



## Heart Disease and Heart Murmurs

A heart murmur is an abnormal sound made by the heart. The normal “lub-dub” sound is replaced by a whooshing noise. The loudness of the murmur is graded out of 6 with 1 out of 6 being the quietest or “softest” murmur and 6 out of 6 being the loudest murmur. The severity of the disease does not always correlate with the intensity of the murmur.

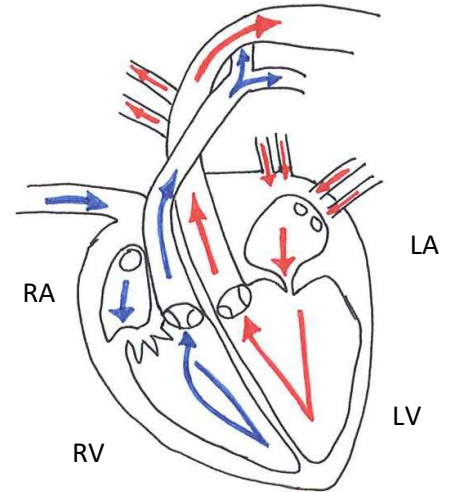
### What causes a heart murmur?

The heart's role is to pump blood to the lungs to remove CO<sub>2</sub> and collect oxygen then pump that fresh oxygenated blood to the rest of the body tissues. Turbulence of the blood while being pumped is what causes heart murmurs. This is what can be heard using a stethoscope. What a stethoscope cannot tell us is what exactly is causing the turbulence.

Innocent murmurs are murmurs with no associated heart disease, most often seen in puppies and will often disappear by 16 weeks of age.

Problems with incomplete closure of the heart valves is a common cause of turbulent blood flow. Valves are needed to aid in keeping the blood moving forward and not backwards. If a valve is leaky, blood will start to swirl and turbulence occurs, creating an audible murmur.

**Heart Anatomy:** Blood enters the heart from the body into the right atria (RA). It then passes through the tricuspid valve into the right ventricle (RV). The blood is then pumped through the pulmonic valve to the lungs where it becomes oxygenated. It then returns to the heart through the left atria (LA), passing through the mitral valve and into the left ventricle (LV). Finally, it is then pumped through the aortic valve to the aorta and distributed to the rest of the body.



Leaky valves are not the only cause of heart murmurs. Heart muscles that are too thick (hypertrophic cardiomyopathy in cats) or heart muscles that are too stretched out and thin (dilated cardiomyopathy in dogs—specifically Dobermans, boxers and great danes) cause the heart to have a poor pumping ability and can result in an audible heart murmur. Other less common reasons, such as stenotic vessels or abnormal holes between heart chambers can also result in heart murmurs.

### Medical Treatment

Medical treatment for heart disease can vary depending on the severity. Treatment for heart failure can include a positive inotropic medication called vetmedin that will assist the heart to pump more effectively, an ACE inhibitor that will help open vessels and diuretics to help clear fluid from the lungs. Sometimes medications to help with abnormal heart rhythms are needed as well.





## Heart Disease versus Heart Failure: The Stages

When a heart murmur is first heard, that is evidence of changes occurring within the heart. The stages of heart disease and heart failure are defined for us to better know what diagnostic tests and therapies are recommended.

