

Heart Murmurs and Heart Sounds:

The first heart sound or S1 is caused by the closing of the atrioventricular valves. The second heart sound, S2, is caused to prevent blood flowing back from the pulmonary arteries or the aorta into the ventricles. In older patients it can indicate heart failure as the heart is stiff and weak so they reached their limit quicker than normal. The atria is trying to force blood in and this is causing a turbulent flow and what it sounds like is little of dub so let's have a listen and see if you can distinguish that fourth heart sound just before the first one now let's talk about heart murmurs. When you're listening to murmurs you want to auscultate with the bell of your stethoscope to hear low pitched sounds. Heart disease can cause hypertrophy which is where the heart muscle thickens outwards and into the chamber of the heart. It can lead to dilatation where the muscle gets thinner and expands think of it blowing up like a balloon. When you have mitral stenosis the left atrium is pushing really hard against that mitral valve. The heart muscle is pushing against a stenotic valve it has to work a lot harder.

Mitral regurgitation is when an incompetent mitral valve allows blood to flow back through during systolic contraction in the left ventricle. During systole there's blood flowing backwards through this valve, which results in a high-pitched whistling murmur due to the high velocity of blood flow through the leaky valve. It can also be associated with ischemic heart disease, infectious endocarditis, rheumatic heart disease, and age-related calcification of the mitral valve. The most common cause of aortic stenosis is just idiopathic age-related calcification of the valve, which is due to difficulty maintaining good flow of blood to the brain through that narrow valve. The final murmur that we're going to talk about is aortic regurgitation, which is associated with a slow rising pulse and a narrow pulse pressure. When you palpate the pulse, it'll be slow to rise and when you do the blood pressure, it'll be low.