Parts of an ECG

An electrocardiogram (ECG) is a noninvasive test that monitors the electrical activity of the heart. The interpretation of an ECG includes rate, rhythm, and waveforms (refer to the Picmonic on "Components of ECG Interpretation"). An ECG involves graphic tracings of bolded and light lines forming a grid. Each large square is composed of 25 smaller squares. Each small square represents 0.04 seconds while each large square equals 0.20 seconds. These waveforms represent electrical activity in the heart as ions move across the membranes of myocardial cells. The P wave measures atrial depolarization while the QRS complex measures ventricular depolarization. The T wave measures ventricular repolarization. An ECG may be ordered to diagnose heart arrhythmias, heart defects, coronary artery disease, and myocardial infarction.



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P Wave
P-pole-vault
The P wave represents electrical conduction between the atria. The P wave is normally upright and lasts between 0.06 and 0.12 seconds. There should be one P wave for every QRS complex. An abnormal P wave may be caused by a disturbance of conduction within the atria.

Atrial Depolarization
Atrial Discharge-of-electricity
Atrial depolarization involves the contraction of the atria and is measured by the P wave.

QRS Complex
Queen's-Rocket-Ship Complex
The QRS complex measures the duration for depolarization of both ventricles. A normal QRS complex is less than 0.12 seconds. Disturbances in conduction in bundle branches or the ventricles disrupt a normal QRS complex.

Ventricular Depolarization
Ventricular Discharge-of-electricity
Ventricular depolarization is measured by the QRS complex. Systole is caused by ventricular conduction.

T Wave
T-trophy
The T wave represents repolarization of the ventricles. A normal T wave is upright and lasts 0.16 seconds. A tall, peaked, or inverted T wave may be caused by electrolyte imbalances, ischemia, or myocardial infarction.

Ventricular Repolarization
Ventricular Recharging
Ventricular repolarization is measured by the T wave.

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