

# Valvular Heart Disease

- Heart valves help control movement of blood through the heart; valvular heart disease can develop when heart valves are not working properly.
- Your veterinarian may recommend a cardiac evaluation if valvular heart disease is suspected.
- Most cases of valvular heart disease are treated with medication, but severely affected pets may not survive, despite medical treatment.

### What Is Valvular Heart Disease?

In dogs and cats, the heart contains four valves. Opening of a heart valve allows blood to flow freely from one heart chamber into the next chamber or vessel. Closing of the valve prevents blood from “backflowing” (flowing into the previous chamber).

With valvular heart disease, one or more heart valves become damaged and unable to adequately control movement of blood through the heart. Damaged valves may become thickened, tear away from their attachments, or lose the necessary flexibility to move freely. When the valves don't function properly, blood flow through the heart can become turbulent or irregular. Backflow can also occur. These changes force the heart to work harder, which causes additional heart damage over time. This can lead to a condition called *congestive heart failure*, which is when the heart is unable to function appropriately. Valvular heart disease is one of the most common causes of heart failure in dogs; congestive heart failure can be fatal, especially if not treated.

### What Are the Clinical Signs of Valvular Heart Disease?

With mild valvular heart disease, your pet may appear completely normal. However, clinical signs in more severe cases can include the following:

- Coughing
- Exercise intolerance (difficulty exercising)
- Lethargy (tiredness)
- Difficulty breathing
- Fainting or collapsing episodes

### How Is Valvular Heart Disease Diagnosed?

Your veterinarian will likely diagnose valvular heart disease based on results of a cardiac examination. A cardiac exam helps to assess the overall health of the heart and circulatory system. Your veterinarian may perform some or all of these tests to diagnose your pet's heart condition:

- **Auscultation:** Your veterinarian will listen to your pet's heart and lungs using a stethoscope, which magnifies the sounds of the heart and lungs. The scientific term for this process is *auscultation*. As your veterinarian listens, he or she may detect irregular heartbeats, an abnormal rhythm, or a heart murmur, all of which can be associated with valvular heart disease. He or she may also hear abnormal lung sounds, such as sounds produced by fluid buildup, which can occur with congestive heart failure.

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- **Blood tests:** Results of blood tests can provide your veterinarian with a large amount of information about your pet's heart. Useful blood tests may include a heartworm test, chemistry profile, and complete blood count (CBC).
- **Electrocardiography:** Electrocardiography (also called an *ECG* or *EKG*) is used to check for abnormalities in the heart's rhythm. An ECG detects electrical changes associated with the beating of the heart. The electrical changes are recorded by the ECG machine and then interpreted by a veterinarian. An ECG can determine whether the heart is beating too slow or too fast or whether there are irregular beats.

## Common Conditions

It can also reflect changes associated with heart enlargement.

- **X-rays:** Chest x-rays can show the size, shape, and position of the heart. Because valvular heart disease causes the heart to work too hard, the heart muscle can become thickened, and the heart can become enlarged. X-rays also show your veterinarian your pet's lungs. If congestive heart failure has caused fluid to accumulate in the lungs, your veterinarian will be able to evaluate this.
- **Blood pressure:** Your veterinarian may have equipment that can measure your pet's blood pressure. Heart disease can cause changes in blood pressure that can contribute to additional illness. Blood pressure that is too low or too high may need to be treated with medication.
- **Cardiac ultrasound:** Your veterinarian may have equipment that can perform a cardiac ultrasound examination (or *echocardiogram*). The ultrasound machine is connected to a small handheld probe that is held against your pet's chest. The probe sends out painless sound waves that bounce off of structures in your pet's chest (such as the heart and blood vessels) and return to a sensor inside the ultrasound machine. This creates an image on a screen that can tell your veterinarian a great deal of information about your pet's heart. Cardiac ultrasound permits your veterinarian to look

at the motion of your pet's heart valves as the heart is beating. This can provide valuable information about how well the valves are functioning.

### How Is Valvular Heart Disease Treated?

Most cases of valvular disease are treated with medication. Medication can help the heart work more efficiently; it can also help remove excess fluid that may have built up in the lungs. Severely affected pets may not survive, despite medical treatment.

Sometimes, a special (low sodium) diet is recommended for pets with valvular heart disease. Your veterinarian can also advise you about whether it is safe for your pet to exercise, how much exercise is recommended, and what types of exercise are safe for your pet.

Patients with heart disease should return for scheduled recheck examinations. Your veterinarian may want to repeat some diagnostic tests to see if treatment is improving your pet's medical problem. Your veterinarian may also want to perform blood work periodically to monitor for medication side effects, such as dehydration or kidney damage.

Surgical procedures are being developed to replace damaged heart valves in animals, but it may be many years until these procedures are available for veterinary patients. At this time, studies are being conducted that may provide more insight into future treatment options.