



# WINN FELINE FOUNDATION

For the Health and Well-being of All Cats

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637 Wyckoff Ave., Suite 336, Wyckoff, NJ 07481 • [www.winnfelinefoundation.org](http://www.winnfelinefoundation.org)  
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## Chylothorax

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Chylothorax is a disease of cats that consists of the buildup of a fluid called “chyle” within the chest cavity. It is a type of pleural effusion, a term which refers to any fluid between the lungs and the chest wall. Pleural effusions of any kind can be life threatening, and chylothorax is no exception

Cats with chylothorax often present to a veterinarian because of respiratory distress- labored breathing, increased respiratory rates, panting, or even episodes of collapse. In some situations, this may appear to occur quickly, however the buildup of fluid takes time and many cats have more vague and nonspecific signs

Chyle is a type of lymphatic fluid that is formed in the intestines from fats absorbed in the GI tract. This fat mixes with fluid from lymph nodes and drains from the intestinal “lacteals” into a duct in the abdomen referred to as the “cisterna chyli”. This travels to the left and on top of the aorta, through the diaphragm into the chest where it becomes the “thoracic duct”. This duct ultimately drains into the veins near the heart where it mixes with blood.

In cases of chylothorax fluid is able to leak out of the thoracic duct into the chest. This may happen because of increased pressure in veins due to cardiac disease, cancers or masses near the duct, or other reasons. If this happens for a short time or small volume it may be reabsorbed easily, however larger amounts for long periods of time may result in the buildup of significant fluid within the chest. This fluid will eventually lead to compression of the lungs and difficulty breathing. As the fluid is irritating, it may also lead to restrictive pleuritis or the inability of the lungs to easily re expand.

Chyle accumulates slowly, and so cats often have time to adapt to the presence of fluid around their lungs. This means that a large volume of fluid must accumulate before cats experience respiratory distress. While cats often seem to have a sudden onset of signs, the disease has usually been building up for weeks to months. Early clinical signs are vague and may mimic those of other diseases including weight loss, lethargy, loss of appetite, and increased respiratory rate.

Cats presenting to a vet with difficulty breathing (panting, open mouthed breathing, etc) may be immediately placed on oxygen therapy. Diagnosis of fluid in the chest is often by either x-rays or ultrasound. Cats who have less obvious respiratory disease may require more thorough diagnostics to determine the source of their issues. Workup of a cat with chylothorax is centered on confirming that the fluid is chyle, and determining if an underlying cause is present.

The first step in management and diagnosis of chylothorax is usually thoracentesis; or removal of fluid from the chest using a needle or catheter. This may be done under sedation or awake with a local anesthetic, depending on how aware and cooperative the patient is. Removal of chyle is both therapeutic (allowing the cat to breathe better) and diagnostic (allowing analysis of the fluid removed). Generally, a diagnosis of chylothorax cannot be made until after thoracentesis, as this is when examination of the fluid can occur.

Analysis of the fluid begins with a visual exam which may raise strong suspicions for chylothorax. It will generally also include testing of this fluid including examination under a microscope (to look for evidence of infection, inflammation, or cancer), culture (to isolate bacteria) and measurement of values such as triglycerides and cholesterol (to confirm that the fluid is chyle). Retrovirus testing (FIV and FeLV) and heartworm testing may also be performed.

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The Winn Feline Foundation is a non-profit organization [501(c)(3)] established by The Cat Fancier's Association.

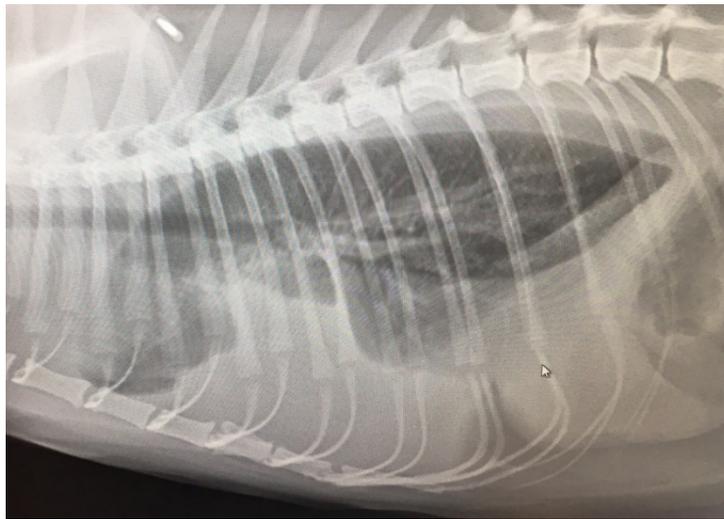


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*X-ray of a cat with pleural effusion*

After confirmation of chylothorax, further tests are usually done on the cat to determine the cause of the effusion. These often include blood tests including thyroid hormone values, radiographs (x-rays) of the chest to look for evidence of cancer, and possibly ultrasounds of the chest and/or abdomen. CT scans of the chest are often done at referral or specialty centers to look in more detail at the thoracic cavity. Common diseases the predispose to the formation of chylothorax include heart disease, thyroid disease, and some cancers. In some areas of the world fungal infections and pneumonia may also occur.

While trauma is a common cause of chylothorax in humans, it is rare in cats. Trauma to the thoracic duct in cats is uncommon and usually resolves by itself without causing significant disease.

Most cases of chylothorax in cats (>50%) are idiopathic, which means there is no identifiable cause. This does not mean there is no cause, but simply that one is not able to be identified by diagnostic tests. In cases of idiopathic chylothorax therapy is symptomatic. It is important to rule out any underlying cause of disease, as these may drastically affect treatment and prognosis. If an underlying disease exists, treatment should be focused on managing that condition.

Medical care of chylothorax involves a combination of nutritional management and administration of certain drugs/supplements. In some cats the effusion may be managed by repeated needle draining, however in others a “chest tube” may be implanted to easily allow quick draining of fluid recurrence. While medical management is the only option for many people, it is less effective than surgery and response is often temporary.

Dietary therapy is focused on limiting the amount of fat in order to decrease chyle volume. Low fat foods and foods higher in fiber will be selected by your veterinarian.

The use of a nutraceutical (dietary supplement) called “rutin” is often touted for chylothorax. Rutin increases the breakdown of chyle by white blood cells and may slow the recurrence and progression of disease. This is a common human supplement that may be purchased in many health food stores.

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There is no evidence that diuretics or corticosteroids are effective in the management of chylothorax and their use is generally not recommended.

Surgical management is often needed for definitive management of chylothorax. The surgery required is called a “thoracic duct ligation”, and it is often done at the same time as a “subtotal pericardectomy”. This is a specialty surgery that is generally only performed by board certified surgeons at specialty centers. It involves cutting into the chest, either between the ribs or through the sternum. Thoracic duct ligation alone is 25-50% successful in cats, but improves up to 80% when pericardectomy is also done. Thoracic duct ligation is a procedure whereby the chyle containing duct in the chest is tied off and transected to prevent the flow of chyle through it. This is often done after injection of dye into an abdominal lymphatic or lymph node to allow better visualization of the duct.

Several other surgeries have been described to use instead of or in addition to the above procedures. These include thoracic omentalization, diaphragmatic fenestration, pleurodesis, and cisterna chyli ablation. Most of these are not as successful as the above procedures and are no longer done except in very specific circumstances.

Resolution of effusion may occur in 1 to 50 days post surgery. Restrictive pleuritis is seen in up to 60% of cats with chylothorax and is a negative prognostic indicator. While surgical and medical therapies for this condition exist, when it is severe the prognosis of affected cats is very poor. Most cats who experience major surgical complications do so within a few days post op, however signs of disease and surgical complications may occur weeks to months after surgery.

Overall, chylothorax is a very serious disease of cats. Surgical management is the best option for long term resolution, assuming that no underlying cause is found. Cats that survive surgery and recover may have a good long term quality of life if no underlying disease is present.

## **For more information:**

American College of Veterinary Surgeons

<https://www.acvs.org/small-animal/chylothorax>

Cornell Feline Health Center

[http://www.vet.cornell.edu/fhc/Health\\_Information/CW\\_lungs.cfm](http://www.vet.cornell.edu/fhc/Health_Information/CW_lungs.cfm)

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3. Singh A, Brisson B, Nykamp S: [Idiopathic chylothorax: pathophysiology, diagnosis, and thoracic duct imaging](#). Compend Contin Educ Vet 2012 Vol 34 (8) pp. E1-E7.
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