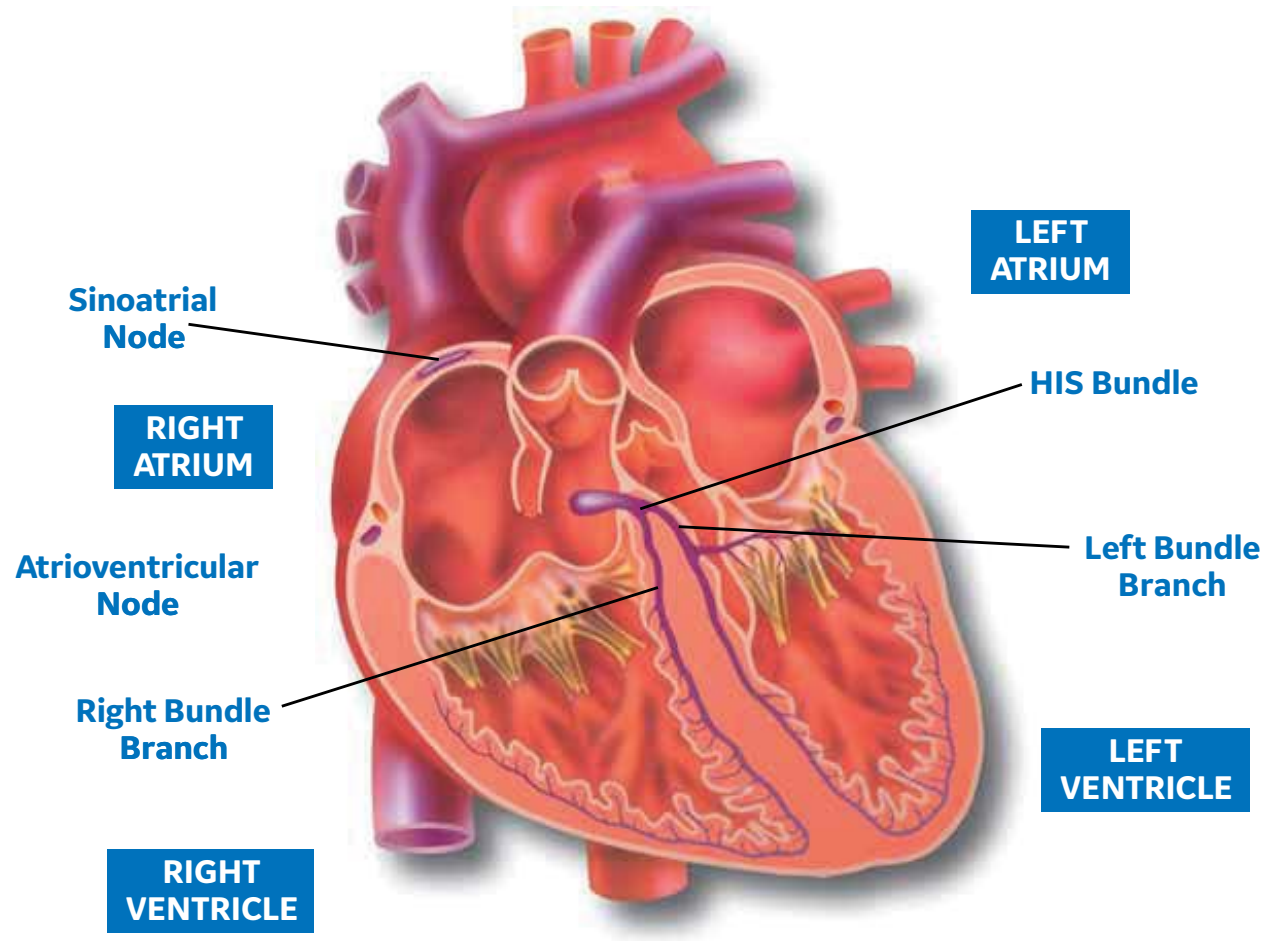


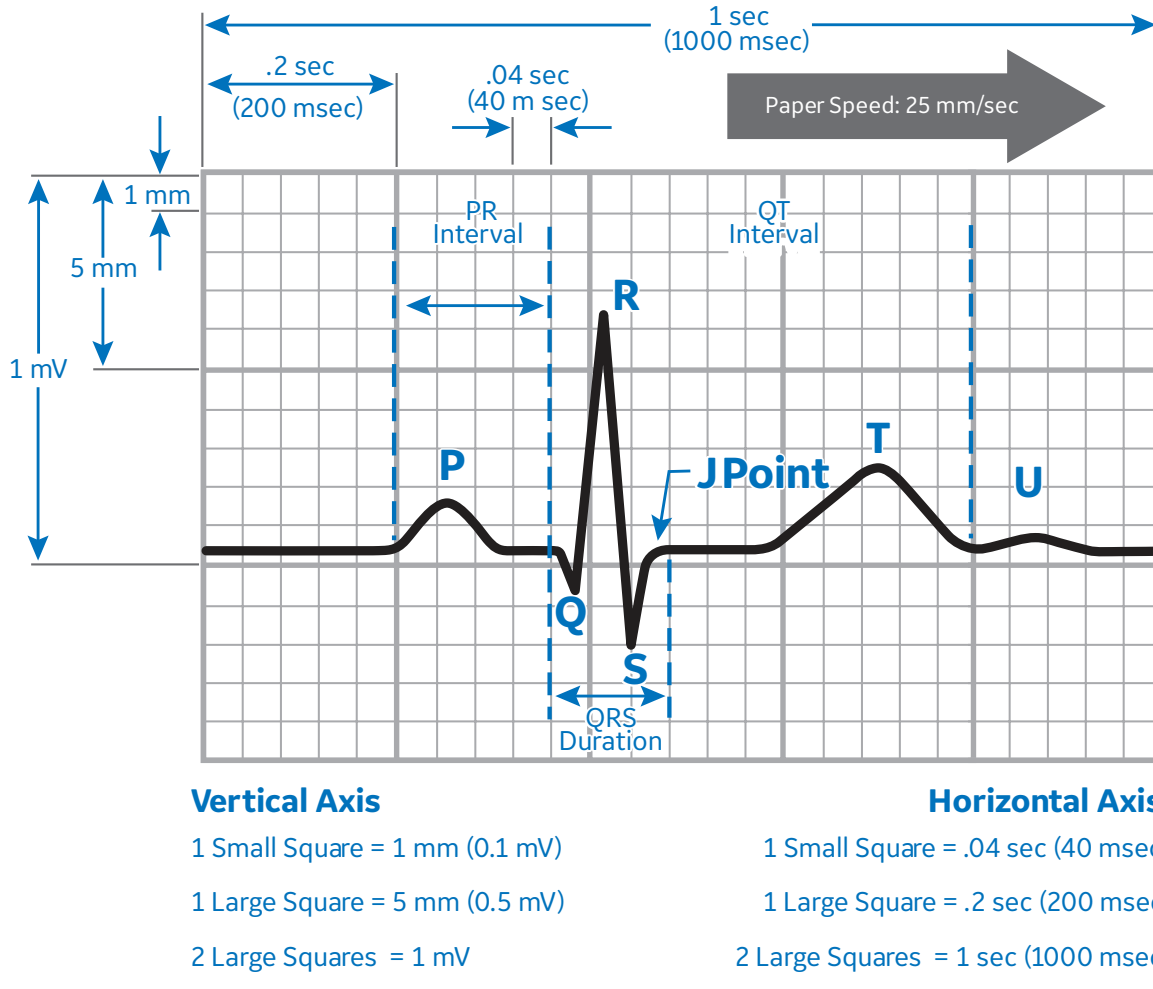
# Arrhythmia Recognition



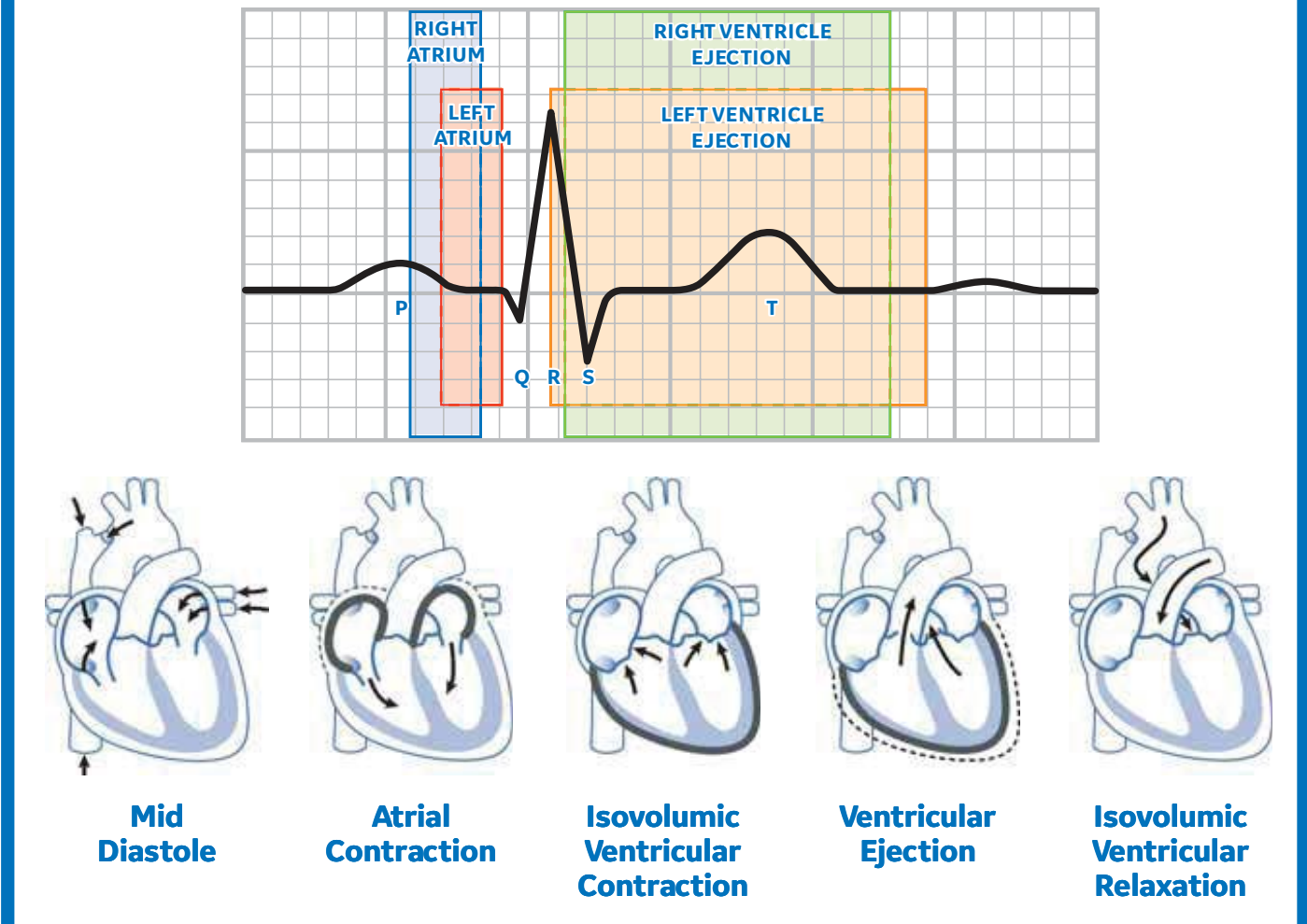
## Cardiac Conduction System



## ECG Components

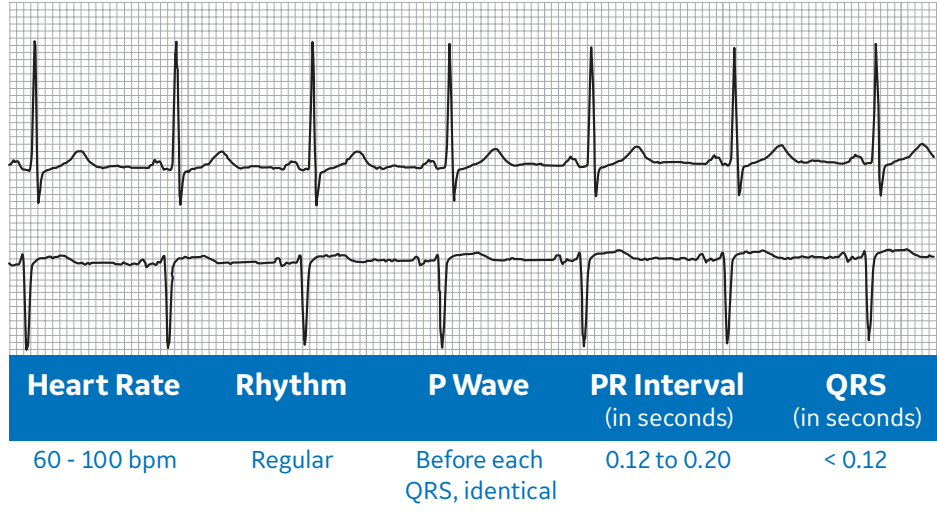


## Electrical and Mechanical Events

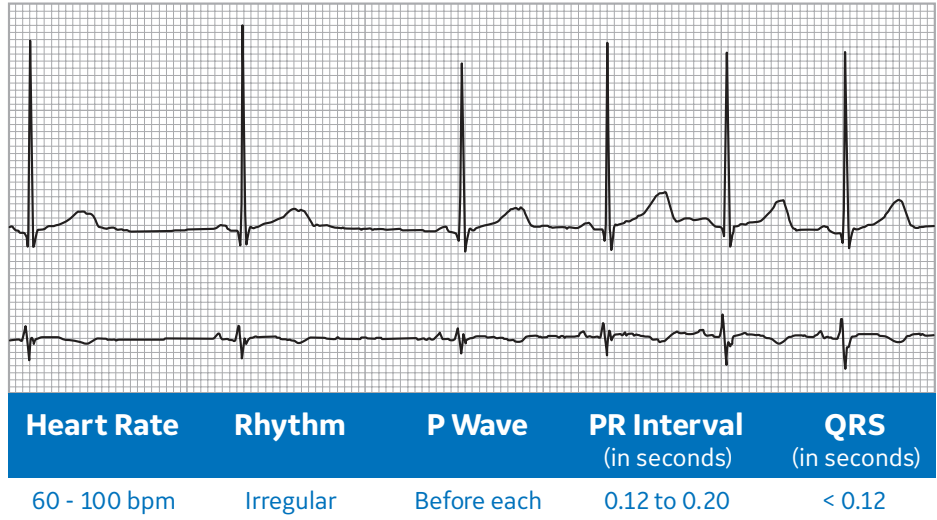


## Sinus Rhythms

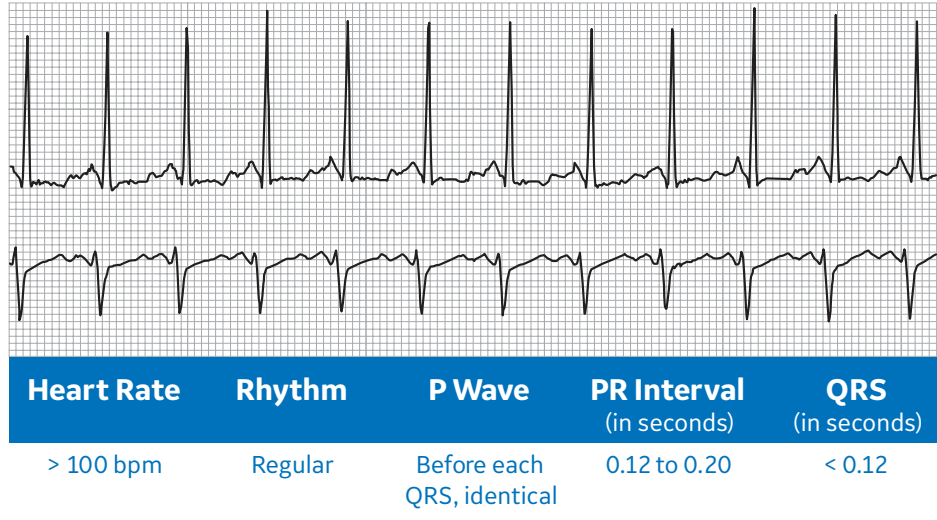
### Normal Sinus Rhythm



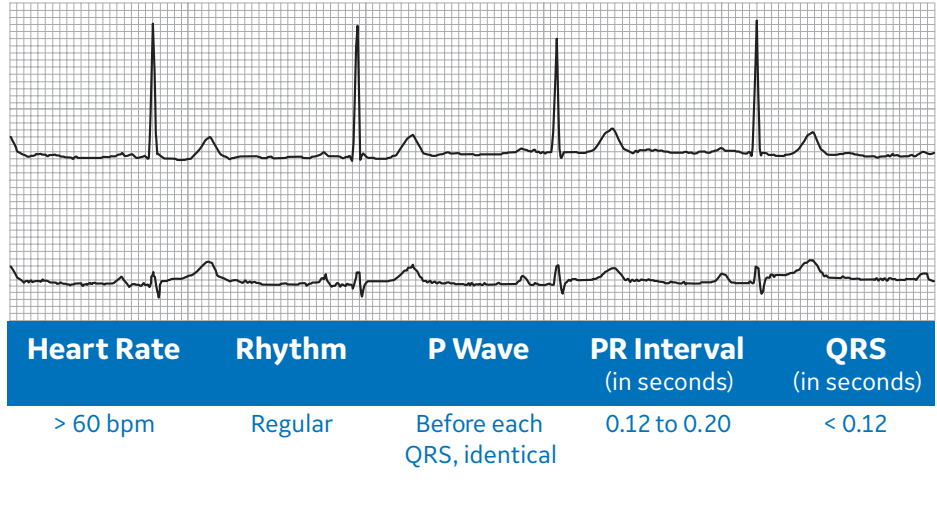
### Sinus Arrhythmia



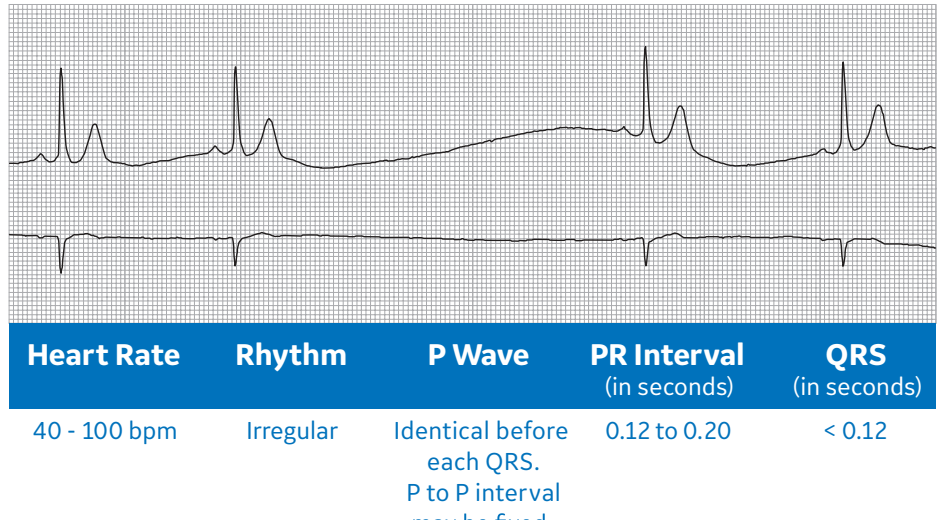
### Sinus Tachycardia



### Sinus Bradycardia

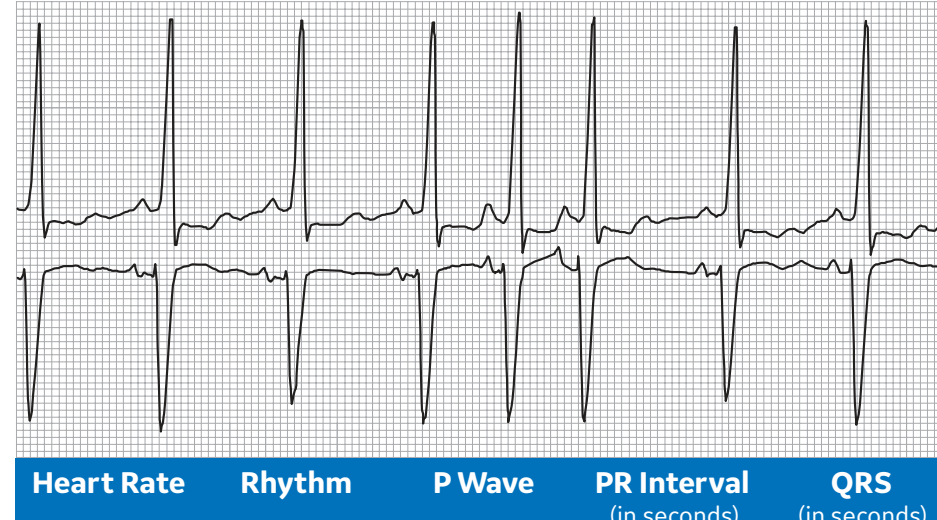


### Sinus Arrest or SA Block

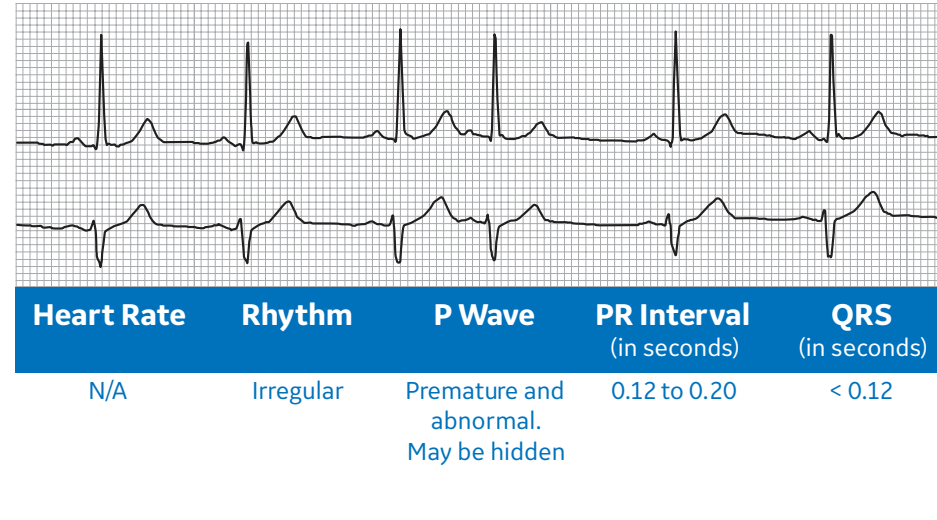


## Supraventricular Rhythms

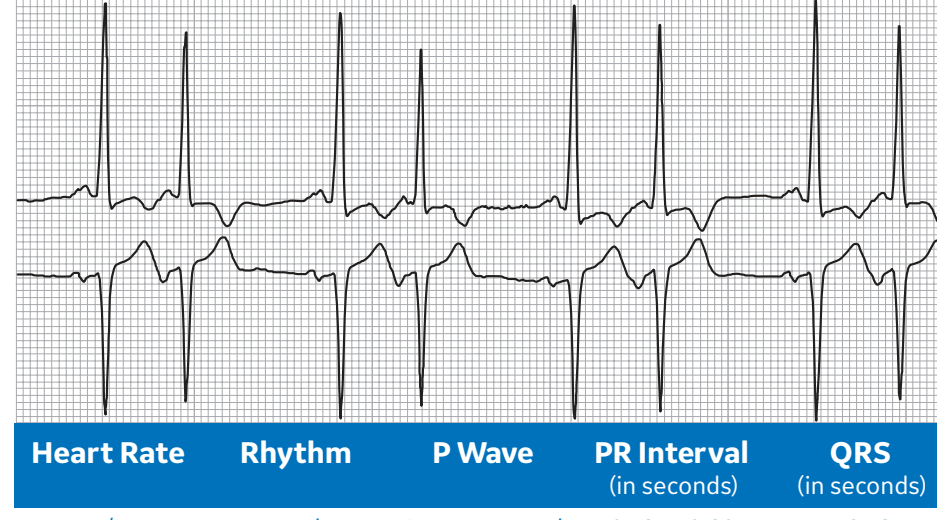
### Premature Atrial Complexes - PACs



### Premature Atrial Complex - Isolated PAC



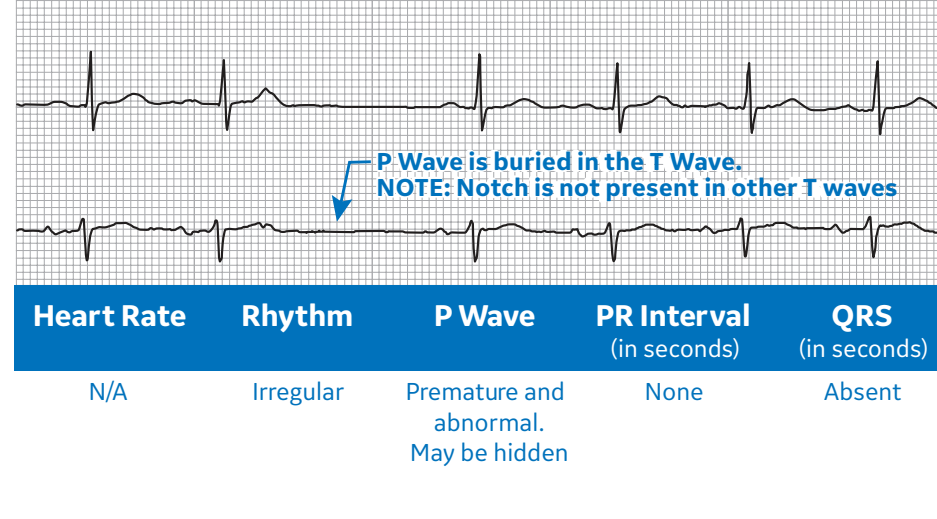
### Premature Atrial Complexes (Atrial Bigeminy) Every other beat is a PAC



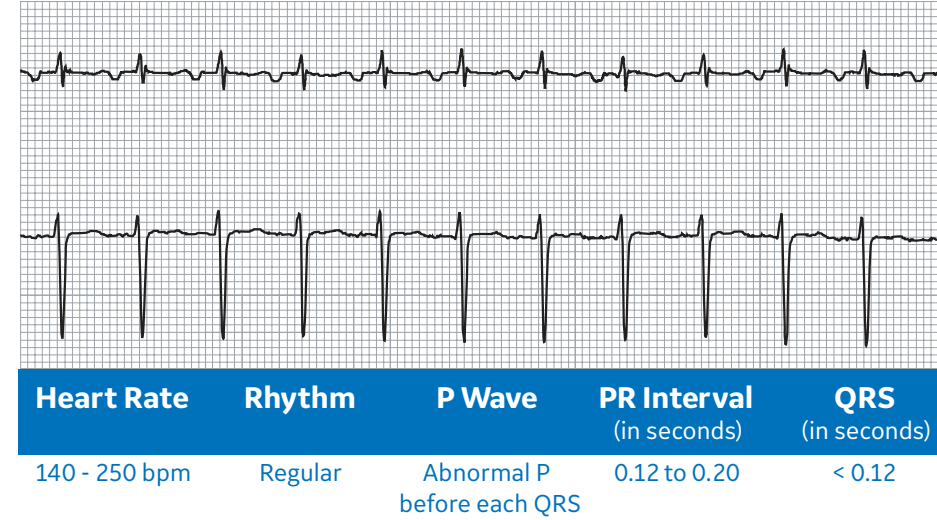
### Premature Atrial Complex with Aberrancy



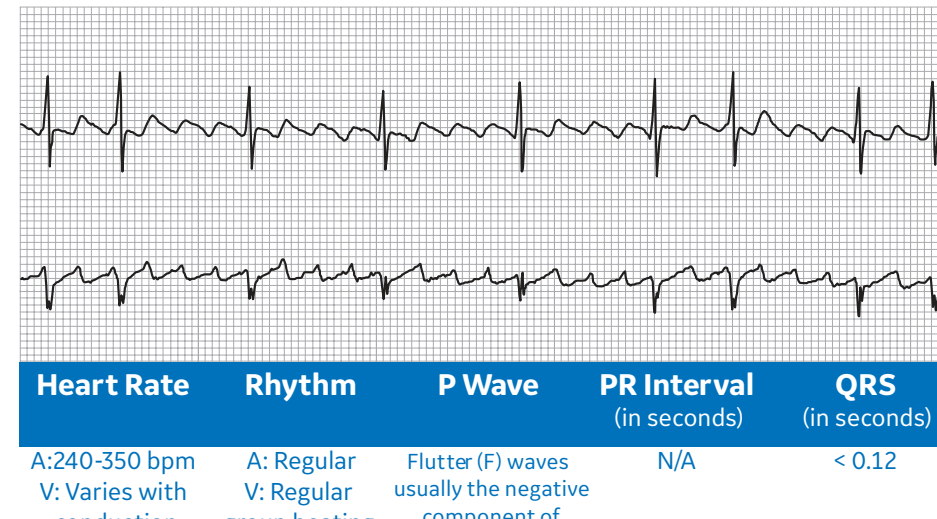
### Nonconducted Premature Atrial Complex



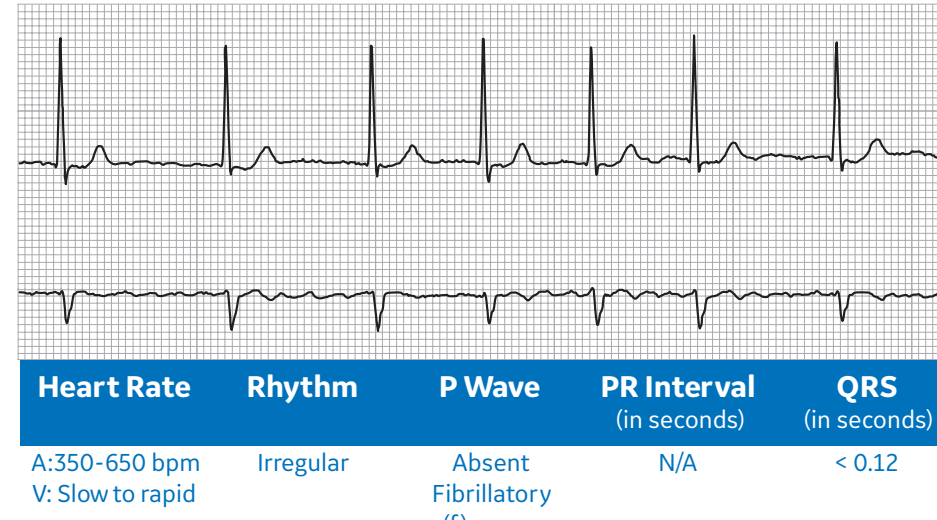
### Atrial Tachycardia



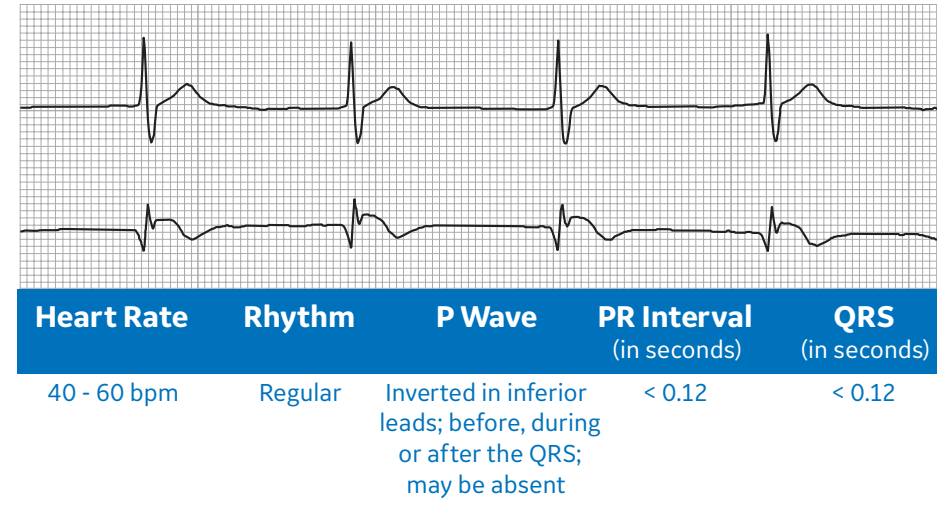
### Atrial Flutter



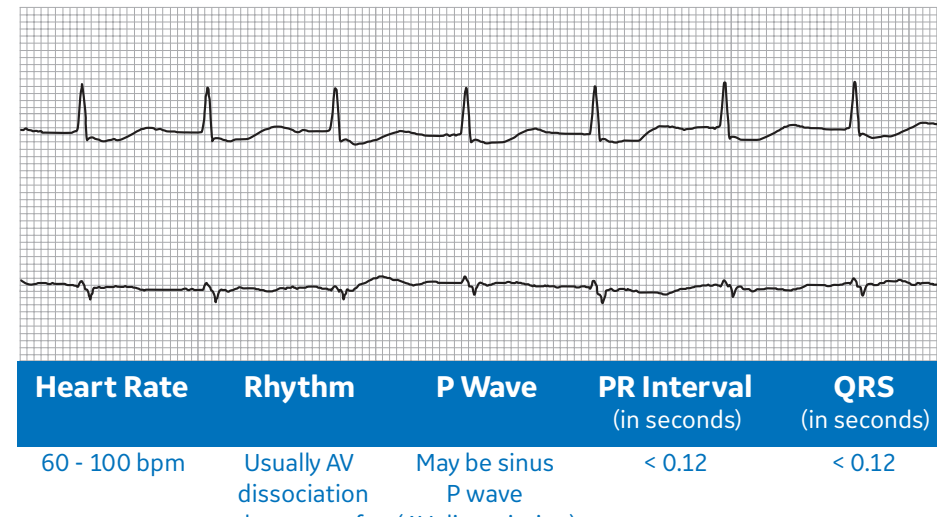
### Atrial Fibrillation



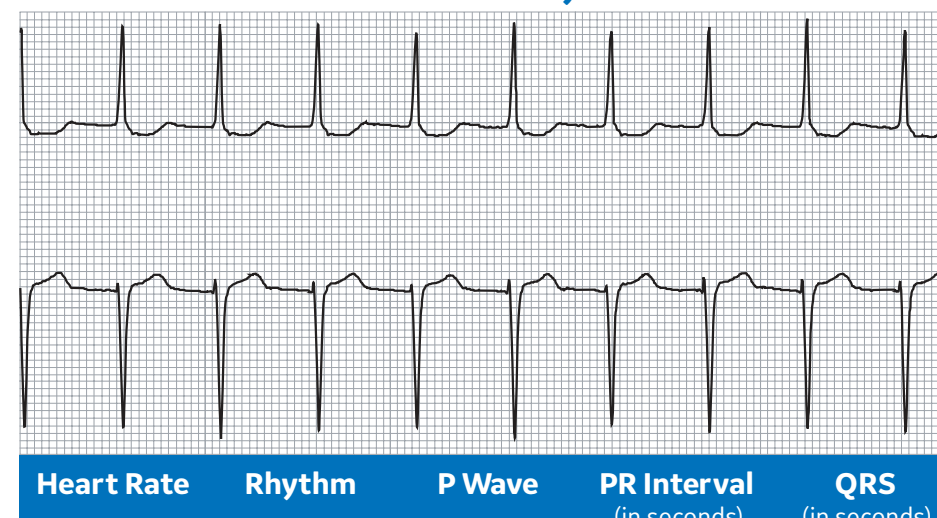
### Junctional Rhythm



### Accelerated Junctional Rhythm

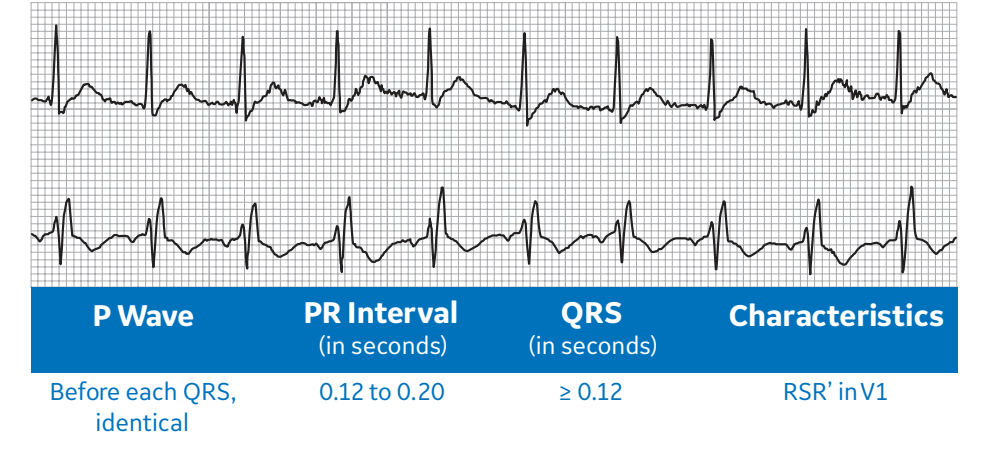


### Junctional Tachycardia

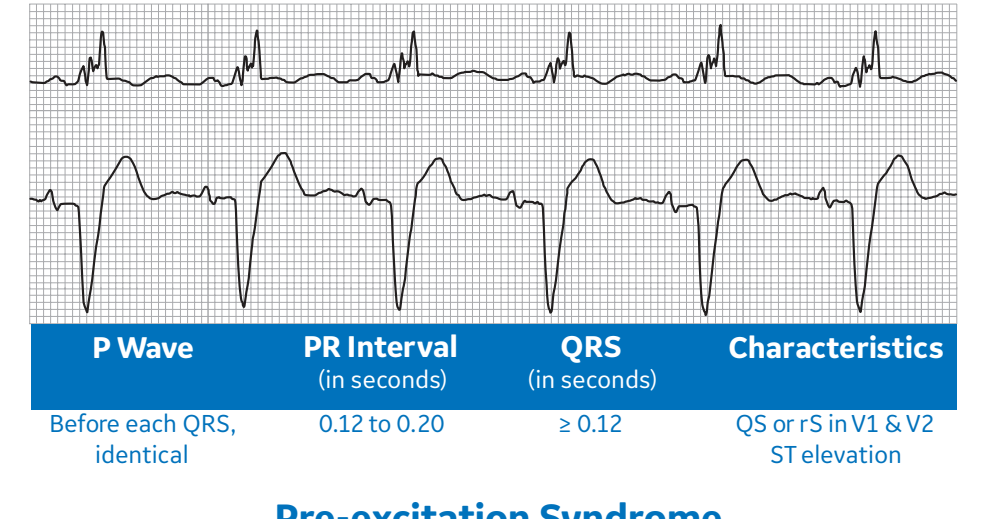


## Conduction Defects

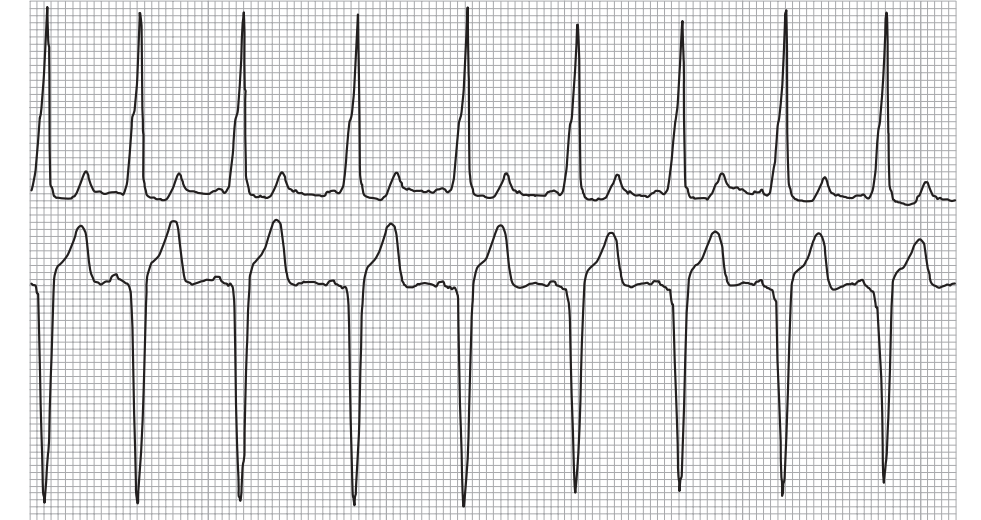
### Right Bundle Branch Block



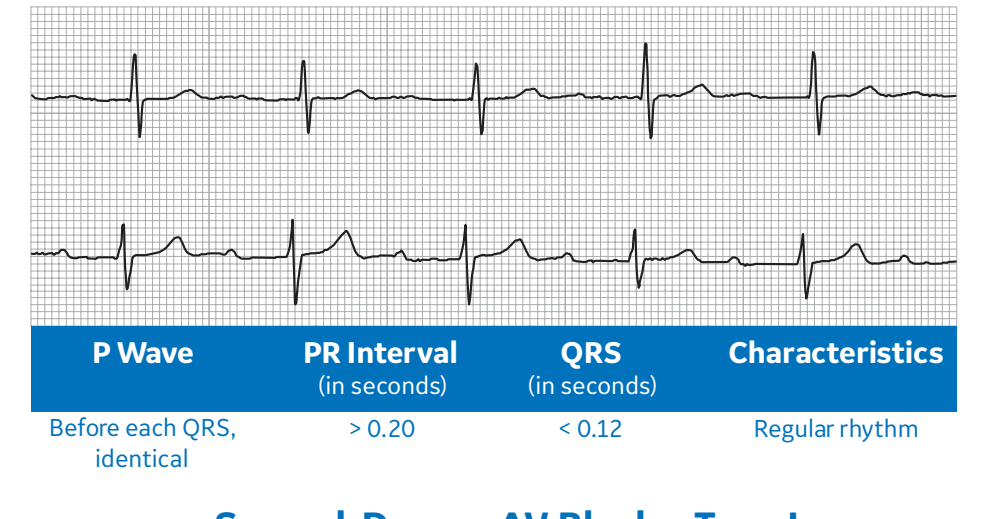
### Left Bundle Branch Block



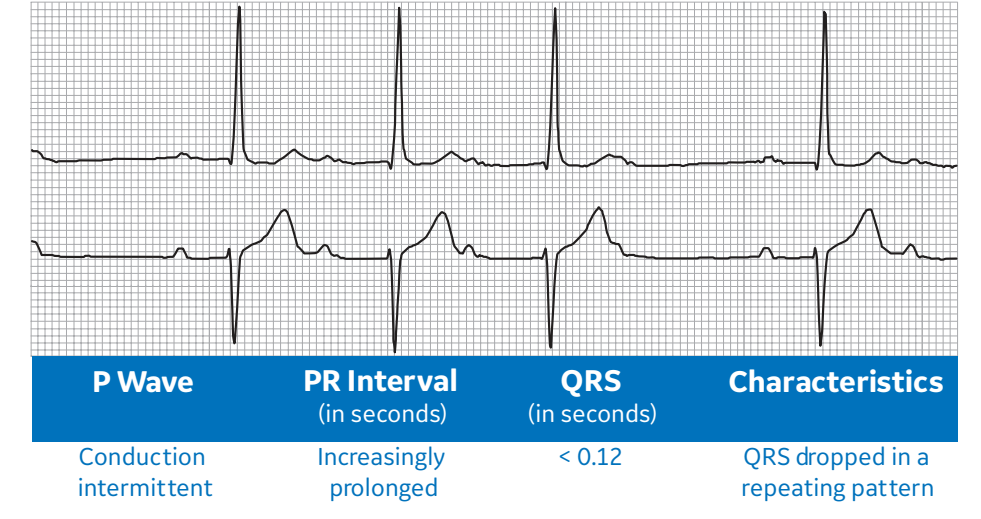
### Pre-excitation Syndrome



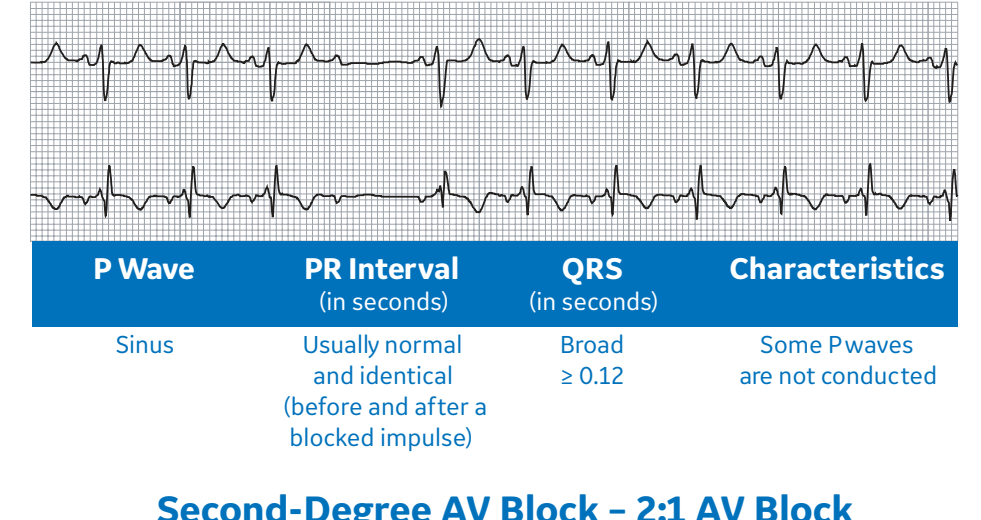
### First-Degree AV Block



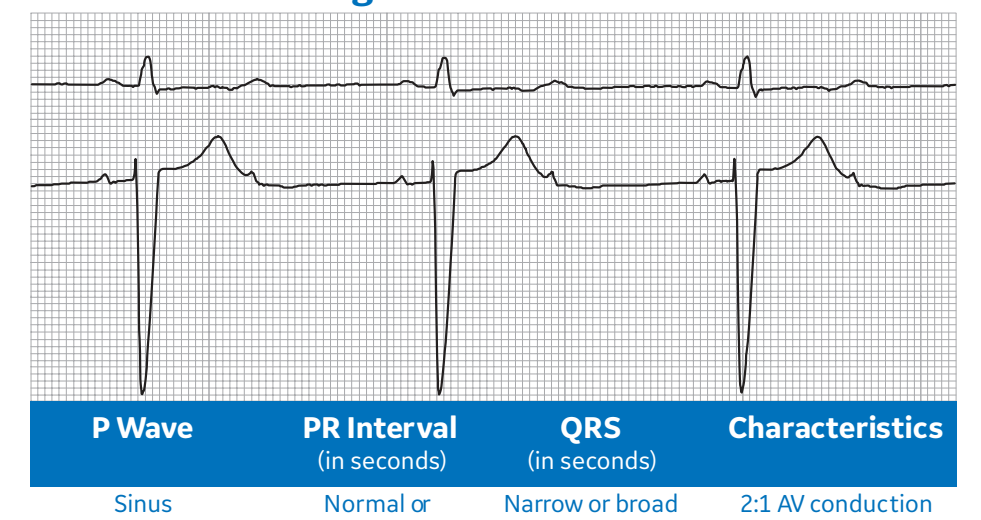
### Second-Degree AV Block - Type I (AV Wenckebach or Mobitz type I)



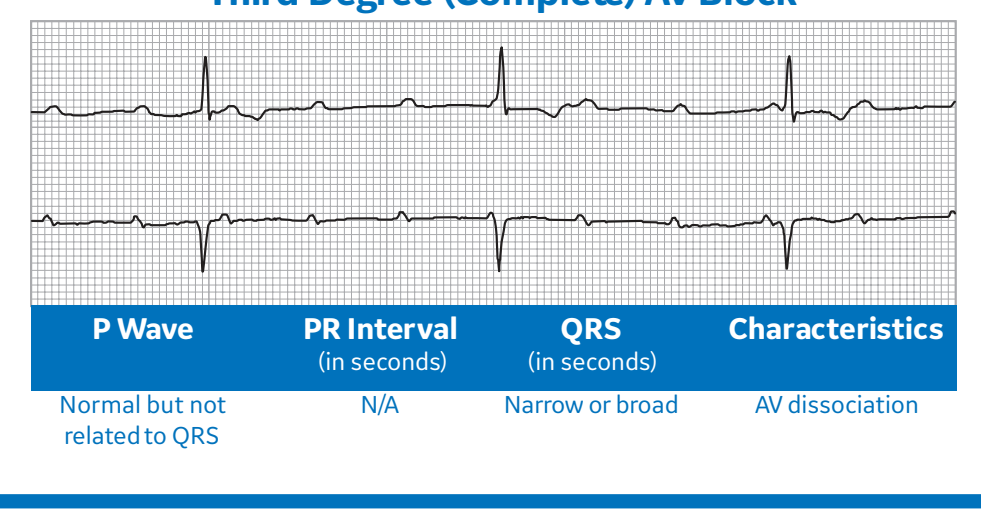
### Second-Degree AV Block-Type II (Mobitz type II)



### Second-Degree AV Block - 2:1 AV Block



### Third Degree (Complete) AV Block



## Arrhythmia Recognition (poster 1 of 2)

This is part one of two posters to assist healthcare professionals in recognizing basic arrhythmias. According to the Practice Standards for Electrocardiographic Monitoring in Hospital Settings (Circulation. 2004;110:2721-2746) in general, the mechanisms of arrhythmias are the same in both adults and children. However, the ECG appearance of the arrhythmias may differ due to developmental issues such as heart size, baseline heart rate, sinus and AV node function, and automatic innervation.

ECG terminology and diagnostic criteria often vary from text to text and from one teacher to another. There are often several terms describing similar findings (for example: Premature Atrial Contraction, Atrial Premature Complex, Atrial Extrasystole, Supraventricular Ectopic Beat, etc.) It is important to correlate the ECG interpretation with the clinical observation of the patient.

	0-1d	1-3d	3-7d	7-30d	1-3mo	3-6mo	6-12mo	1-3y	3-5y	5-8y	8-12y	12-16y
Heart Rate (bpm)	94-135 (0.22)	91-158 (0.22)	90-166 (0.22)	100-182 (0.22)	100-179 (0.22)	105-185 (0.22)	108-189 (0.22)	89-152 (0.22)	75-137 (0.22)	65-133 (0.22)	62-130 (0.22)	60-120 (0.22)
PR Interval (Lead II) (seconds)	0.08-0.16 (0.107)	0.08-0.14 (0.108)	0.07-0.15 (0.102)	0.07-0.14 (0.103)	0.07-0.13 (0.098)	0.07-0.13 (0.101)	0.08-0.15 (0.113)	0.08-0.15 (0.119)	0.08-0.16 (0.121)	0.09-0.17 (0.128)	0.09-0.18 (0.135)	0.09-0.18 (0.135)
QRS Interval (Lead V) (seconds)	0.02-0.07 (0.05)	0.02-0.07 (0.05)	0.02-0.07 (0.05)	0.02-0.08 (0.05)	0.02-0.08 (0.05)	0.03-0.08 (0.05)	0.03-0.08 (0.06)	0.03-0.07 (0.06)	0.03-0.08 (0.06)	0.04-0.09 (0.06)	0.04-0.09 (0.07)	0.04-0.09 (0.07)

All values 2nd - 98th percentile; numbers in parentheses, means. Adapted from *Pediatr Cardiol*. 1979;1:123.

This poster includes Premature Ventricular Conduction, Pacemaker Lead Placement, ST Segment Depression, Ventricular Rhythms, Pacemaker Rhythms, Full Compensatory Pause and ECG Artifact. The ECG rhythm strips display lead II as the top waveform and lead V1 as the bottom waveform. Classic examples are shown for each rhythm to provide basic visualization and avoid complexities. The intended use of this poster is to complement a text and/or course - in addition to a reference guide for arrhythmia recognition.

- The most common ECG rate, interval, and duration measurements are from the following publications:
- Clinical Electrocardiography (Post Graduate Institute for Medicine).
  - Understanding Electrocardiography (Mary Boudreau Conover).
  - How to Quickly and Accurately Master Arrhythmia Interpretation (Dale Davis).
  - Principles of Clinical Electrocardiography (M. J. Goldman).
  - Basic Dysrhythmias Interpretation and Management (Robert Huszar).
  - An Introduction to Electrocardiography (Leo Shamroth).
  - Interpretation of Arrhythmias (Emanuel Stein).