

# Congestive Heart Failure in Dogs

## What is congestive heart failure?

**Congestive heart failure (CHF)** is the result of disease causing the heart to be a less efficient pump for blood in the body. When it no longer keeps blood moving forward, some blood backs up into the blood vessels “behind” the heart. This is called congestion, much like a traffic jam. Pressure then builds up in those vessels, eventually becoming high enough that fluid leaks out of them and collects in certain parts of the body.

If the left side of the heart fails, then fluid collects inside the lungs (called *pulmonary edema*), because in the circuit of blood flow in the body, the lungs are situated just “behind” the left heart chambers (left atrium and left ventricle). If the right side of the heart fails, fluid collects in body cavities (called *pleural effusion* in the chest cavity, and abdominal effusion or *ascites* in the abdominal cavity), because the tissues of the body are situated “behind” the right heart chambers (right atrium and right ventricle).

## How is CHF diagnosed?

Suspicion for CHF begins during **physical examination**. If fluid accumulates inside the lungs (called left-sided congestive heart failure), this may be heard with a stethoscope as crackling sounds. Because this fluid reduces the amount of oxygen that can enter the body, the rate of breathing may be higher than normal. Breathing may also appear to be labored. Fluid may also accumulate “loose” in the chest or abdominal cavities (called right-sided congestive heart failure). Fluid around the lungs makes it difficult to hear breath sounds with a stethoscope. Breathing may, again, appear labored due to an inability of the lungs to expand. Ascites or abdominal effusion (fluid in the abdominal cavity) may make the abdomen appear and feel distended.

Definitive diagnosis of CHF is made using **chest x-rays**. When CHF is present, chest x-rays often show an enlarged heart, as well as blood vessels that are distended due to the congestion of blood. Fluid may be seen in or around the lungs. This test is crucial, not only for the initial diagnosis of CHF, but also for monitoring response to therapy. If the fluid in the chest lessens or disappears after beginning medications for heart failure, doses of certain drugs may sometimes be lowered. On the other hand, if the response is found to be inadequate, doses may be increased, or new drugs may be added.

An **echocardiogram** (ultrasound examination of the heart) may show enlargement of one or more of the heart’s chambers, as well as an abnormality that has led to the enlargement, such as leaky or “insufficient” valves, thin and weak heart muscle, or a variety of other abnormalities. Free fluid in the chest cavity (pleural effusion) may also be seen during this procedure. Similarly, if fluid is present in the abdominal cavity, this can be seen using ultrasonography as well.

An **electrocardiogram (EKG)** is often performed to look for arrhythmias (abnormalities in cardiac rhythm) that may be present along with heart failure, particularly if an arrhythmia is suspected based on physical examination. With an EKG, determination of the exact nature of an arrhythmia allows us to decide if it requires therapy, and if so, which type of therapy is most appropriate. Repeating an EKG after an antiarrhythmic medication is begun allows adjustment or addition of medications as necessary.

Blood work including a **complete blood count** and **serum biochemistry profile** should be performed prior to therapy, along with **urine analysis** if possible. These provide information as to other concurrent conditions that may be present, and also yield baseline data before medications are used. Parts of these tests are repeated at intervals once therapy is initiated in order to monitor hydration status, kidney values and electrolyte concentrations, since these can be affected by the medications used to treat heart failure.

## **How is CHF treated?**

The goal of therapy for CHF is to reduce fluid accumulation and the workload on the heart. Medical therapy usually includes at least two medications. **Furosemide** (also called **Lasix**) is a *diuretic* medication which increases urination, causing fluid to leave the body and, therefore, the lungs and body cavities. The second medication is a member of a group of drugs called “**ACE inhibitors**,” such as **enalapril**. ACE inhibitors cause blood vessels to relax, making it easier for the heart to pump blood through them. Other medications may be added, depending on the specific type of heart disease identified.

Therapy for right-sided heart failure sometimes includes physical removal, using a needle and syringe, of the fluid that has accumulated in one or both body cavities. This is called thoracentesis when fluid is removed from the chest cavity (or thoracic cavity), and abdominocentesis when fluid is removed from the abdominal cavity. Such fluid removal, when necessary, can provide quick relief and dramatic improvement in symptoms. Occasionally, sedation is necessary to provide optimal safety during this procedure.

## **What is the prognosis? What should I watch for?**

In the short term, congestive heart failure can often be resolved with medical therapy, after which quality of life can be excellent for as long as the medications remain effective. Long-term prognosis is generally guarded once congestive heart failure has been diagnosed, but this is highly variable, depending on the severity of the underlying heart disease as well as each individual dog’s response to therapy.

It is important to watch for symptoms that may indicate return or worsening of heart failure. These may include **coughing, lethargy, weakness, intolerance to activity or exercise, loss of appetite, abdominal distension, rapid or labored breathing**, and episodes of **fainting or collapse**. If any of these are noted, please contact either your regular veterinarian or Dr. Marshall at Veterinary Specialty Services as soon as possible to discuss an appropriate plan. If you feel that the problem should not wait and requires immediate attention, then an emergency visit is warranted.