



## **Exercise stress test**

An exercise stress test is performed in many patients with known or suspected heart conditions to determine whether chest pain is due to heart disease or arises from some other cause, such as "indigestion", spinal arthritis or muscular pain. The stress test may be performed on a treadmill or a cycle ergometer with increasing workload. The load is increased on a treadmill by increasing the treadmill walking speed and by increasing the incline. On a stationary cycle the effort is increased by setting a faster cycling speed and/or increased resistance to the pedal movement. The effect of the increasing effort is to increase the work of muscles which, in turn, increases the work of the heart. Increased heart work leads to a faster heart rate and a rising blood pressure.

In medical practice the exercise level is usually increased until the patient can do no more (a symptom limited exercise stress test). In some cases the test is limited by a heart rate target or a given level of exercise, appropriate to a person's age, sex, fitness and clinical state. The test includes monitoring of the heart rate, blood pressure and electrocardiogram.

The test is usually terminated by breathlessness: this provides a marker of general fitness. The test may be stopped because of the development of chest pain (angina pectoris). In that case it implies that the person has coronary heart disease. In some cases the blood pressure may not rise, but may fall. That implies that the heart's function is compromised, such that fainting may occur if the test continues. In some instances pulse irregularity may appear, necessitating that the test is stopped.

Such stress tests are not recommended by most authorities as a screening tool (i.e. to determine whether an apparently normal individual does or does not have heart disease). Stress tests are expensive. They may produce false positive

results (the test suggests heart disease, but the individual does not have heart disease) or false negative results (the test shows no abnormality but the patient does have heart disease). Therefore the test is usually limited to those patients where there is a specific answer required to a specific question, such as whether someone is fit to resume physically demanding work after a cardiac event. The test may help in providing the answer or a probability.

Rather than seek to have a screening exercise test, it is better to discuss your concerns with the family doctor. The doctor will ask about symptoms, check your blood pressure and heart, arrange for blood cholesterol and lipid tests, possibly check your blood glucose level and discuss the risks from smoking, eating fatty foods, being inactive, and being overweight. You may be referred to a cardiologist for further investigation or diagnostic support. As a rule, all of this is much more valuable than having an exercise stress test.

Assessing risk of future heart disease and attending to the risk factors is what we all need to follow. Risk can be much reduced and coronary heart disease progress actually reversed. The vast majority do not need and do not benefit from an exercise stress test, unless there is a specific question to be answered.

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