

From where	A. Atrial systole	B. Ventricular systole			C. Ventricular Diastole			
	1. Atrial contraction phase (late diastole)	2. Isometric (iso-volumetric) contraction phase	3. Rapid (maximum) ejection phase	4. Reduced (minimum) ejection phase	5. Protodiastolic phase	6. Isometric relaxation phase	7. Maximal (rapid) filling phase	8. Reduced filling phase
Duration	0.1 Sec.	0.05 sec	0.15 sec	0.1 sec.	0.04 sec	0.06 sec	0.1 sec.	0.2 sec.
Events	the atria contract and pump 30% of the ventricular filling (to the ventricles) ←→	It begins by closure of A.V. valve and the ventricles begin to contract isometrically (without change in muscle fiber length) - Thus, the ventricles are closed chambers filled with blood.	it begins by opening of the aortic valve and rushing of blood into the aorta where 70% of stroke volume ejected in this phase.	the remaining 30% of stroke volume is ejected to the aorta.	the period between the end of ventricular systole and the closure of the aortic valve.	it begins by closure of the aortic valve and the ventricles relax isometrically without change in the ventricular volume.	It begins by opening of A.V. valve due to the increased atrial pressure above the ventricular pressure (60% of SV is rushed to the ventricle).	10% of the stroke volume flow slowly to the ventricle.
The atrial pressure	rise from 4 mmHg to 8 mmHg and return to 4 mmHg at the end of this phase due to the atria evacuation.	rise due to bulging of the A.V. valves into the atria and also due to regurgitation of some blood into the atria before closure of the A.V. valves.	decreases due to down displacement of the A.V. valve during shortening of ventricular muscles.	increased due to venous return.	-----	increased above the ventricular pressure due to accumulation of venous return, this pressure can open the A.V. valve at the end of this phase.	- Atrial and ventricular pressure: around zero. - Aortic pressure: decreases due to escape of blood to peripheral vessels.	
Ventricular pressure	rise from 4 mmHg to 8 mmHg and return to 4 mmHg at the end of this phase as the ventricles dilate to accommodate the blood passing to it.	rise from 4 mmHg to 80 mmHg in the left ventricle.	- The ventricular and aortic pressures : rise from 80 to 120 mmHg. Because the amount of blood ejected through the aortic valve exceeds that which leaves the aorta.	- The ventricular and aortic pressures : reach their maximum and begin to decrease (due to escape of blood to peripheral circulation is more than the amount of blood ejected from the ventricle.	- The ventricular and aortic pressures: The ventricle begins to relax but still contracted and its pressure decreases about 20 mmHg and the aortic pressure decreases also (due to escape of blood to peripheral circulation). But still above the ventricular pressure. This causes the blood in the aorta to regurgitate to the ventricles leading to	falls rapidly from 90 to 0 mmHg. - Aortic pressure: due to elastic recoil of the aorta its pressure increased leading to upward (dicrotic) wave.		rises to 4 mmHg.

