



Vet Notes

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Heart murmurs in horses

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A heart murmur is caused by a disturbance in blood flow through the heart. Some murmurs are physiologic, meaning they are normal for that horse, and some are pathologic. Some common causes of murmurs in horses are discussed, as well as prognosis and treatment:

Aortic regurgitation/insufficiency

The aortic valve – separating the left ventricle of the heart from the aorta - is a common source of murmur in older horses. As horses age, the valve begins to leak, and when the heart is finished contracting, some blood leaks through the valve back into the heart causing the murmur that can be heard. Severity of aortic regurgitation varies from mild, with no effects on the horse's performance, to severe, leading to congestive heart failure.

Mitral regurgitation/insufficiency

The mitral, or bicuspid valve separates the left atria and left ventricle of the heart. Heart murmurs from the mitral valve are common and can develop in active, fit horses as a response to training. Athletic horses with mild mitral regurgitation and no other cardiac disease can compete and race as normal without concern. Mitral regurgitation that is severe or in combination with other cardiac abnormalities tends to progress, and can cause poor performance and progress to congestive heart failure.

Tricuspid regurgitation/insufficiency

The tricuspid valve separates the right atria and right ventricle of the heart. Like mitral regurgitation, murmurs from the tricuspid valve can be present in normal active horses with no effect on performance, however, can also be severe or in combination with other cardiac abnormalities. In general, valvular leakage on the right side of the heart is less likely to cause clinical signs even in moderate amounts because of the low pressures on this side of the heart.

Ventricular septal defects

The ventricular septum divides the 2 large chambers of the heart into a left ventricle (oxygenated), and right ventricle (deoxygenated). A defect in this septum is the most common congenital heart defect in horses, and results in oxygenated blood from the left side of the heart, crossing through the defect to the right side and recirculates to the lungs instead of the remainder of the body. With a small defect, horses can compensate and live a perfectly normal life. With a large defect, horses cannot compensate and may die or be euthanized, thus they are often detected in young foals.

If a murmur is heard in a young foal, or a horse recently acquired with an unknown history, a ventricular septal defect is a possible cause and an echocardiogram (ultrasound exam of the heart) can generally confirm the presence and size of a defect.

Any murmur should be investigated if they are new, or if your horse has other clinical signs, such as: exercise intolerance, bounding pulses, abnormal heart rhythm, difficulty breathing, abnormal recovery from exercise or an unexplained cough.

Investigation of heart murmurs almost always includes echocardiography. Ultrasound examination of the heart provides information to determine the severity of the condition and will guide the best course of treatment for your horse. Some of the information that can be collected is size of heart chambers, the speed of blood flow across a leaky valve, contractility of heart chambers, visualization of abnormal heart valves, and visualization of abnormal blood flow.

There is medication that can be prescribed to horses with leaky valves that can help to delay worsening of the condition. Horses with mild valve regurgitation would benefit from a thorough physical examination annually to monitor for any changes in the condition. Horses with moderate or severe valve regurgitation are recommended to undergo an echocardiogram every 6 months to monitor progression. Horses with severe regurgitation are at risk of collapse and can pose a risk to themselves and riders if they are experiencing cardiac rhythm disturbances or are in congestive heart failure.



Dr. Amanda Avison is from a small town in Southern Ontario where she grew up riding horses. She moved to Guelph, Ontario where she obtained a Bachelor of Science with honours in Animal Biology, her Doctorate of Veterinary Medicine and met her husband, Mitch. Her professional interests include cardiology, lameness and neonatology. When she's not at the clinic you will likely find Amanda in the pool, trying to hide from the Florida heat!

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