

Heart Block Study Guide

Examples of heart block charts can be found at: <https://ekg.academy/learn-ekg?courseid=316&seq=3>

First Degree AV Block

- Occurs when impulses from the atria are consistently delayed during conduction through the AV node.
- First degree AV block is a constant and prolonged PR interval.
- May result from insult to the AV node hypoxemia, MI, ischemia, increased vagal tone, aging, beta blockers, calcium channel blockers, digitalis toxicity but is also seen in normal conduction.
- *Rhythm: Regular*
- *Every P has a QRS and every QRS has a P*
- *PR: Always > 0.20 seconds*
- *QRS: Always < 0.12*
- *Treatment: No treatment needed if patient is asymptomatic.*

Second Degree AV Block – Mobitz I (Wenkebach)

- Wenkebach is characterized by progressive delay at the AV node until the impulse is completely blocked. Possible causes are insult to the AV node, hypoxemia, MI, digitalis toxicity, ischemia, and increased vagal tone. This conduction usually does not progress to higher degree heart blocks.
- *Rhythm: Irregular*
- *PR: progressive lengthening of PR until dropped beat (long, longer, drop)*
- *QRS: Usually < 0.12*
- *Treatment: No treatment needed if patient is asymptomatic.*

Second Degree AV Block – Mobitz II

- Because the ventricle rate is slow, cardiac output may be decreased.
- May progress to third degree heart block.
- Occurs when some impulses from SA node fail to reach the ventricles
- Usually occurs with AMI, degenerative changes in conduction, progressive CAD.
- Problem usually occurs at the Bundle of HIS or its branches.
- *Rhythm: Irregular because of dropped beats*
- *PR: Remains constant until a block of the AV conduction, resulting is a P wave not being followed by a QRS*
- *Is there a P for every QRS? YES. Is there a QRS for every P? NO.*
- *Treatment: The aim is to improve cardiac output. Consider temporary pacing or permanent pacemaker. Close monitoring and BP support.*

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Third Degree Heart Block

- No conduction through the AV node (“divorced heart”).
- Atrial and Ventricular rate and rhythm are independent of one another.
- *Rhythm: Regular (ventricular and atrial, but at different rates)*
 - *Atrial Rate: 60 to 100*
 - *Ventricular Rate: 40 to 60*
- *PRI: will vary with no pattern or regularity*
- *QRS: origin of impulse determines QRS width.*
 - *From AV node: QRS will be normal*
 - *From Purkinje system: QRS will be wide, rate < 40*
- *Treatment: Temporary or permanent pacing.*

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