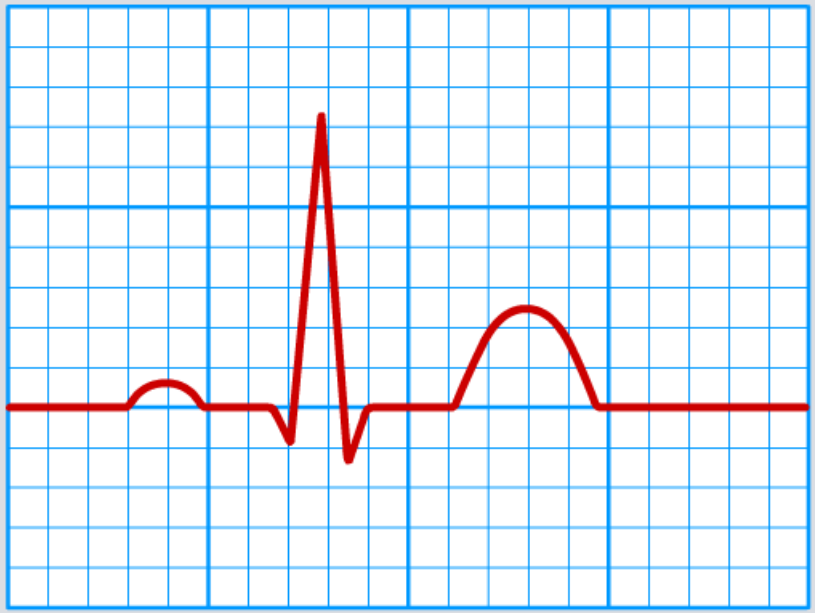
Electrocardiograms



What are electrocardiograms?

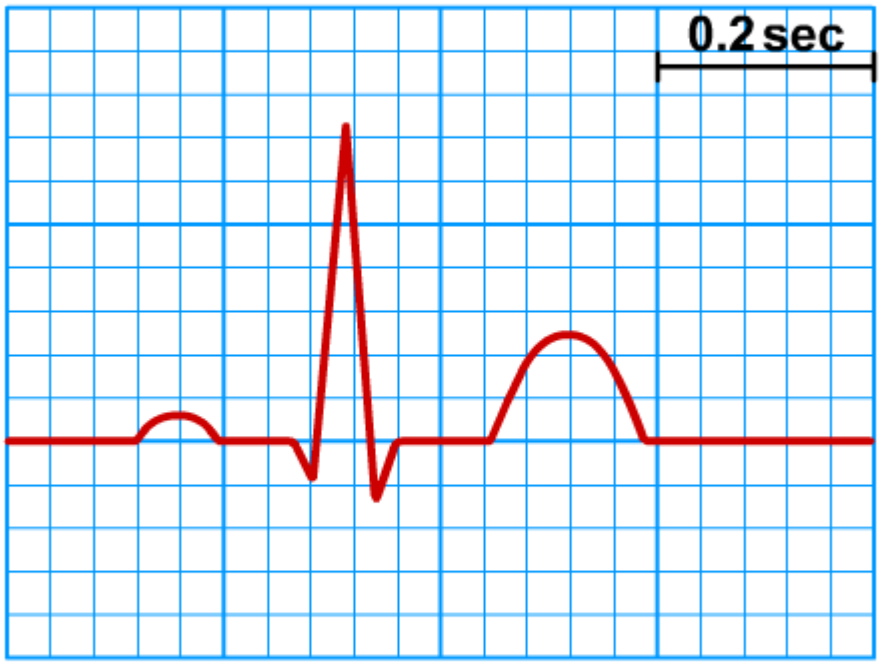
The electrical activity of the heart can be monitored by an **electrocardiograph**.

Several electrodes are attached to specific places on a person's chest and limbs. These detect changes in polarization in the heart by measuring current at the skin surface.

The leads are connected to a machine that draws an **electrocardiogram** (**ECG**).

Components of an ECG trace

What are the components of an ECG trace?



An ECG trace records the electrical activity of the heart (vertical axis) over time (horizontal axis).

Click a button to find out how an ECG trace relates to the cardiac cycle.

P wave | ST segment

PR interval | T wave

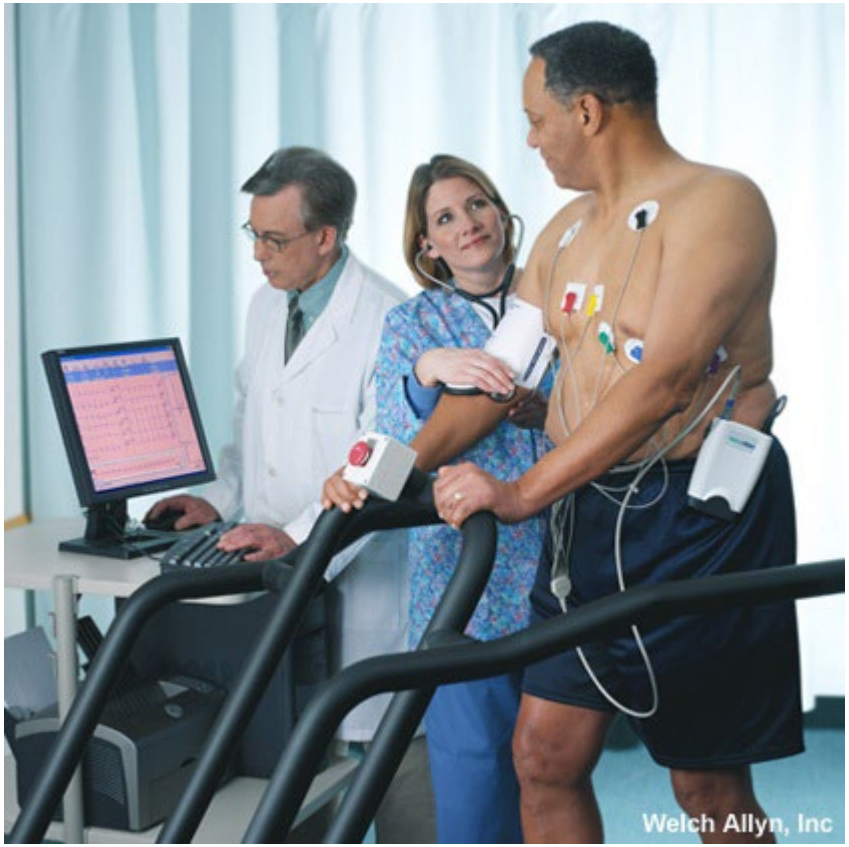
QRS complex | show all

ECG in diagnosis

ECGs are used to diagnose problems with the heart, as variations in different components of the trace can indicate a disease or other abnormality.

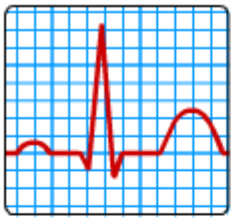
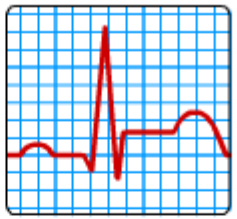
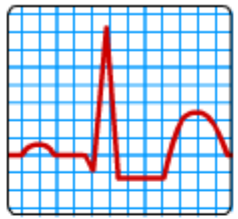
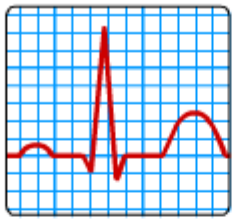
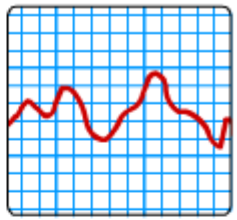
An ECG may be taken while the patient is relaxed or it may be taken before, during and after exercise.

This is called a ‘stress test’ and usually involves the patient exercising on a treadmill while attached to an ECG machine.



Abnormal ECGs

Abnormal ECG traces

ECGs can help diagnose abnormalities, but there are a range of values that are considered normal, making interpretaion difficult.

Click the images above to see examples of abnormal traces.