

	A.S	Isometric Contraction	Rapid ejection	Reduced ejection	*Protodiastolic	*Isometric relaxation	Rapid filling	Reduced filling
Def	contraction of atrium to Pump 30%.	contraction of closed ventricle without shorting.	Pump 70%.	Pump 30%.	Last few sec of systolic just before diastolic	relaxation of closed ventricle without shorting.	Pass of 60% of atrial blood without Atrial cont	Pass of 10% atrial blood without Atrial cont
Duration	1.0s	0.5s	0.15s	0.1s	0.04s	0.06s	0.1s	0.2s
Atrial Pressure	↑↑ then ↓↓ contraction/relaxate	↑↑ bulge of cusps	↓↓ then ↑↑ filling down of cusps V.R	↑↑ V.R	↑↑ V.R	↑↑ V.R	↓↓ flow of blood.	↓↓
Ventricle Vol	↑	constant	↓	↓	constant	constant	↑	↑
Ventricle Pressure	↑ then ↓ blood enter dilatation	↑ contraction	↑ contraction	↓ مقارنة بالرحلة لقبل	↓↓↓	↓↓	↓↓ then ↑↑ flow of blood	↑ flow of blood
Aortic Pressure	↓ خروج الدم من الأورطة flow of blood	↓ خروج الدم من الأورطة flow of blood	120 دخول الدم إلى الأورطة Blood of AORTA	↓ مقارنة بالرحلة لقبل	↓ SHARP diastolic notch	↑ مقارنة بالرحلة لقبل elastic recoil	↓	↓
Heart sound	4 th	1 st heart sound تحدث في وقتها لياخذ صرختين	No Sound	No Sound	No Sound	2 nd Heart sound	3 rd Heart sound	3 rd Heart sound
Valves *	AV open SV close	All valves are closed	A.V closed S.V Open	A.V closed S.V Open	A.V closed S.V Open	All Valves are closed	A.V open SV closed	A.V open SV closed

N.B
 S.V are opened (3,4,5)
 A.V are opened (7,8,1)
 All are closed (2,6)