

## “Heart Block” – Atrioventricular block

### Causes of atrioventricular block:

- Increased vagal tone, eg in athletes, or during sleep;
- Idiopathic progressive conduction system disease: 50% of cases. One example is [Lenegres disease](#)
- Ischaemic heart disease: 40% of cases
- Cardiac surgery
- Inherited familial AV block

### Drugs

- Verapamil
- Digoxin
- Amiodarone
- Adenosine
- Beta-blockers
- Quinidine
- Procainamide

### Factoids:

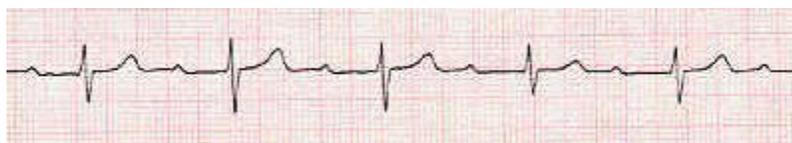
The PR interval is not just the conduction through the atria- it is also the AV node, the bundle of His and the Purkinje fibers.

But, most of the time when this is prolonged, it's the AV node ( in most cases with a PR of 200-300 msec)

First degree and Mobitz type 1 are usually AV nodal processes

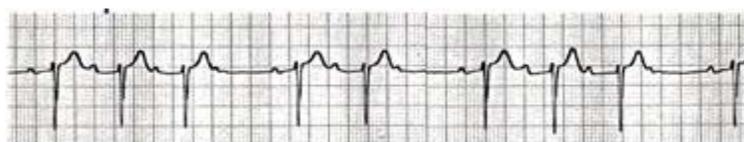
Mobitz type 2 and Third degree are typically due to disease below the AV node.

### First-degree Heart Block:



- The PR interval is prolonged : more than 200msec ( 1 large square)
- This means conduction through the AV node is slowed.
- This is a benign entity and may not need any treatment
- Atropine may resolve this: blocking the vagal input into the AV node will likely speed conduction through it.
- It is frequently due to drugs, like calcium channel blockers and cholinergic drugs.

### Second-degree Heart Block ... Mobitz Type 1 (Wenckebach)



- The PR interval is prolonged progressively over several beats, until the beat is missed.
- ie. A P wave occurs which is not followed by a QRS
- This means conduction through the AV node is slowed.
- This is a benign entity and may not need any treatment
- Atropine may help

### Second-degree Heart Block ... Mobitz Type 2



- The PR interval is NOT prolonged progressively;
- A beat is missed every few beats with a normal PR interval.
- This means conduction through the Bundle of His or the Purkinje fibers is slowed.
- It is typically a prelude to either Third Degree Heart Block, or asystole.
- Atropine probably wont do anything.
- It requires a pacemaker.

### Third-degree Heart Block ... complete heart block



- There is no relationship between the Pwaves and the QRS complexes.
- This is called “AV dissociation”. The AV node is not conducting anything.
- Atropine will not accomplish anything here.
- It requires a dual-chamber pacemaker.