can change how your body responds to the exercise test. Since the test measures how hard you are able to exercise, you need to be well rested for best results.
- **Do not smoke or vape.** Smoking or vaping causes your airways to narrow and increases carbon monoxide levels in the blood. Both responses reduce the amount of oxygen delivered to your muscles, which can decrease your performance on the exercise test.

**Important**

## **What to bring**

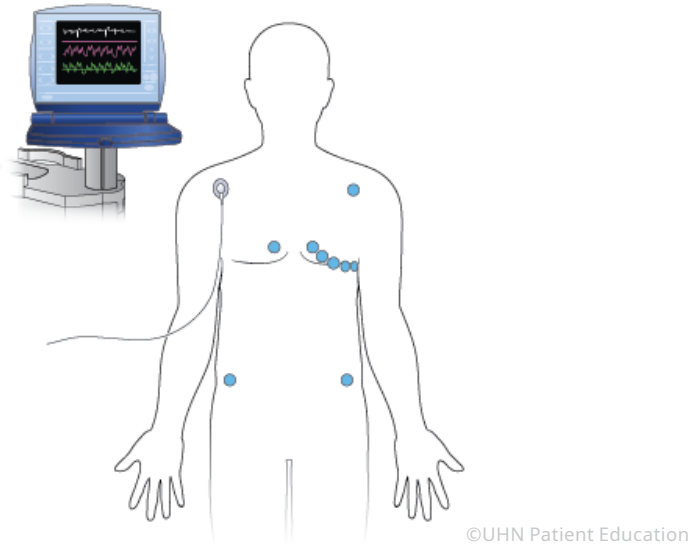
- a list of your medicines
- comfortable running shoes
- a loose-fitting T-shirt if you prefer to wear a shirt during the test
- shorts or comfortable pants you can exercise in
- bottle of water

## **What happens before the test?**

1. You arrive at reception (PMCC Ambulatory Cardiac Clinic) and complete a medical history.
2. You can change into your exercise clothes if you are not wearing them when you arrive.
3. We explain the test instructions and give you time to ask questions.
4. You read and sign a consent form before the test begins.

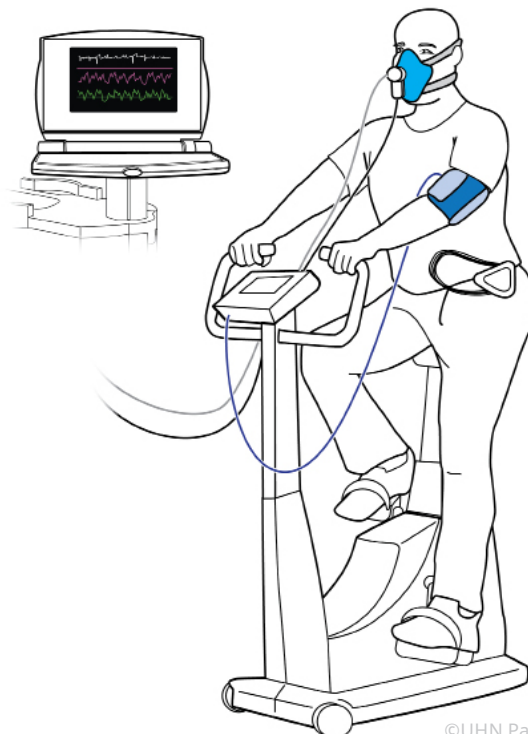
## **What happens during the test?**

1. We do a pulmonary function test to measure how well you breathe and how well your lungs work. This test measures the amount of air that enters and exits your lungs during a single breath.
2. We place electrocardiogram electrodes (wires attached to stickers) on the skin of your chest. Before placing the electrodes, we:
  - use a shaver to remove body hair where the electrodes need to go, if needed
  - wipe the skin with alcohol wipes to remove skin oils
  - buff the skin with a fine sandpaper to remove any dead skin



Where the electrodes are placed

3. We help you put on other equipment you need to wear during the test.
  - We put a blood pressure cuff on your upper arm to measure your blood pressure.
  - We clip a pulse oximeter on your finger or ear. The pulse oximeter measures how much oxygen is in your blood.
  - We put on a mask that covers your nose and mouth with a tube attached. We use the mask to measure how deep and fast you breathe, how much oxygen you breathe in and how much carbon dioxide you breathe out.



Cardiopulmonary exercise test

4. We monitor your heart rate, blood pressure, blood oxygen level, and breathing for 2 to 3 minutes while you are comfortably seated and resting. The doctor uses these resting measures to confirm it is safe for you to start the test.
5. We explain how to do the exercise and answer your questions.
6. We ask you to stop talking and show you how to tell us if you have a problem or need to stop the test. Talking during the test may affect the results.
7. You warm up for 1 to 2 minutes by pedaling the bike with no resistance or walking slowly on the treadmill.
8. The exercise test begins. It typically lasts 8 to 12 minutes.
  - If you are on the bike: as you pedal, we slowly increase the resistance (how hard you have to push the pedals) to make the exercise more difficult.
  - If you are on the treadmill: as you walk or run, we slowly increase the incline (angle) to make the exercise more difficult, as though you are going up a hill.

**We will encourage you to keep going or remind  
you what to do while you do the test.**

9. We turn off the resistance on the bike or reduce the incline and speed on the treadmill when you can no longer continue the test.
10. You keep pedaling or walking slowly until your heart rate and breathing return closer to what they were while you were resting.
11. We remove the test equipment and have you rest in a chair for a few minutes. You may have a drink of water if you need.

### **How long will it take?**

The appointment takes between 60 to 75 minutes. You will be exercising for approximately 15 to 25 minutes, including your warm-up and cool down time.

## **Are there any side effects or risks?**

The side effects or risks of participating in the test are small. For example, the risk of having a fatal heart attack during exercise training in patients with cardiac disease is very low (about 1 person in 115,000).

Please ask your doctor about any unexpected and sometimes serious side effects that are possible.

The clinical team doing your exercise test will watch you closely to see if you start experiencing symptoms or side effects. Many side effects go away shortly after exercise testing is stopped, but in rare cases side effects can be serious and last for some time after the test.

Risks and side effects of the exercise test include:

### **Likely**

- muscle soreness
- fatigue

### **Less likely**

- light-headedness
- muscle or joint injury
- muscle cramps or strain

### **Rarely**

- heart rhythm problems or heart attack
- abnormal blood pressure
- fainting
- nausea



## What problems should I watch for?

It is very rare that a CPET test would cause any health problems once you go home.

If you have shortness of breath or trouble breathing, heart rhythm disturbances, chest pain, or fainting, please call 9-1-1 or go to the nearest hospital emergency department.

## When will I get my test results?

If this test is part of your normal medical care, ask your health care provider when to expect the results from your test and if you will have an appointment to talk to about your results.

If you are participating in research, you may not be able to see your results until after the study is complete.

## For more information

Read your appointment package or booklet to find your appointment details and the phone number to cancel or reschedule your appointment. You can also find this information in your myUHN patient portal account.

Content adapted from American Thoracic Society Patient Education Information Series – Cardiopulmonary Exercise Testing (CPET)



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