

# 心脏运动负荷测试

## 测试的过程

本讲义是有关承受运动负荷的测试、跑步机负荷超声心动图测试和自行车器械负荷超声心动图测试的解说。它解释了什么是运动负荷测试以及做运动负荷测试的过程。



使用手机摄像头扫描以获取此讲义的数字副本。

## 什么是运动负荷测试？

运动负荷测试可显示心脏在运动过程的运作情况。根据患者的病史和目前症状，医务人员可能安排了以下三项测试之一：

- 运动负荷测试
- 跑步机负荷超声心动图测试
- 自行车器械负荷超声心动图测试
  - 此测试仅为出现某种特定临床“特征”（患者看诊的原因）的患者而预定。将由医务人员指定患者需要做哪个类型的测试。

根据医务人员指定的测试类型，患者在跑步机上行走或**仰卧**（躺着）踩固定自行车器械来做负荷测试。此测试还可能包括在运动前后拍摄超声心动图。

## 为什么医护团队指定做此测试？

医护团队指定做此测试，以便：

- 查清楚患者最近出现的症状是否与心脏有关
- 帮助医护团队管理您的心脏症状和用药
- 测试心脏对运动负荷的承受情况

## 此测试有什么风险？

运动负荷测试的风险很小。运动可能会触发患者最近出现的症状或改变心律。因测试而发生严重受创伤或死亡的风险概率为每 10,000 位患者中有 1 位。

## 测试过程如何？

在测试之前，诊所工作人员会先与患者讨论健康史及出现过的任何症状。请务必告诉工作人员在测试之前、期间和/或之后出现的任何症状。

我们将用心电图（ECG）的导电线及其贴片贴在患者的胸部。心电图导电线是用于监测心律和活动的传感器。我们还会在患者的手臂上放置血压袖带，以便在测试期间监测血压。

如测试包括心脏的超声图像，则可以在运动前、运动过程中和/或运动后立即拍摄这些图像。诊所的工作人员可能会使用 *静脉注射*（IV）药物来帮助更好地看到心脏的状态。

跑步机的速度和/或倾斜度将每 3 分钟增加一次。自行车的阻力（难度）每 3 分钟会增加一次。在测试过程中，患者可能会开始感到非常疲倦或出现其他症状，而想要停止测试。

## 谁可以停止此测试？

如患者的症状变得严重或不舒服，可以随时叫停测试。患者有时会因为下列情况而要求停止测试：

- 气喘
- 疲乏
- 头晕

如诊所工作人员担心患者的健康和安全，就可能会停止测试。如有以下情况，工作人员可能会停止测试：

- 心律失常
- 血压异常
- 人身安全风险
- 不适感过重

## 如何获取测试结果？

测试完成后，心脏病专家（心脏科医生）会审查和诠释结果。他们会将测试结果传发给指定做此测试的医疗服务提供者。医疗服务提供者可能会与患者讨论测试结果，或者放在 MyChart 上供患者查看。

### 您有疑问吗？

我们很重视您的提问或顾虑。如您有任何问题或疑虑，请联系您的医护团队或在运动负荷测试期间与诊所工作人员讨论。

# Exercise Stress Test

## *What to expect*

*This handout is a guide to exercise tolerance tests, treadmill stress echocardiograms, and bicycle stress echocardiograms. It explains what an exercise stress test is and what to expect when you have one.*



*Scan with your phone camera for a digital copy of this handout.*

## What is an exercise stress test?

An exercise stress test shows how well your heart works during exercise. Based on your medical history and symptoms, your healthcare provider has ordered one of these three tests:

- Exercise tolerance test
- Treadmill stress echocardiogram
- Bicycle stress echocardiogram
  - This test is only ordered for specific clinical *indications* (the reason you are being seen). Your health care provider will determine which type of test you need.

Depending on the type of test your provider ordered, you will exercise either by walking on a treadmill or by pedaling a *supine* (lying down) stationary bicycle. The test might also include taking ultrasound images of your heart before and after your exercise.

## Why did my care team order this test?

Your care team may have ordered this test to:

- figure out if your heart is the cause of your recent symptoms
- help your care team manage your heart symptoms and medications
- test how well your heart handles exercise

## What are the risks?

An exercise stress test has very little risk. Exercise may cause you to experience your recent symptoms or change your heart rhythm. The risk of serious injury or death is 1 in 10,000 patients.

## What will happen during the test?

Before your test, you will talk with the clinic staff about your health history and any symptoms you have been experiencing. It is important to tell the staff about any symptoms you experience before, during, and/or after this test.

We will place *electrocardiogram* (ECG) leads on your chest with small sticky pads. ECG leads are sensors used to monitor your heart rhythm and activity. We will also place a blood pressure cuff on your arm to monitor your blood pressure during the test.

If your test includes ultrasound images of the heart, these images may be taken before, during, and/or immediately after exercise. The staff at your clinic may use an *intravenous* (IV) medication to help see your heart better.

The treadmill will increase in speed and/or angle every 3 minutes. The bicycle will increase in resistance (difficulty) every 3 minutes. During the test, you may start to feel very tired or have other symptoms that will make you want to stop the test.

## Who can stop the test?

You may stop the test at any time if your symptoms become severe or uncomfortable. Patients sometimes choose to stop a test due to:

- Shortness of breath
- Tiredness
- Dizziness

The clinic staff may stop the test if they are concerned about your well-being and safety. The staff may stop your test if you have:

- Abnormal heart rhythm
- Abnormal blood pressure
- Risks to your physical safety
- Too much discomfort

## How do I get the test results?

After your test is completed, a cardiologist (heart specialist) will review and interpret your results. They will share your final test results with the healthcare provider who ordered this test for you. Your healthcare provider may talk with you about your test results, or the results may be available on MyChart for you to view.

### Questions?

Your questions are important. If you have any questions or concerns, please contact your care team or speak with the clinic staff during your exercise test.