



Education

Exercise Test

What is an exercise test?

An exercise test records the electrical activity of the heart on an electrocardiogram and takes blood pressure readings while you walk on an exercise treadmill or pedal a stationary bicycle. The exercise treadmill test (ETT) or stationary bicycle exercise test is used to:

- check for heart disease
- see if treatment for heart disease is effective.

When is it used?

An exercise test is done when your health care provider thinks you might have heart disease. The most common heart disease is caused by narrowing of the coronary arteries. The coronary arteries are the blood vessels that supply blood, oxygen, and nutrients to the heart. The arteries can become narrowed when substances such as cholesterol build up inside the artery.

Many people with narrowing of the coronary arteries have no symptoms when they are at rest. Exercise increases the work of the heart. The heart needs more blood when it works hard. If the supply of blood to the heart cannot keep up with the amount of blood the heart needs, changes in the electrocardiogram will occur. Recording the electrocardiogram before, during, and after exercise shows these changes. The exercise test helps check for narrowing in your arteries.

How do I prepare for the procedure?

- Do not eat for 2 hours before the test.
- Ask your health care provider if you should take your regular medicines before the test.

What happens during the procedure?

Small, sticky patches or suction cups are placed on your back and chest for the electrocardiogram. Blood pressure and the electrocardiogram are recorded while you are resting. You then start a slow walk on the treadmill. The speed and the upward slope of the treadmill are gradually increased. The electrocardiogram is watched constantly, and your blood pressure is measured at each speed increase.

The ETT is stopped if:

- Your electrocardiogram or blood pressure change a lot.
 - Your heart rhythm becomes abnormal.
 - You have chest pain.
 - You become too tired to continue.
 - A set workload is reached. The workload is a target heart rate that is usually at least 85% of the number 220 minus your age.
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How accurate is the exercise test?

The ETT is not a perfect test. Some people with coronary artery disease will have a normal ETT, and some healthy people will have an abnormal ETT.

The accuracy of the ETT can be improved in two ways:

- A radioactive tracer such as thallium or technetium is injected into your arm vein at the peak of exercise. These tracers give about the same amount of radiation as a chest x-ray. The radioactive tracers follow the blood flow in the heart. A detector placed over the chest is used to make a picture of the heart. If there is good blood flow through the arteries, the pictures will show that the heart muscle picks up the tracer. If there is decreased or no blood flow through an artery, the pictures will show heart muscle that is not picking up the tracer.
- An echocardiogram (ultrasound images of the beating heart) is done just before and just after exercise. If you have coronary artery narrowing, your heart's pumping action will not be normal on the echocardiogram after exercise. This is called a stress echocardiogram.

What are the benefits?

Exercise testing is one of the safest and most widely used tests for heart disease in the US. It is a quick way to check your heart's arteries for narrowing or blockage. Your health care provider may use it to help decide whether you need more costly and riskier tests.

What are the risks?

On rare occasions, your heart may go into a very fast rhythm which could cause you to collapse. You may develop chest discomfort during the test. To ensure your safety, your health care provider will supervise the test. Your blood pressure and electrocardiogram are constantly watched. The test team watches for and is able to treat any problems.

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