



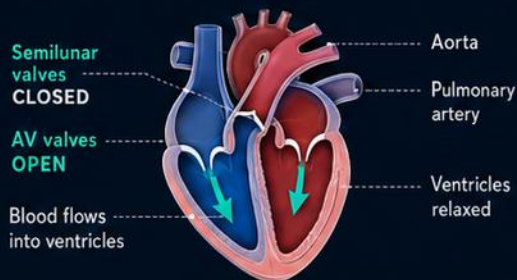
A-LEVEL BIOLOGY: CARDIAC CYCLE

PREVIEW ONLY

PRESSURE • VALVES • BLOOD FLOW

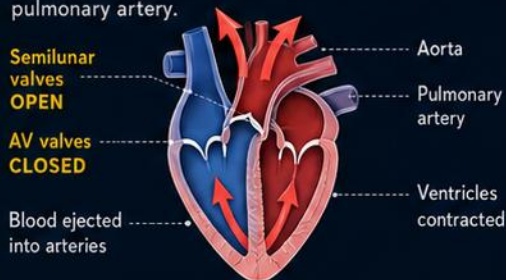
1. ATRIAL SYSTOLE

Atria contract, ventricles are relaxed.
Atrioventricular (AV) valves are **OPEN**.
Semilunar valves are **CLOSED**.
Blood moves into the ventricles.



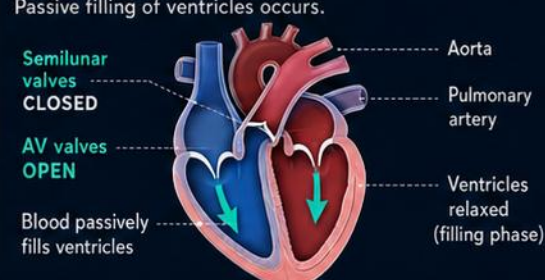
2. VENTRICULAR SYSTOLE

Ventricles contract.
AV valves **CLOSE**.
Semilunar valves **OPEN**.
Blood is forced into the aorta and pulmonary artery.



3. DIASTOLE

Heart muscle relaxes.
Pressure falls in all chambers.
Semilunar valves **CLOSE**.
AV valves **OPEN**.
Passive filling of ventricles occurs.



FEATURE	1. ATRIAL SYSTOLE	2. VENTRICULAR SYSTOLE	3. DIASTOLE
CHAMBER ACTION	Atria contract; ventricles relaxed	Ventricles contract; atria relaxed	Atria and ventricles relaxed
AV VALVES	OPEN	CLOSED	OPEN
SEMILUNAR VALVES	CLOSED	OPEN	CLOSED
BLOOD MOVEMENT	Blood flows from atria into ventricles	Blood ejected into aorta & pulmonary artery	Blood flows from veins into atria; passively into ventricles
PRESSURE CHANGES	Slight \uparrow in atrial pressure	Sharp \uparrow in ventricular pressure	Pressure falls in all chambers

EXAM TRAP

Do not confuse AV valve closure with semilunar valve opening. Remember: rising ventricular pressure **closes AV valves first**.



QUICK RECALL

- Which valves are open during atrial systole?
- What causes the first heart sound?
- When does passive ventricular filling happen?



KEY IDEA: The cardiac cycle is the sequence of contraction and relaxation that keeps blood moving efficiently through the heart.

