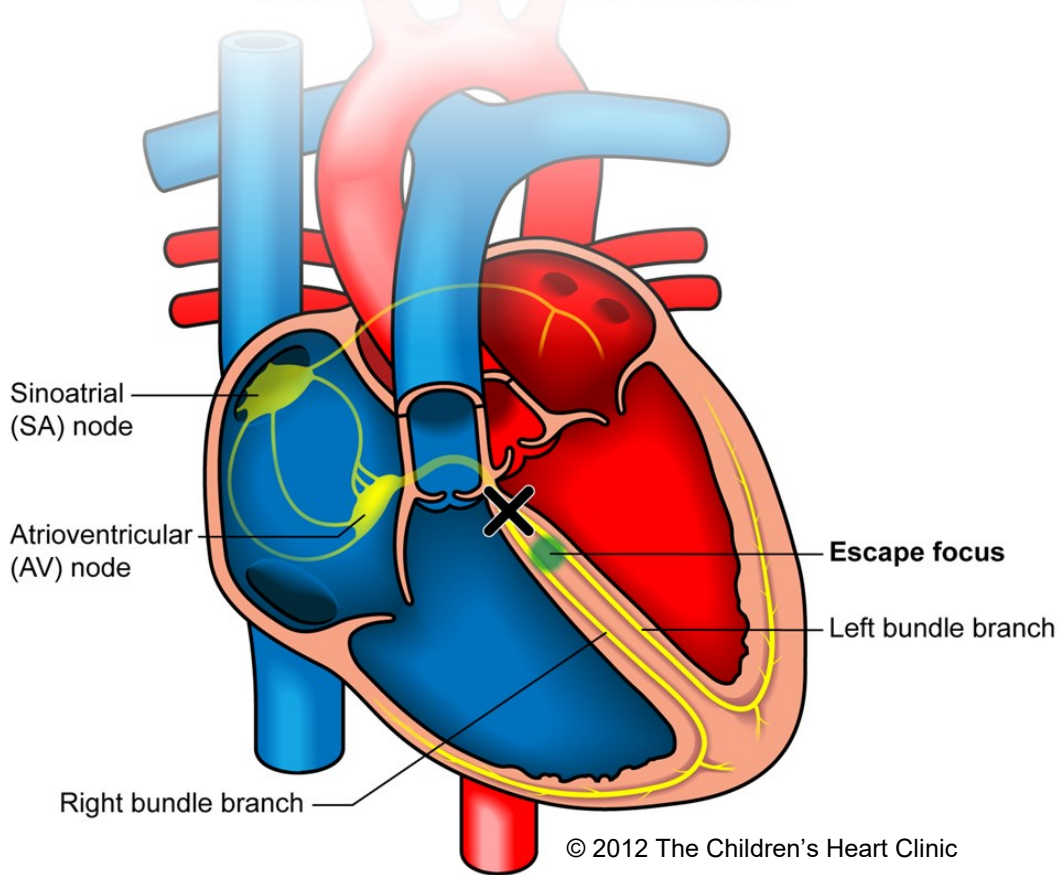


## Atrioventricular Block



Notes:

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## Atrioventricular (AV) Block

Atrioventricular (AV) block is a change in the conduction of electrical activity from the top chambers of the heart (atria) to the bottom chambers (ventricles). A normal heart beat starts at the sinoatrial (SA) node in the atrium. The SA node controls the heart rate. This sinus beat conducts to the ventricles through the AV node and then through the conduction system to the ventricles. AV block is when this conduction through one of these steps is not normal. There are three types of AV block:

First degree – Conduction takes longer than normal, but each beat conducts. Often a normal finding in kids and adolescents.

Second degree – Some, but not all of the sinus beats get conducted.

Type 1 – An often normal finding where conduction gets longer before dropping a beat.

Type 2 – Abnormal finding where random beats drop conduction without any changes.

Third degree – No sinus beats get conducted at all. Often an *escape focus* takes up the rhythm to keep the heart going somewhere in the ventricles.

Patients born with AV block usually have problems with how the heart structure formed or have a mother with antibodies that cross the placenta and attack the conduction system. AV block can also happen after birth due to different things, including drugs, thyroid problems, diseases that deposit abnormal materials in the heart, or interruption of the normal system during a heart procedure.

### Physical Exam/Symptoms:

- Slow heart rate, irregular rhythm, weak pulses.
- Most patients with first degree and second degree type 1 are asymptomatic. Some patients with second degree type 2 or third degree have symptoms, but can also be asymptomatic.
- Fatigue, dizziness, fainting, shortness of breath are the most common symptoms.

### Diagnostics:

- EKG: This is the usual first test to document the heart rhythm and conduction.
- Holter monitor/Zio patch: These are worn to monitor the heart rhythm over a period of time.
- ECHO: Sometimes used to screen for abnormal heart function or structure if indicated.
- Labs: Can be used to screen for other causes of heart block that aren't a direct heart issue.

### Medical Management/Treatment:

- Often no treatment or follow up is needed in first and second degree AV block type 1.
- If a reason is found for acquired heart block the underlying cause is treated.
- A pacemaker is used to support the heart rhythm in cases of second degree AV block type 2 or third degree AV block when that patient meets the correct criteria.

### Long Term Outcomes:

- Depends heavily on the underlying reason for heart block. Most patients with first degree and second degree AV block type 1 have no restrictions and lead normal lives.
- If a pacemaker is required then patients need lifelong follow-up and monitoring for complications that can happen with chronic pacing along with periodic pacemaker replacement.