Electrocardiography is a method of analyzing the heart's electrical activity via the electrodes placed on the skin. The major waves in an ECG tracing are P, QRS, and T. An electrocardiogram (ECG or EKG) is a test that checks for abnormalities in your heart's electric signals. It can detect problems with your heartbeat and will show how fast your heart is beating and whether it can correctly send blood to all parts of your body. A normal ECG doesn't mean you have no risk for heart disease or other related conditions, but it does indicate that further testing may not be needed at this time. Your doctor will review your ECG and discuss with you the steps you need to take and the next steps in the diagnosis of any problems. An ECG can:

The ECG waveform consists of different types of waves with different rates. The most common ones are:

A single lead system records electrical activity from one "channel" (a mix of muscles, bones and skin around a heart chamber, or a combination thereof). A twelve-lead system records electrical activity from twelve, equally-spaced "channels". Each channel corresponds to a particular area in and around the heart. The twelve-lead system thus gives the doctor a more detailed picture of what is occurring inside the heart. The term "ECG" is used both for a single recording and for an interpretation of such a recording. The electrocardiogram (ECG or EKG) shows the heart's electrical activity over time using paper graph. Currents from five electrodes located on the limbs and on the chest wall are recorded as variations in voltage, which can be plotted as waveforms over time on graph paper. A computer program displays these records digitally. The interpretation of the ECG is the physician's best and most thorough method for determining whether there is a problem and identifying it. Recordings taken at the same time as the electrocardiogram provide information about electrical variation between individuals. There are three basic ECG components: P wave, QRS complex, and T wave. The appearance of P wave, QRS complex and T wave often change as a person ages or may be different among those with abnormal cardiac rhythms (heart arrhythmias). P waves are usually seen as an initial deflection that grows in amplitude over time until it reaches its maximum size (peak) and begins to diminish. P waves are the earliest of the three ECG components. The P wave appears just after the atrial depolarization, when the electrical impulse arrives at the atria. The amplitude of P waves is related to ventricular depolarization, which can result in significant differences between P waves occurring at different heart rates. In a normal heart rate, a person's PR interval is about 0.12 seconds and their QRS interval from 1.0 to 0.17 seconds, but it may be as short as 0.08 seconds or as long as 1.43 seconds in an elderly patient with age-related changes to the heart rate and conduction system (pacemaker).

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