

Contraction

relaxation

Phase / Change	Late diastole	Ventricular systole			Early diastole			Middiastole
	A.systole	isometric cont. <i>isovolumic</i>	Maximum ejection <i>Rapid</i>	Reduced ejection	proto diastolic	isometric relaxation <i>isovolumic</i>	Maximum filling	Reduced filling
Ventricular pressure	0.1 sec ++ due to A.systole then -- due V. diastole	0.05 ++ 4 → 80 (L V) ++ → 10 (R V) ends by opening of semilunar valves	0.15 ++ → 120 (highest vent. P) ++ → 25 70% of SV	0.1 -- 30% of SV	0.04 --	0.06 -- → 0 0	0.1 -- Early V. relax > V. filling then ++ V. filling > V. relax.	0.2 + 10% of SV
Ventricular volume	↑ 20ml reach → EDV = 140	constant	↓ rapidly	↓ slowly reach ESU = 70	constant	constant	↑	↑ gradually
Aortic pressure				++ then --		++ dicrotic wave <i>insurica</i>		
Atrial pressure	++ 4 → 8 → 4 <i>A.systole evacuation.</i>	+++ bulg of AV valve	---	++ venous return		++ PA > PV <i>venous return</i>		
AV-valve	opened	CLOSED					OPEN	
Semilunars <i>specific pulmonary</i>	CLOSED	open	open	open	CLOSED			
Heart sounds	S4 weak / inaudible vibration of atrial muscle rushing of blood into ventr. <i>البريق البشري</i>	S1 <i>Lup / Long / low pitch</i> due to closure of AV valve. 1st component <i>الجزء الثاني من S1</i> rushing of blood into aorta & pulmonary arteries				S2 closure of semilunar valves	S3 rushing of blood into ventricles from atrium <i>الجزء الثالث</i>	
EKG	P wave قبل الـ 0.2 → ا. systole	QRS قبل الـ 0.02 من بداية الـ vent. systole	T wave بدايتها			T wave نهايتها		
Coronary blood flow		Minimum				Maximum		