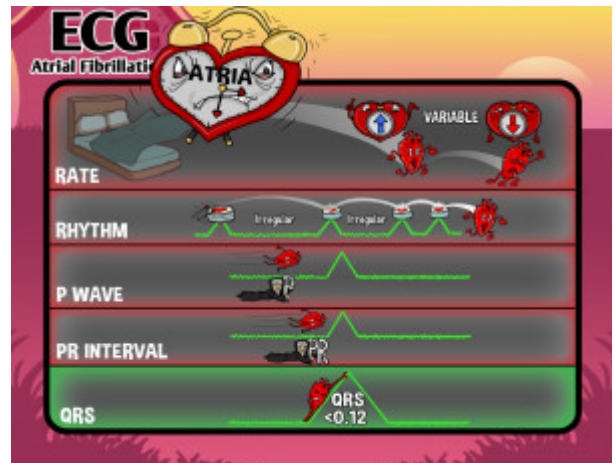


## ECG: Atrial Fibrillation

Atrial fibrillation is dysrhythmia characterized by ineffective atrial contraction due to multiple ectopic foci within the atria. The rate is variable with the atria between 350 to 600 bpm and the ventricles varying between 120 to 200 bpm. The rhythm is irregular. Although the QRS interval is normal, the P waves are replaced with chaotic fibrillatory waves. Causes of atrial fibrillation include myocardial infarction, lung disease, valve disease, and thyrotoxicosis. Medications to treat atrial fibrillation include digoxin, amiodarone, calcium channel blockers, and beta blockers. Cardioversion may be indicated to restore sinus rhythm.



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### Rate

#### Variable Rate

##### Variable Heart-timer

The heart rate is variable with the atria ranging between 350 to 600 bpm and the ventricles varying between 120 to 200 bpm.

### Rhythm

#### Irregular Rhythm

##### Irregular Rhythm-drum

During atrial fibrillation, the rhythm is usually irregular. Any time you find an irregularly irregular heart rate you should always have atrial fibrillation in the back of your mind.

### P Wave

#### No P Wave

##### Nun-P-on-Waveform

The P wave is absent in individuals with atrial fibrillation. This lack of a P wave causes the lack of an atrial kick. Instead, chaotic fibrillatory waves are present and may appear similar to random P waves. This lack of timing causes decreased ventricular filling and poor perfusion.

### PR Interval

#### No PR Interval

##### Nun-PR-on-Waveform

In atrial fibrillation, there is no sensible PR interval. This is because of incomplete atrial depolarization, which does not allow a PR interval to form. Without the formation of a PR interval, and repeated incomplete P firings the PR interval cannot be appreciated and the R-R interval is variable.

### QRS Interval

#### QRS < 0.12 Seconds

##### Less-than 0.12-QRS

Like normal sinus rhythm, the QRS interval of individuals with atrial fibrillation is less than 0.12 seconds.