Cardiac Cycle - Diastole

Diastole is the stage of the cardiac cycle associated with refilling the heart with blood. After blood is ejected from the heart during systole, the aortic and pulmonary valves close. Both valves close to prevent backflow from the previous cycle's systole and also to allow the ventricles to fill properly. The ventricles then relax isovolumetrically until pressures are low enough for the two two atrioventricular (AV) valves to open. When this happens, the mitral valve and tricuspid valve open to allow blood from the atria to enter the ventricles. This is called ventricular filling. Later in diastole, the sinoatrial (SA) node fires causing both atria to contract and expel the little bit of blood remaining in them into the ventricles before the atrioventricular valves close. Diastole concludes when the atrioventricular valves close.



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Characteristics

Aortic Valve Closes
A-orca Valve is Closed
The aortic valve is between the left ventricle and aorta. It is closed to allow the left ventricle to fill properly, as well as prevent backflow from the previous systolic cycle.

Pulmonary Valve Closes
Lung-guy holding Valve Closed
The pulmonary valve is between the right ventricle and pulmonary artery, and it is closed during diastole. This allows blood to fill the ventricles properly, and also prevents backflow into the ventricle from the previous systolic cycle. It closes shortly after the Aortic Valve, and this difference in timing can be heard as a split S2.

Ventricles Relax
Vent-Chambers Relax
After the aortic valve closes, the ventricles relax isovolumetrically until ventricular pressure drops below atrial pressure to allow opening of the atrioventricular valves (tricuspid and mitral).

Mitral Valve Opens
Mitt-troll allowing Dice through
The mitral valve is located in between the left atrium and left ventricle. It opens to allow blood to flow from the atria to ventricles.

Tricuspid Valve Opens
Tricycle-cupid-valve is Open
The tricuspid valve is between the right atrium and right ventricle, and it opens in response to increased pressure.

Ventricles Fill
Vent-chambers Filling with dice
The ventricles fill with blood due to atrial contraction, as blood flows through the atrioventricular valves (AV valves), which are the tricuspid and mitral valves.

Sinoatrial (SA) Node Fires
Silo-nose jolting A-Trees
At the end of diastole, the SA node initiates an atrial contraction. The impulse initiating at the sinoatrial node occurs independently without neuronal input.

Atrial Contraction
A-trees Flexing
The sinoatrial node spreads a depolarization wave causing the two atria to contract simultaneously, pushing the last of the atrial blood out into the ventricles.

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