

Pulmonary hypertension in dogs and cats

What is pulmonary hypertension, and how can it affect my pet's health?



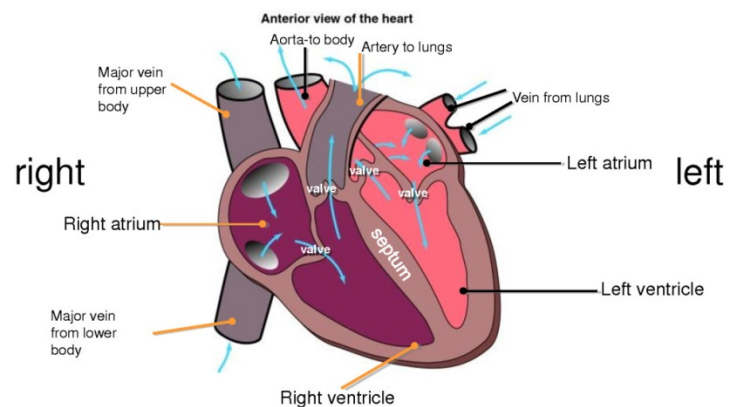
- Pulmonary hypertension (PH) is a disease of elevated pressure in the pulmonary arteries, which are the primary blood supply to the lungs. This should not be confused with what is commonly referred to as “hypertension,” which refers to systemic hypertension, a condition of elevated blood pressure in the arteries of the body *outside of the lungs*.
- Pulmonary hypertension results in reduced blood flow and oxygen delivery to the lungs, as well as increased pressure and stress to the right side of the heart.

What causes pulmonary hypertension in dogs and cats?

Pulmonary hypertension is more common in dogs than in cats. It is most common in small dogs with advancing age. The most common causes of pulmonary hypertension in dogs and cats include:

- Chronic lung disease (e.g. bronchitis, fibrosis - common in small breed dogs)
- Pulmonary thromboembolism (PTE) (obstruction of blood vessels in the lungs by blood clots)
- Parasitic infections of the lungs (e.g. heartworm disease in dogs, lungworm infection in cats)
- Chronic left-sided heart disease (most common cause in dogs)
- Intracardiac or arteriovenous shunts (abnormal connections between the systemic and pulmonary circulation, usually congenital/present at birth)
- Idiopathic (cause undetermined)

Heart Diagram



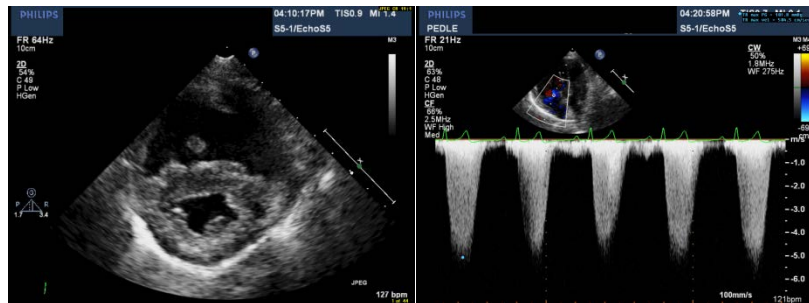
What are the clinical signs (symptoms) that my pet might display if they have pulmonary hypertension?

Pets may or may not have clinical signs from pulmonary hypertension depending on whether it is mild, moderate, or severe. The most common clinical signs observed in pets with moderate or severe pulmonary hypertension include:

- Rapid and/or labored breathing
- Syncope (fainting)
- Exercise intolerance
- Lethargy
- Coughing
- Abdominal distension (due to accumulation of fluid in the abdomen)

What is the best way to diagnosis pulmonary hypertension in dogs and cats?

The best method for diagnosis of pulmonary hypertension in dogs and cats is via an echocardiogram (cardiac ultrasound) performed by a board-certified veterinary cardiologist. The echocardiogram evaluates structure and function of the heart in its entirety and allows for indirect estimation of pulmonary artery pressure. Additional diagnostic testing [e.g. blood testing, thoracic radiographs (x-rays of the chest)] may be useful in determining the underlying cause of pulmonary hypertension.



Echocardiogram consistent with pulmonary hypertension in a dog

Is pulmonary hypertension treatable in dogs and cats?

- Pulmonary hypertension is treatable in most patients.
- In some patients, such as those with heartworm infections or congenital cardiovascular shunts, pulmonary hypertension may completely resolve with treatment of the underlying cause.
- In patients with pulmonary hypertension secondary to chronic lung disease or considered idiopathic, the disease is not curable but can be treated, specifically with medications that improve airway function (bronchodilators), reduce airway inflammation (corticosteroids, in some cases) and reduce pulmonary artery pressures (pulmonary vasodilators). The pulmonary vasodilator most commonly used to treat pulmonary hypertension is sildenafil.
- If pulmonary thromboembolism is a contributing factor, antithrombotics (blood thinners) may be prescribed, as well.

What is the prognosis for pets with pulmonary hypertension?

- Prognosis for pulmonary hypertension in dogs is dependent on the underlying cause. In dogs with pulmonary hypertension secondary to chronic lung disease or considered idiopathic, most patients have a positive response to medication and can maintain good quality of life for up to 12-24 months with continued treatment.
- Prognosis for dogs with pulmonary hypertension secondary to left sided heart disease is dependent on the stage of left sided heart disease present, which your pet's cardiologist will discuss with you.
- Dogs with pulmonary hypertension secondary to heartworm disease or congenital shunts can have a good long-term prognosis if the underlying cause is definitively cured.
- Statistical data regarding prognosis for cats with pulmonary hypertension is lacking due to its relatively uncommon occurrence in this species.

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