

## Exercise Test:

A stress test, sometimes called a treadmill test or exercise test, helps a doctor find out how well your heart handles work. As your body works harder during the test, it requires more oxygen, so the heart must pump more blood. The test can show if the blood supply is reduced in the arteries that supply the heart. It also helps doctors know the kind and level of exercise appropriate for a patient.

### *A person taking the test:*

- Is hooked up to equipment to monitor the heart.
- Walks slowly in place on a treadmill. Then the speed is increased for a faster pace and the treadmill is tilted to produce the effect of going up a small hill.
- May be asked to breathe into a tube for a couple of minutes.
- Can stop the test at any time if needed.
- Afterwards will sit or lie down to have their heart and blood pressure checked.

[Heart rate](#), breathing, [blood pressure](#), [electrocardiogram \(ECG or EKG\)](#), and how tired you feel are monitored during the test.

Healthy people who take the test are at very little risk. It's about the same as if they walk fast or jog up a big hill. Medical professionals should be present in case something unusual happens during the test.

### *A physician may recommend an exercise stress test to:*

- Diagnose [coronary artery disease](#)
- Diagnose a possible heart-related cause of symptoms such as [chest pain](#), shortness of breath or lightheadedness
- Determine a safe level of exercise
- Check the effectiveness of procedures done to improve coronary artery circulation in patients with coronary artery disease
- Predict risk of dangerous heart-related conditions such as a [heart attack](#).

### *What is a stress test?*

An exercise stress test, also called a cardiac stress test, [exercise ECG](#) or stress test, is used to assess the range of ability of the heart. All of us do varying levels of activity in our day-to-day lives. When we are sitting down, the heart isn't working very hard. When we go for a brisk walk or a swim or a run, our heart has to do more work. The idea of an exercise test is to objectively assess how well the heart functions during increased activity. It is a very good way to assess if the heart is healthy.

## **Exercise ECG**

An exercise ECG, also called an exercise tolerance test, is an [electrocardiogram \(ECG\)](#) that is recorded while you are walking on a treadmill or cycling on an exercise bike. The aim of the test is to see how your heart works when you are exerting yourself.

### **What can an exercise ECG show?**

The exercise ECG helps doctors find out if you have [coronary heart disease](#), as it shows whether your heart muscle is getting enough blood from the coronary arteries during physical activity. It can also show if you have been having symptoms of angina as any areas where there is a lack of oxygen to the heart is reflected on the ECG tracing.

Some people are asked to have an ECG after procedures, such as [coronary angioplasty](#).

### **What happens during an exercise ECG?**

1. Electrodes are attached to your shoulders and chest and connected to an ECG recorder.
2. You will be asked to walk on the treadmill or use the pedals on a stationary exercise bike, starting off at a slow, comfortable pace.
3. The test will get gradually harder by increasing the speed on the bike or the incline of the treadmill.
4. You will be encouraged to work as hard as you can, but tell the healthcare professional assessing you if you start getting chest pain or discomfort, or you get tired or very short of breath and the test can be stopped.
5. You will be carefully monitored throughout the test and the technician will tell you when to stop.

The test usually takes around fifteen minutes in total.

### **What if the exercise is too hard?**

An exercise ECG will probably make your heart work harder than normal, but the healthcare professional will not make you exercise beyond your ability.

### **How can I prepare for an exercise ECG?**

- Wear light, comfortable clothes and shoes.
- Avoid having a heavy meal a few hours before the test.
- If you take [beta blocker medication](#) (such as bisoprolol) you will be advised to stop taking it for one or two days before the test as it may affect the result.

### **Do I need to do anything to prepare for a stress test?**

You will need to wear comfortable and appropriate clothing with trainers. You may be advised to avoid drinks with caffeine in, or eating a heavy meal, for two to three hours before the test, so that the measurements are as accurate as possible.

### **What does a stress test involve?**

The test usually involves walking on a treadmill or using an exercise bike. The speed and incline of the treadmill will go up gradually. During the test you are carefully monitored to see what your heart rate and your [blood pressure](#) is doing. We also record the electrical activity of the heart through an [ECG](#). An exercise treadmill test typically goes on for a maximum of 12 minutes. The average duration someone will walk for is around nine minutes.

Sometimes, medicine given by a drip is used to increase the heart's activity instead, for example in patients who cannot walk very well. This type of stress test may also be combined with imaging of the heart to physically see how well the heart is pumping. The imaging may be done with an ultrasound (called a stress [echo](#)) or [MRI](#) (called a stress MRI) or a nuclear scan (called a stress nuclear scan). The principle of all these tests is the same – to increase the workload of the heart and carefully monitor your blood pressure, heart rate and heart function.

### ***Will a stress test hurt?***

It shouldn't hurt at all. Some patients' symptoms may be caused by exercise, so these symptoms may be provoked during this test, but should stop quickly when the test ends.

### ***What are the risks of a stress test?***

Your symptoms will be carefully monitored and the person doing the test will know that they need to stop if any symptoms occur. There is no significant risk from the test, as it will be performed under controlled and monitored conditions. The test would be stopped well before you get to a level of exercise that would cause the heart to struggle.

It's much safer to do a controlled test like this than to run 10km knowing that there might be something wrong with the heart.

### ***Are there any after effects?***

In the vast majority of cases, no. For someone who has a heart condition the test would be stopped before it causes any problems. It might take you 10 or 15 minutes before you get back to normal, but this is just the usual rest period after any type of exercise.

### ***What will a stress test tell my doctor?***

The test is designed to see how well the heart performs under stress. For example, if someone has a narrowing in one of the coronary arteries, that abnormality may show in the electrical tracing that we record during the test.

### ***Is there anyone that a stress test wouldn't be suitable for?***

If we know that someone has a severe cardiac problem then we wouldn't always consider a stress test, but it is suitable for most people.

### ***Will I need further tests after a stress test?***

It's certainly possible that additional tests may be required. A stress test is often used as a screening test. If the result is normal, then typically you won't need further tests. If it's not, you may require further tests, depending on the type of problem identified. A coronary [angiogram](#) is one of the most common follow-up tests.

### ***What are the latest developments in stress tests?***

We are constantly looking to make stress tests more accurate so they can provide more information. This is to reduce the need for additional tests. The latest developments are looking at how we can incorporate different ways of imaging the heart, for example by advanced [MRI](#), so that we can reduce the need for invasive tests, such as coronary angiograms.