

## About Exercise Stress Test

An Exercise Stress Test or Exercise Stress ECG is a walking treadmill test performed primarily to aid in the diagnosis of significant coronary artery disease, and may also assist in the investigation of abnormal heart rhythms.

### Coronary Artery Disease

Coronary artery disease is due to blockages within the coronary arteries, the vessels that supply blood to the heart muscle (myocardium). If a partial blockage is present, the heart muscle may still receive an adequate supply to meet its needs at low levels of exercise, and therefore remain undiagnosed. By exercising, there is an increase in demand for blood by the heart and the partially blocked artery may no longer be able to supply the amount required. This results in lack of oxygen to the heart muscle (ischaemia). Ischaemic heart muscle may cause chest discomfort (angina) and characteristic changes on the electrocardiogram (ECG). These ECG changes along with other clinical information is how the test is interpreted.

### Cardiac Arrhythmias

Some heart rhythm disturbances only occur when exercising. Therefore by performing a stress test certain abnormal heart rhythms may be reproduced and a diagnosis made. Patients with programmable pacemakers may also benefit from stress testing as it is an easy way for the cardiologist to check that the pacemaker responds appropriately when the patient is exercising.

### Preparation

You will be required to wear comfortable walking shoes and fast for 2 hours prior to the test. Take your medicine as usual unless you are told otherwise by your doctor. A gown will be available but it may be advisable to wear shorts or a skirt to walk in. You may have a shower following the test if you wish.

### How is a stress test performed?

A Cardiac technician will first greet the patient and perform the initial setup. The patient will be required to be bare-chested so electrodes can be applied directly to the chest and a blood pressure cuff to one arm. After some initial baseline recordings and measurements the Cardiologist will then supervise the test. Note: If the resting ECG is significantly abnormal then the stress ECG may not be performed, the cardiologist may discuss with your referring doctor an alternative stress imaging test.

The exercise stress test is performed using a set protocol. The standard Bruce protocol for patients of average fitness, the Naughton protocol (which is slower and flatter) for less fit or frailer patients, and the accelerated Bruce protocol for fit patients. The test will start with an easy walk and then progress every 1-3 minutes with an increase in speed and gradient depending upon your level of fitness. Throughout the test the electrocardiogram (ECG) and blood pressure are continually monitored. The stress test continues until the patient can no longer continue due to fatigue, or symptoms (chest pain, shortness of breath, or lightheadedness), or until changes in the ECG or blood pressure indicates a cardiac problem. After the test, the patient remains monitored until any symptoms resolve, and the ECG and blood pressure return to a normal resting state.

## Risks

This is a very low risk procedure, the most common occur in 3:1,000 people and include:

Chest pain which can be treated by stopping the test and administering medication.

Development of fluid in the lungs which will result in the cessation of the test and administration of medication.

An abnormal heart beat or “arrhythmia” which may be treated by stopping the test and may also be treated with or without medication.

There is a risk of heart attack in 1:2,500 people and a risk of death in 1:10,000 people.

If you have a history of previous/recent heart attack, aortic dissection, recent fluid or clots in the lungs, severe heart valve disease, heart arrhythmias, palpitations, or recent increase in chest pain you should advise the staff before you commence the test. You will also be asked to provide a list of your medications so that these can be noted prior to the test.

## Results

A report will be generated by the Cardiologist, this will then go to your referring Doctor, usually on the same day or overnight if done late in the afternoon. You should contact your referring Doctor for your results and any follow up required.