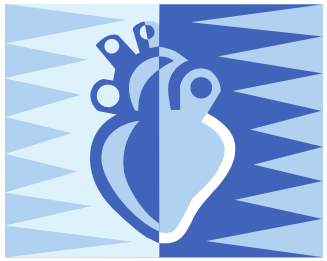

How is heart failure classified?

Whether left or right-sided, the severity of heart failure is assessed by evaluating the level of activity the patient can achieve before experiencing clinical signs. This ranges from Class I patients who are capable of strenuous exercise to Class IV patients who are compromised even at rest.

What are the goals of treatment?

The primary goal of treating CHF is to manage the clinical signs by reducing the formation of edema and effusion and to increase cardiac output (delivery of blood to the tissues). A variety of therapies are available and will be tailored to meet your pet's current needs.

The most commonly prescribed medications include digitalis glycosides, diuretics, and ACE inhibitors. Different medications may also be prescribed depending on your pet's underlying heart disease and severity of the heart failure. A sodium restricted diet may also be recommended along with restricted exercise. Please keep in mind that heart failure therapy is dynamic and will necessitate regular checkups with your veterinarian to ensure your pet's needs are being met.

What should I monitor at home?

It is important that you monitor your dog's overall attitude and any change in appearance. It may be helpful to keep a record of your pet's breathing rate so that you will notice changes from his or her normal breathing pattern sooner. If you notice any of the following, please call us immediately:

- heavy or labored breathing
- reduction in appetite
- fainting spells
- restlessness
- profound lethargy

Thank you for visiting the cardiology service at the Ryan Veterinary Hospital. If you have any further questions, please do not hesitate to contact us.

Penn Veterinary Medicine
Matthew J. Ryan Veterinary Hospital
Section of Cardiology

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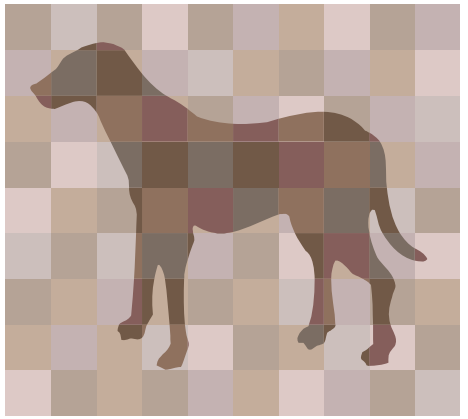
Understanding Canine Congestive Heart Failure

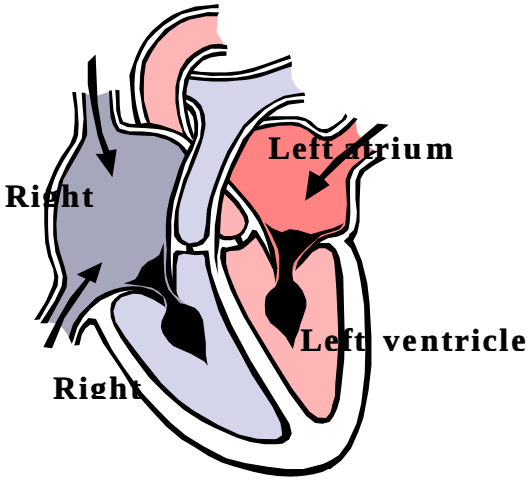


Many Species. One Medicine.

Congestive Heart Failure

How does the heart work?

The heart is the organ responsible for maintaining the circulation of blood within the body. It is a four-chambered organ containing right and left atria (upper chambers) and ventricles (lower chambers). The right side pumps deoxygenated blood returning from the venous system in the body into the lungs. From the lungs, oxygenated blood enters the left side of the heart where it is pumped out into the tissues of the body through the arteries.



What is Congestive Heart Failure?

Heart failure is a clinical syndrome that describes the end result of severe heart disease. Heart disease is always present when heart failure is present; however, heart disease can be present and never lead to congestive heart failure.

Congestive heart failure (CHF) occurs when high diastolic pressures in the heart "back up" into the veins and capillaries causing fluid to leak out of these vessels (edema).

Heart failure is the end-result of many different cardiac and pericardial (the sac that surrounds the heart) diseases. These include, but are not limited to:

- Decreased myocardial contractility (a weak heart muscle) which is commonly seen with dilated cardiomyopathy.
- Valvular regurgitation (leak in one of the four heart valves) as seen with mitral and tricuspid regurgitation.
- Increased myocardial stiffness impairing the heart's ability to fill with blood as seen in feline hypertrophic cardiomyopathy.

What is the difference between right-sided and left-sided congestive heart failure?

The terms right and left-sided refer to the side of the heart into which return of blood from the veins is impeded (resulting in venous congestion).

Congestive left -sided failure - blood return from the lungs to the left ventricle is impeded resulting in congestion within the pulmonary (lung) vessels. This leads to pulmonary edema (fluid accumulation within the lungs). Common clinical signs observed include:

- Exercise intolerance
- Tachypnea (increased respiratory rate) or dyspnea (difficulty breathing/respiratory distress)
- Coughing
- Fainting

Congestive right-sided failure - blood return from the body to the right ventricle is impeded resulting in congestion in the systemic circulation. This systemic congestion can manifest as:

- Ascites (excessive fluid within the abdomen seen as abdominal distension)
- Pleural effusion (fluid in the space surrounding the lungs) which can cause respiratory distress, exercise intolerance, increased respiratory rate, open mouth breathing, or coughing
- Peripheral edema (subcutaneous fluid accumulation in dependent areas such as the ventral abdomen or the limbs)