

Degenerative Atrio-Ventricular (AV) Valve Disease in Dogs

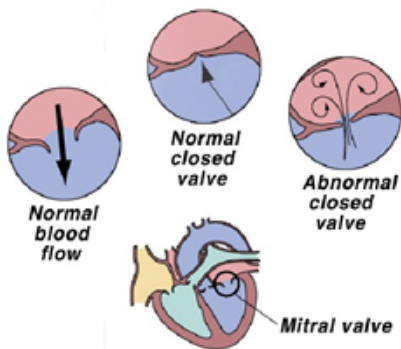
My dog was diagnosed with degenerative AV valve disease. What does that mean?

Degenerative AV valve disease has many synonyms, including chronic valve disease (CVD), endocardiosis, and mitral valve disease (MVD). The disease develops in the middle to later stages of a dog's life and is characterized by thickening and deterioration of the mitral and/or tricuspid valve leaflets in the heart. In general, the mitral valve is more commonly affected in dogs. The underlying cause for valvular degeneration is still unclear, but ongoing studies at major veterinary teaching facilities are aimed at its identification. Any dog can develop degenerative AV valve disease. However, the disease is more common in toy and small breed dogs, in particular:



- Cavalier King Charles Spaniels
- Chihuahuas
- Dachshunds
- Miniature Poodles
- Pomeranians
- Yorkshire Terriers

How is this affecting my pet's heart and health?



Thickening and degeneration of AV valve leaflets leads to poor *coaptation*, or closure, of the leaflets during cardiac pumping. The end result is *regurgitation*, or backwards flow of blood, into the heart's corresponding atrium during cardiac pumping and a subsequent decrease in the amount of blood appropriately pumped to the body. Over time, the body's natural response to this decrease in flow is retention of sodium and water.

Such actions lead to increased blood volume, heart enlargement, and circulatory congestion. If circulatory congestion is severe, fluid can leak into the surrounding tissues, a syndrome known as *congestive heart failure (CHF)* (for more information see our educational brochure, *Heart disease and congestive heart failure*). Advanced disease may also lead to abnormal cardiac rhythms, pulmonary hypertension or rarely, rupture of the left atrium itself.



How is this diagnosed?

Detection of AV valve disease generally begins with hearing a heart murmur during a physical examination with a veterinarian. Identifying a heart murmur based on timing, quality, and location allows family veterinarians and veterinary cardiologists to accurately diagnose degenerative AV valve disease in most dogs, particularly in breeds considered to be higher risk for the disease (see Page 1). Radiographs (X-rays) and echocardiography (cardiac ultrasound) are not required for diagnosis in many cases, but provide valuable information about a pet's heart structure and function as the disease progresses, which aids in selecting appropriate therapy.

Can this disease be treated?

Since the cause of disease is not yet known, prevention or slowing of the valvular degeneration itself is not currently possible. In the pre-heart failure state (prior to the onset of symptoms) treatment will likely be recommended if heart enlargement is detected. Once congestive heart failure has developed, additional therapy is required to relieve symptoms, keep your pet comfortable, and maintain a good quality of life.

Recent medical advances have shown that surgical therapies for degenerative valve disease in dogs, such as open-heart valve repair, have the potential to be highly successful, but due to significant surgical risk, owner cost, and need for cardiopulmonary bypass, these surgical therapies are currently only available at a very small number of institutions around the world. Exploration of less invasive means of valve replacement or repair in dogs is currently underway. Heart transplantation is not performed in companion pets at this time.

Do all dogs with degenerative AV valve disease develop congestive heart failure?

No, for reasons that remain unknown, some dogs with degenerative AV valve disease do not develop significant cardiac enlargement or clinical illness during their lifetime. Unfortunately, it is not possible to predict whether or not a dog will fall into this category ahead of time.

What is my pet's prognosis?

Since not all dogs with this disease go on to develop heart enlargement and congestive heart failure, prognosis for dogs without heart enlargement at the time of examination is difficult to predict. Because of the variable progression of this disease, it is best to consult with a veterinary cardiologist at AERA to determine the prognosis of your pet. Regardless, we will do everything in our power to keep your pet comfortable, relieve side effects and symptoms, and improve his or her quality of life.