

Tell Me About Electrocardiograms (EKG)



An electrocardiogram – also called an EKG or ECG – is a recording of the electrical impulses generated by your heart. This brief snapshot of the heart’s electrical activity can detect if the heart is beating normally or abnormally. If the heart is found to have an irregular rhythm, further tests may be advised to determine the seriousness and extent of the problem.

The heart is a hollow muscle. It continually contracts and relaxes to pump blood and oxygen to the body. Each heartbeat has an electrical impulse. Once the heart muscle has received the impulse, it contracts, causing a heartbeat. After each beat, the muscle recharges.

The electrical impulses, which cause the pumping action, create a series of peaks and valleys. These peaks and valleys represent a **cardiac cycle** (one heartbeat). The electric impulses of one cardiac cycle consist of a **P wave**, **QRS complex** and a **T wave**. Irregularities in your heart rhythm may indicate an abnormal heart structure, or problems with the oxygen and blood supply to the heart.

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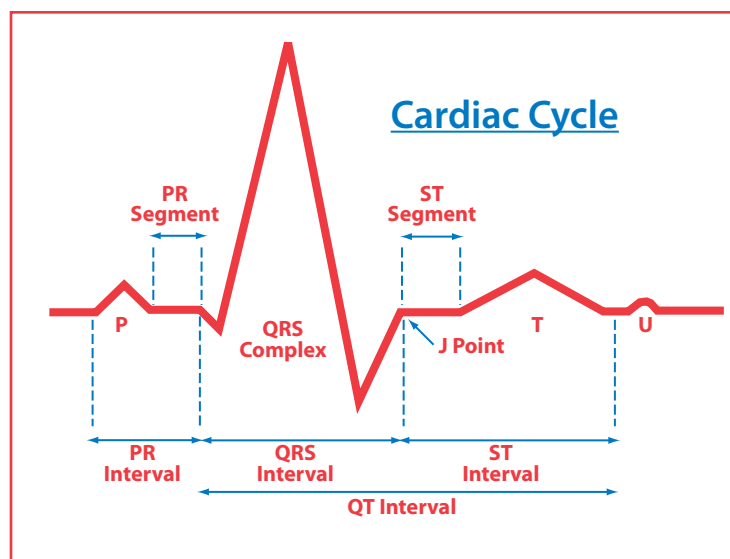
A **resting EKG** takes only a few minutes. Heart rhythms are evaluated for heart rate, regularity, and cardiac cycle formation.

Heart rate: Normally, a resting heart rate is between 60 and 100 beats per minute. A heart rate above 100 is known as “tachycardia” and a heart rate below 60 is known as “bradycardia”.

Heart rhythm: A healthy heart beats regularly. Irregular rhythms are referred to as arrhythmias. Arrhythmias can cause the heart to beat erratically. An arrhythmia can cause the heart to pump faster or slower than normal. If the irregular beat lasts longer than a few minutes, the change in blood flow can cause light-headedness, dizziness, or weakness.

Complex formation: An abnormal formation can result from enlargement or inflammation of the heart, congenital abnormalities and various other heart problems. If abnormal formations are noted, the frequency is noted along with any symptoms that may occur with the abnormal beat. If the abnormality occurs frequently or occurs with symptoms, your doctor may recommend further testing.

Treatment options depend on the type of rhythm disturbance. Treatment can be as simple as making lifestyle changes or taking medications, or can include more intense treatment procedures such as electrical cardioversion to change the electrical pattern, pacemaker insertion to override the abnormal electrical pattern, or ablation to destroy the abnormal pathway.



Tell Me About Echocardiograms (Echo)



An echocardiogram allows for a safe and painless study of the heart's anatomy. Also called an "echo," the echocardiogram uses ultrasound (harmless sound waves) sent through a device called a transducer. The device picks up echoes of the sound waves as they bounce off the different parts of the heart. These echoes are turned into moving pictures of the heart that can be seen on a video screen. The pictures help to evaluate how blood flows through the heart chambers, heart valves, and blood vessels. Echo is often combined with Doppler ultrasound and color Doppler to evaluate blood flow across the heart's valves.

Echo results yield information about the heart's anatomy and its ability to function, which can include:

- **Heart size:** Weakened or damaged heart valves, high blood pressure or other diseases can cause the chambers of the heart to enlarge.
- **Pumping strength:** During an echocardiogram, a doctor can calculate the how much blood the heart is pumping during each heartbeat (ejection fraction) or the volume of blood pumped by the heart in one minute (cardiac output).
- **Damage to the heart:** an echo allows the measurement of the size and shape of the heart's chambers. Also assessed is the ability of the heart chambers to pump blood (cardiac performance).
- **Valve problems:** Echo pictures show the heart valves and check how well they work. The flow of blood across the valves can also be evaluated for normal and abnormal flow patterns.

Treatment options:

Abnormal results may indicate heart valve disease, cardiomyopathy, pericardial effusion, or many other cardiac abnormalities. Some abnormalities are very minor and do not pose significant risks. Other abnormalities are signs of very serious heart disease that will require further evaluation by a specialist. Therefore, it is very important to discuss the results of the echocardiogram in depth with a health care provider.