

Cardiopulmonary Stress Test

A CPX test, or a cardiopulmonary stress test, is a special treadmill often used for people with a form of heart failure. This treadmill not only takes an ECG during exercise, but also measures the gas exchange in your lungs at the same time. Your doctor may ask you to take a CPX test to help determine whether or not you have any cardiac or respiratory limitations during exercise and how well the heart pumps blood to the muscles. This information is needed to determine the best exercise prescription for you.

Wear loose comfortable clothing the day of the test. Also wear comfortable walking shoes or athletic shoes for the test. Eat a light meal the day of the test, and take your medications just like you normally would. An exercise physiologist, a doctor and a nurse will be present during your test.

During the test you will be hooked up to electrodes that will take an electrocardiogram of the heart. You will breathe into a breath analyzer that measures the gas exchange in your lungs. An oximeter will be placed on your finger to determine the percent of oxygen in your blood during the exercise. Your blood pressure and pulse will be taken at regular intervals during the test.

The treadmill starts out at a slow walking pace with no incline. The pace is gradually increased depending on how well you do during the test. If at any point during the test you feel like you have had enough, you can give the "thumbs down" signal to the exercise physiologist and doctor to slow down the treadmill and stop the test.

The results of the test will help your doctor determine a target heart rate for you to work towards when exercising and will help determine the best exercise for you.

Stress Test

Your doctor has ordered a cardiovascular stress test. The purpose of this test is to determine whether your heart gets adequate blood flow during stress or exercise. Prior to the procedure you should avoid caffeinated beverages, and you may eat a light meal up to 2 hours before exercise. It is wise to bring comfortable tennis shoes and loose-fitting pants.

When you arrive for the test, you will be asked to undress to the waist. The skin on your chest will be cleansed and ECG wires applied. You will then be asked to walk on a treadmill until you get too tired to continue or experience symptoms such as chest pain or shortness of breath. A cardiologist and a technologist will be present to monitor your blood pressure and electrocardiogram continuously.

Thallium Stress Test

Your doctor has ordered a thallium stress test. The purpose of this procedure is to determine whether exercise causes a decreased blood flow to the heart muscle. If so, we can determine whether the blood flow improves with rest. This is termed "reversible ischemia". This ischemia can also produce disturbances in your heart rhythm which may not be seen at rest. Prior to the procedure, you should avoid caffeinated beverages and have a light meal. Clear or full liquids would be ideal. You should wear loose-fitting pants and comfortable tennis shoes for the test. When you arrive, you will be asked to undress down to the waist. An intravenous (I.V.) line will be inserted into your hand and ECG wires will be hooked up to your chest. You will then be asked to walk on a treadmill until you experience symptoms such as chest pain or shortness of breath, or until you are too tired to continue walking. A cardiologist and a technician will be present throughout the entire test and will be monitoring your blood pressure and ECG continuously. Approximately one minute before you stop walking on the treadmill you need to let the technician know so that the thallium can be injected. Thallium is an isotope which is "taken up" by the heart. It flows more easily through non-diseased arteries.

The thallium enables blood flow to be seen on a camera. You will be laying on a table with scanners overhead. The pictures take approximately 10-12 minutes to obtain. You will then be asked to return in 3-4 hours for a second injection and more pictures after you've rested. Do not drink caffeinated beverages or eat a heavy meal prior to the second set of pictures.

If you are unable to walk on the treadmill, one of three different drugs may be used to exercise your heart. These are Adenosine, Dobutamine, or Persantine. In this case, the test is the same, except that the drugs are injected over a specific period of time, and you are not required to walk on a treadmill.

Stress Echocardiogram

Your doctor has ordered a stress echocardiogram. This test is ordinarily done to look for evidence of previous heart muscle damage and to find out if there are areas of the heart muscle which have impaired blood supply. You will be asked to fast for about 2 hours prior to the test, and to wear loose-fitting, comfortable clothing and shoes. You will be hooked up to an ECG machine which records your heart

rhythm throughout the test. Ultrasound pictures of the heart will be obtained before exercise, when the heart is at rest. You will then be asked to walk on a treadmill at progressively increasing speeds and angles of incline. Your blood pressure and heart rhythm will be monitored during this time.

When you are very tired, but not exhausted, or you experience more than moderate shortness of breath, chest discomfort, or other significant symptoms, the treadmill will be stopped. You will then be asked to get back onto the ultrasound table as quickly as possible, so that the ultrasound pictures of the heart can be obtained when the heart is still beating rapidly after exercise, within the first minute after exercise is stopped.

The normal response to exercise is for the heart to pump more vigorously. If there are portions of the heart muscle that don't pump as well after exercise, this suggests that these portions of the heart have impaired blood supply. The cardiologist may be able to provide a preliminary report of the results, or may want to study the pictures in more detail before giving a final report.

Occasionally, a stress echocardiogram may also be used to assess the function of one or more of the heart valves with exercise, particularly when one of the valves is "leaky".