

## Pleural Effusion

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Pleural effusion is the presence of abnormal fluid in the thorax. Note, a pleural effusion doesn't mean there is fluid in the lungs but, rather, in the sterile space surrounding the lungs. As more and more fluid accumulates in the pleural cavity (which is the space surrounding your lungs and heart), it compresses the lungs, making breathing more difficult.

#### Symptoms of pleural effusion

Unfortunately, clinical signs of pleural effusion can be very subtle, so it's important to be aware of the symptoms that indicate your dog or cat is having difficulty with breathing. Such symptoms warrant an immediate trip to the [emergency room](#) - even if it's in the middle of the night!

#### Signs of pleural effusion in cats include:

- Lethargy or not moving much
- An increased respiratory rate > 40 breaths per minute (bpm)
- Hiding in unusual places (e.g., under the bed, in the closet, etc.)
- Hunched over in sternal
- Open mouth breathing (unless it's a stressful event like a car ride [note that cats always prefer to breathe through their nostrils])
- Blue-tinged gums (which indicate severe difficulty and possibly death if not treated immediately)

#### Signs of pleural effusion in dogs include:

- Lethargy
- Seeming out of shape when walking (i.e., exercise intolerance)
- An increased respiratory rate > 40 bpm
- Constant panting
- Anxiety, restlessness, pacing

- Stretching the neck out to breath
- Sitting up to breath, with the front legs/elbow spread out (like an [English bulldog](#) stance)
- Using the abdomen to breath better (you'll notice the sides of the belly heaving in and out more)
- Blue-tinged gums (which indicates severe difficulty and possibly death if not treated immediately)

This list of signs isn't all-inclusive, but if you notice any of them, a visit to the veterinarian or emergency veterinarian is a must.

#### What causes pleural effusion?

There are several causes of pleural effusion in dogs and cats:

- Congestive heart failure (more common in cats than in dogs)
- Trauma (resulting in blood in the thorax, called a hemothorax)
- Cancer (such as lymphosarcoma, adenocarcinoma, etc. [resulting in abnormal fluid leaking into the pleural space secondary to a tumor or mass])
- A severe infection (resulting in pus accumulating in the thorax, called a pyothorax)
- Abnormal inflammation or infection
- Chylothorax (where an abnormal milky, white fluid leaks out of the thoracic duct into the chest cavity, resulting in abnormal fluid accumulation)
- Metabolic problems (e.g., a very low protein level resulting in fluid accumulation in the thorax and abdomen)
- Numerous other causes

#### How is pleural effusion treated?

The #1 thing that is necessary when your dog or cat is diagnosed with pleural effusion is a procedure called a thoracocentesis (i.e., a chest tap). Using a sterile technique, a small needle is placed into the chest cavity to remove the abnormal fluid. This helps improve breathing problems immediately. It also helps us veterinarians diagnose what the underlying cause or problem is.

Other tests and procedures that are necessary include:

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- Life-saving stabilization, including oxygen therapy
- Analysis (called “cytology”) of the fluid, to look for abnormal cells (e.g., cancer cells)
- Medications to help your pet breath better (depending on the underlying problem or disease)
- Blood work (to evaluate the white and red blood cells, platelets, kidney and liver function, electrolytes, and clotting ability)
- Monitoring of the blood oxygen levels (e.g., with a pulse oximetry [a device that non-invasively monitors how much oxygen is being carried by the red blood cells]) or an arterial blood gas (a sample of the blood from the artery)
- Chest x-rays (to look at the appearance of the trachea, ribs, lungs, diaphragm, etc.) after the abnormal fluid has been removed
- Sometimes, a clotting test (called a prothrombin (PT) or activated partial thromboplastin time [aPTT]) may be necessary — particularly if there is the concern about anticoagulant mouse and rat poisoning causing internal bleeding
- Abdominal x-rays (to rule out other underlying problems in the abdomen)
- An electrocardiogram (to look at the rhythm of the heart)
- Echocardiogram (an ultrasound of the heart to rule out underlying heart disease) – this is especially important in cats presenting with pleural effusion

### Will my dog or cat recover from pleural effusion?

The prognosis for pleural effusion varies with what the underlying problem is. Unfortunately, most of the time, the prognosis is poor, as the disease is typically quite advanced by the time an animal shows abnormal fluid in the thorax.

When in doubt, seek veterinary attention to work up your pet as soon as you notice any abnormal clinical signs. Keep in mind that pets often don't show clinical signs until they are very severe, and any signs listed above warrant a trip immediately. The sooner you notice a problem, the sooner you can treat it and the

greater the potential for a better the outcome.

*If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.*