

The Electrocardiogram and Cardiac Stress Testing

What is an Electrocardiogram? The electrocardiogram (EKG or ECG) is a graphic recording of the electrical potential as generated by the heart.

How does the test work? Signals are detected by attaching metal electrodes to the extremities and chest wall by means of an adhesive. There is no pain or unpleasant sensation associated with this and it usually takes one or two minutes.

Is the Electrocardiogram Safe? The EKG is safe and inexpensive. It may be easily done in almost any setting.

Why is an Electrocardiogram done? The EKG is the primary method to diagnose an arrhythmia (abnormal heart beats), it may also be used in helping to diagnose prior myocardial infarction (scars of the heart), hypertrophy (increasing heart size or wall thickness), conduction disturbances (abnormal speed of an electricity through the heart or metabolic disturbances (such as an elevated potassium or transient insufficiency of blood flow to the heart). Because of its versatility it is frequently performed in an office setting to help evaluate new symptoms or as part of a yearly checkup.

Stress Testing. An additional use of the EKG is to observe it in response to stress. This is usually done with exercise. The EKG is continuously recorded before, during and after exercise. This may be with walking a treadmill or, occasionally with an arm ergometer or stationary bicycle. The speed and intensity of the exercise is gradually increased in an effort to achieve a target heart rate, although the test may be stopped at any time at the request of the person exercising because of shortness of breath, leg fatigue, etc. This type of EKG recording is useful in determining the cause of chest discomfort or other symptoms which may be heart related. The EKG may become temporarily abnormal if the heart during exertion does not receive an adequate supply of blood.

The stress EKG is frequently recommended, therefore, as part of an initial evaluation for possible heart symptoms. It is often done as part of a yearly assessment or, on individuals who feel fine but are anxious to see if they have a heart problem. The test is safe and can usually be performed as an outpatient in a physician's office. Sometimes it is combined with an image of the heart taken via an echocardiogram or nuclear study.