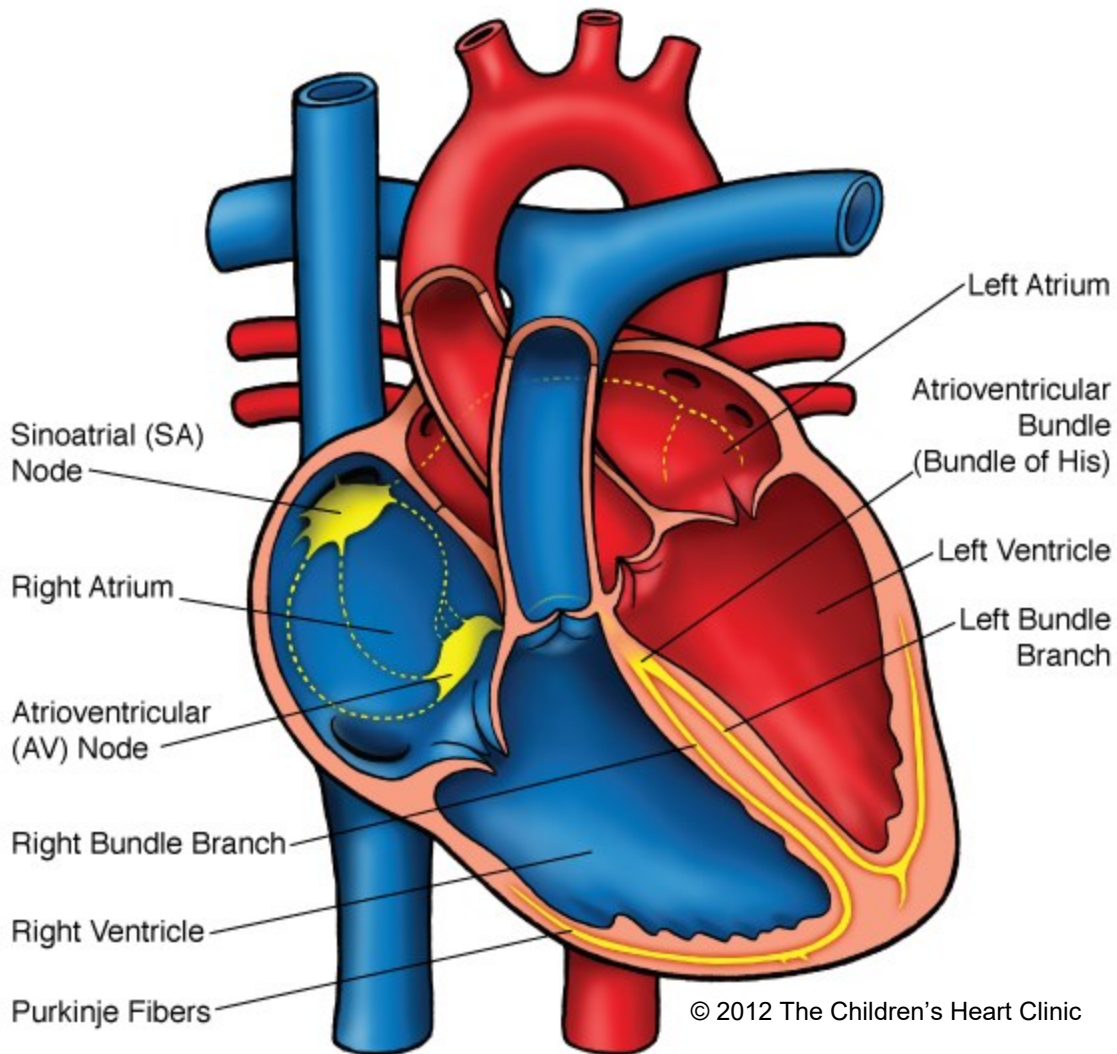


Conduction System of the Heart



Notes:

The Children's Heart Clinic 2530 Chicago Avenue S, Ste 500, Minneapolis, MN 55404
612-813-8800 * Toll Free: 1-800-938-0301 * Fax: 612-813-8825
Children's Hospital of Minnesota, 2525 Chicago Avenue S, Minneapolis, MN 55404

Conduction System

Every beat of the heart is controlled and coordinated by an electrical impulse. This impulse starts in the top chambers of the heart, the atria, and signals them to contract. It is then carried down to the bottom chambers of the heart, the ventricles, signaling them to contract after the atria.

These electrical impulses start in a structure known as the **sinus node**. The sinus node normally determines how slow or fast the heart goes. It is the natural pacemaker of the heart. The electrical impulse leaves the sinus node and travels to the top chambers signaling them to contract.

The electrical signals are then funneled to the middle of the heart known as the **atrioventricular node**, or **AV node**. This structure delays the impulse slightly and helps make sure that there is enough time for blood to leave the atria and enter the ventricles so that they fill appropriately.

The electricity then leaves the atrioventricular node and travels down specialized muscle tissue that acts as wires. These are known as the **His bundle** and **bundle branches**. These are normally the only way for electricity to get from the top to the bottom of the heart. This takes the electrical impulse to the right and left ventricles causing them to contract in an orderly and efficient fashion after the atria.