## What is a stress test?

A stress test is a very commonly performed test to learn:

- How well your heart pumps blood.
- Whether your heart is receiving an adequate blood supply.
- How you perform on physical activity (riding a treadmill or stationary bike) compared with other people your age and sex.
- If your symptoms (chest discomfort, shortness of breath, feeling like your heart is racing or even dizziness) can be reproduced while performing physical activity.

This makes it easier to identify and evaluate certain heart issues, such as:

- Issues with your muscle or valves.
- Adequate blood supply to your heart muscle.
- Electric stability of your heart at rest and during exercise.

Cardiac stress tests help healthcare providers determine whether you need additional — often more invasive — testing to confirm a diagnosis or if treatment might lower your heart attack risk and make you feel better.

## How does a stress test work?

A heart stress test starts by making your heart pump harder and faster. For many people, this includes walking on a treadmill or riding a stationary bicycle. That's why the test is often called an exercise stress test.

Healthcare providers assess your response to the increased workload by measuring:

- Blood pressure.

- Heart rate.
- Oxygen levels.
- Electrical activity in your heart.
- How hard your heart is working compared with others your age and sex.

## Why might I need a stress test?

You may need this test to detect heart problems like:

- Congenital heart disease.
- Congestive heart failure.
- Coronary artery disease.
- Heart valve disease.
- Hypertrophic cardiomyopathy.

People with high-risk occupations (like pilots or professional athletes) may also need stress tests.

## Who should have a cardiac stress test?

This test may be right for you if you have symptoms of heart disease, like:

- Angina, which is chest pain or discomfort due to poor blood flow to the heart.
- Arrhythmia, which is a rapid or irregular heartbeat.
- Shortness of breath (dyspnea).
- Feeling lightheaded or dizzy.

Stress tests are also for people with a heart disease diagnosis who:

- Would like to start exercising.

- Are undergoing treatment and healthcare providers need to determine how well it's working.
- Face a higher risk of complications due to a personal or family history of heart disease.
- Have diabetes or other underlying conditions that increase your risk of heart disease.
- Require non-cardiac surgery and healthcare providers need to assess your risk of complications.

Providers may also do stress tests in people without known heart disease or symptoms to assess their risk for heart disease and heart attacks, especially if they have other risk factors like diabetes, high blood pressure, high cholesterol or a family history of premature heart disease.

## What are the different types of stress tests?

There are many methods for assessing heart function while it's hard at work. All cardiac stress tests involve checking your heart rate, blood pressure, oxygen levels and electrical activity. But there are some differences.

## Stress test types include:

Exercise stress test

This is the most common and basic heart stress test. It involves walking on a treadmill or riding a stationary bicycle. A well-trained exercise physiologist usually tailors the speed and elevation of the treadmill to your ability to walk and your overall fitness.

If you can't exercise, you receive medications that make your heart pump harder and faster or dilate the artery supplying blood to your heart (coronary arteries). An electrocardiogram (EKG) captures your heart's electrical activity. Exercise stress tests check for signs of coronary artery disease.

Exercise stress echocardiogram

An exercise stress echocardiogram is similar to the basic stress test but provides more detail. Healthcare providers perform an echocardiogram (ultrasound of your heart) before and at peak exercise. This cardiac imaging test uses sound waves to evaluate blood flow through your heart as well as the pumping chambers of your heart (muscle) and valve functions.

You might need a stress echocardiogram if the results of your initial stress test are unclear. This study enables healthcare providers to observe blood flow through the heart's chambers as well as the effects of exercise.

- and create a long-term exercise program after you complete rehabilitation.
- Aortic dissection.
- Endocarditis, pericarditis or myocarditis (heart muscle inflammation).
- Recent heart attack.
- Severe aortic stenosis (aortic valve narrowing).
- Uncontrolled abnormal heart rhythm (arrhythmia).
- Ongoing chest pain.

Cardiologists consider your overall health in determining whether a heart stress test is right for you. This determination includes your:

- Age.
- Family history of heart disease.
- Sex.
- Health history.
- Level of physical activity.
- Symptoms.
- Risk factors like smoking, diabetes, high blood pressure and high cholesterol.

## What's important to know about exercise stress testing in women?

People designated female at birth (DFAB) tend to experience heart disease differently than designated male at birth (DMAB). This makes it challenging to detect early-stage heart disease. In general, healthcare providers tailor their stress testing and method of imaging during stress testing based on your sex and age to obtain optimal results and minimize radiation and unclear test results.

## Is cardiac stress testing safe?

If there are no contraindications, exercise stress tests are safe. Very few people experience complications. Trained healthcare providers, typically an exercise physiologist and a cardiologist, are present during your test in the rare event that you have a complication. They assess your performance, data and symptoms throughout the tests and immediately provide emergency treatment if it's needed. You also have the option of stopping the stress test at any time if you become anxious or uncomfortable.