

# Heart Failure

## ABOUT THE DIAGNOSIS

**CAUSE:** In healthy animals, as in healthy people, a normally functioning heart distributes blood continuously and evenly throughout the circulation to supply all the organs and tissues. However, some animals may develop heart disease, which compromises the circulation. The body has ways of reducing the impact of such heart problems, which keeps symptoms in check. If the underlying heart problem is ongoing, however, eventually the circulation is hampered beyond the body's ability to compensate. The situation in which any heart disease or heart problem progresses to the point of outstripping the body's ability to contain it is called **heart failure**.

Heart failure is a misleading term because at first glance, it implies that the heart has stopped. However, the term "heart failure" is used medically—both in people and in animals—to mean that the heart is not doing nothing, it is simply not doing enough. "Heart insufficiency" would probably be a more accurate term but "heart failure" is embedded in medical terminology.

Heart failure represents a situation where the pumping action of the heart is still active and effective, but not quite enough for the body's needs. In **congestive heart failure**, the hampered blood flow leads to leakage of clear fluid (blood plasma) into the lung tissue (pulmonary edema) or into the body cavities such as the chest (pleural effusion) or abdomen (ascites). This fluid leakage is responsible for the symptoms of congestive heart failure, which most commonly include shortness of breath, coughing (dogs), exercise intolerance, and distention of the abdomen.

Heart failure is both a setback and an opportunity. It is a setback because it indicates that despite the body's efforts, the underlying heart problem has worsened to a degree that cannot be kept hidden, or asymptomatic. Dogs and cats with heart failure, like people with heart failure, typically show outward signs of exhaustion or breathlessness because the heart is not working well. However, heart failure is also an opportunity because most of the medications in veterinary medicine that help with heart problems function to help once heart failure has occurred. That is, our ability to help heart disease in a dog or cat is very limited in the early stages, at least in part because the body does a good job of this on its own. Once heart failure has emerged, daily medications can be life-saving and they can restore a normal quality of life to an individual that otherwise would have difficulty surviving.

Virtually any heart problem, if severe enough, can cause heart failure. Some of the more common causes include a poor seal (insufficiency, or regurgitation) in one or more of the one-way valves in the heart that are meant to keep the blood flowing appropriately in the correct direction; weakening or unexplained thickening or stiffening of the heart muscle tissue (cardiomyopathy); the presence of heartworms in the heart; and diseases of the lining around the heart (pericardium). Some dogs and cats are born with heart abnormalities (congenital cardiac problems) that may eventually lead to congestive heart failure if the problem is not diagnosed and treated until months or years later. Some breeds are genetically predisposed to heart abnormalities that lead to congestive heart failure. Any of these types of heart problem may overwork the heart over time, and if the heart is not able to keep up with the body's demands, the result is congestive heart failure.

Heart failure can develop in all breeds of dogs and cats. The course of heart failure ranges from mild at one end of the spectrum to advanced and life-threatening at the other. Early in the disease process, symptoms may not be evident. However, under any circumstance, heart failure is a serious concern. With heart failure, symptoms are apparent (whereas there may not have been symptoms regardless of how long the underlying heart problem has been present); symptoms, especially labored breathing, can become life-threatening if the patient is not examined and treated by a veterinarian; and treatment, usually in the form of medications given every day, but sometimes surgery, is indispensable for life.

The terms "congestive heart failure" and "heart failure" often are used interchangeably and generally mean the same thing. They are slightly misleading in that "congestive heart failure" may sound worse. In fact, both mean a disturbance to the circulation caused by a heart problem that is no longer contained by the body's own control mechanisms, and are considered synonymous.

**DIAGNOSIS:** When heart failure occurs, it is almost always the result of longstanding heart problems. Therefore, many patients with heart failure have other signs of heart abnormalities, such as a heart murmur (which may have been present for weeks, months, or years) or a very abnormal, irregular heart rhythm (arrhythmia). Many other types of diseases may also produce these kinds of symptoms, however. Your veterinarian will ask you several questions—such as what you have seen of the appearance and duration of symptoms, current medications, past medical problems if any, etc.—and perform a thorough physical exam, including listening carefully to the heart with a stethoscope, to better assess the function of the heart. Identifying pulmonary edema (water in the lungs), one of the main features of congestive heart failure, requires x-rays of the chest. In most cases, a cardiac ultrasound (echocardiogram, cardiac sonogram) is also needed since it is the best way of determining the heart's inner structure and its function. Like ultrasound for humans, it is noninvasive (no anesthesia or surgery necessary to perform it, only sedation in some cases) and requires only a shaved area around the sides of the chest in some dogs or cats. Blood work, such as a complete blood count and serum chemistry profile, and a urinalysis, provide information about the pet's overall health status and the function of the kidneys and liver. This is necessary to help your veterinarian determine which medications are likely to be best tolerated and most appropriate.

Many or all of these tests may be necessary to determine whether your dog or cat has heart failure. You should feel free to ask your veterinarian about the importance and significance of the tests.

## LIVING WITH THE DIAGNOSIS

Once a heart problem has advanced to the point of causing heart failure, the prognosis (outlook for life span) is guarded; some individuals with very severe heart failure that does not respond well to medications live only days or less after heart failure has been confirmed, whereas most others, which are not so severe, do well with medications and live comfortable lives for a period of weeks, months, or years, depending on the degree of underlying heart

disease. Heart failure is a condition that is always serious and that frequently compromises life expectancy, but at the same time, cardiac patients receiving medication at home are generally comfortable and happy and live on for a significantly longer period.

With heart failure, lifelong medication is usually required. Give medications exactly as directed. It may be necessary to eventually change dosages and medications, depending on your dog's or cat's response to the medication and on progression (worsening) of the underlying heart problem.

With patients who have been in heart failure at any time, even if the situation is much improved with medications, some degree of restriction of exercise is usually necessary. Do not force your dog or cat to exercise if they are reluctant to do so. The specifics vary from one animal to the other and should be discussed with your veterinarian.

Feed only the diet(s) that is recommended. Many treats have a high salt content and should be avoided because salt in foods or treats neutralizes the beneficial effects of the most important heart failure medications (diuretics); talk to your veterinarian about which foods and treats are preferred, including the possibility of home-cooked diets that are formulated to be nutritionally balanced for dogs or cats (both very different from each other and different from nutritional balance for humans).

## TREATMENT

Treatment depends on the cause, the stage of disease, and your pet's health status. Your pet may be hospitalized and given oxygen and injectable medications in an intensive care setting if the degree of heart failure is very serious. On the other hand, patients with a milder case of heart failure can be treated as outpatients (home with medications, without hospitalization). This illustrates, once again, that the term "heart failure" sounds profoundly discouraging, whereas what it represents is a setback, rather than automatically the end stage, of a heart problem.

Your veterinarian will tailor the medication regimen for your pet, typically to include a combination of some of the following drugs. Diuretics ("water pills") move retained fluid out of the lungs, abdomen, and other areas by causing this excess fluid to be voided out in the urine. Your dog or cat may drink more water and urinate more often while taking a diuretic. Digoxin increases the strength of the heart's contraction and helps prevent it from beating excessively fast. Drugs called ACE inhibitors relax blood vessels so that blood can flow more easily and the heart can pump more effectively. Antiarrhythmic drugs work to normalize the rhythm of the heartbeat in cases where it is erratic. Pimobendan is a powerful drug that increases the strength of the heartbeat and opens the blood vessels.

In addition to medication, a diet low in sodium (low salt) is important in the long-term. There are several commercially available diets formulated specifically for dogs and cats with congestive heart failure. Your veterinarian can recommend one, but the most important aspect of using these diets is to make sure your pet's appetite is no less than it otherwise would be.

## DOs

- Take your dog or cat to your veterinarian or to the local emergency clinic immediately if difficult breathing occurs. This can appear as "belly breathing" in cats and "air starvation" (gasping) in dogs.
- Understand the difference between panting and labored breathing in dogs. With panting, the dog is still alert to his/her surroundings, responds normally when called or petted, and

appears comfortable. With labored breathing, which could be indicative of congestive heart failure, there is an additional degree of strain associated with each breath, the dog has an absent or vacant expression, or is focused only on breathing, and is unlikely to want to lie down or seems uncomfortable when trying to do so. Any combination of these symptoms warrants a call or (immediate visit) to a veterinarian.

- Inform your veterinarian if your dog or cat has ever been diagnosed with a medical condition and is taking medication, since these may interfere with medications for heart failure (and your veterinarian would substitute an alternative medication to avoid problems).
- Give medication exactly as directed by your veterinarian and if you are concerned about possible negative effects, discuss them with your veterinarian immediately rather than simply discontinuing the treatment.
- Realize that heart failure is a serious but not hopeless condition, and that in most cases, patients become comfortable with medication but may require those medications for the rest of their lives.

## DON'Ts

- Do not postpone visiting your veterinarian if you observe any symptoms of heart failure (see [Signs to Watch For](#) below). Prompt diagnosis can make treatment more effective and can make your dog's or cat's life more comfortable.
- Do not give medication that you have at home that has been prescribed for human use; some of these may interfere with treatment and cause even more severe problems.
- Do not underestimate the impact of congestive heart failure on patients who have it. Even if medications make a dog or cat comfortable and "back to his/her usual self," most heart problems that cause heart failure are serious, and the medications do not cure the underlying problem- they simply remove the symptoms and allow a pet to feel comfortable and well. You should talk to your veterinarian about activity level and whether there are certain types of activity that may be riskier than others and should be avoided.
- Do not give treats or foods with salt in them to patients who have heart failure. Even small amounts of excessive salt in these patients can cause fluid retention and a relapse of heart failure.
- Do not worry about fat and cholesterol content, however. Dogs and cats with heart problems do not have the same kind of coronary artery disease as do humans, and dietary fat is not a concern for the heart.

## WHEN TO CALL YOUR VETERINARIAN

- If you cannot keep a scheduled appointment.
- If you are unable to give medication as directed.

## SIGNS TO WATCH FOR

- Watch for general signs of illness, which could be related to medication intolerance or illnesses involving other parts of the body and which include lethargy, vomiting, diarrhea, decreased appetite, weight changes, and changes in behavior such as hiding more than usual and aggressiveness.
- Watch for signs of congestive heart failure, which include labored breathing (dyspnea), exercise intolerance, increasing fits of coughing (often with the appearance of "wanting to cough something out"), bloated abdomen (as a result of fluid accumulation), or fainting (syncope).

## ROUTINE FOLLOW-UP

- Follow-up appointments are scheduled to monitor progress, typically within 10 to 14 days of the time heart failure is first diagnosed. At the time of follow-up, x-rays of the chest and a blood sample are routinely checked to make sure the fluid retention of congestive heart failure has cleared, to determine if treatment should be adjusted, and to pursue any abnormalities on previous blood tests. Further rechecks are always necessary, but the interval varies from a few weeks to every 6 months, depending on the way the disease progresses.

*Other information that may be useful: "How-To" Client Education Sheets:*

- How to Count Respirations and Monitor Respiratory Effort

Practice Stamp or Name & Address