

# Hepatic Lipidosis

## ABOUT THE DIAGNOSIS

Hepatic lipidosis is a very serious but potentially curable liver disease of cats. This disease occurs most commonly in cats that are overweight to obese and have undergone a period of abruptly decreased appetite (inappetence) or excessively rapid weight loss. In the healthy cat, the liver performs many functions that are critical to life. These functions include making, breaking down, and temporarily storing fats. If the cat does not eat for a period of time, fat that is stored elsewhere in the body is moved to the liver where it is broken down or metabolized into energy that the body uses as fuel. However, the liver can become overwhelmed by the amount of fat that it suddenly receives from the rest of the body. If this happens, fat accumulates in the liver and interferes with many other functions that the liver is required to perform to keep a cat healthy.

**Causes:** There are many reasons why cats lose their appetite with no apparent underlying illness. Any change in the cat's environment such as a diet change, the presence of new pets in the household, or moving to a new house or apartment can negatively affect a cat's food intake. Situations that may not seem stressful to people can actually be very stressful for cats, and many cats respond by not eating. Some diseases can predispose or occur at the same time as hepatic lipidosis and cause a sense of nausea or unwillingness to eat; they include intestinal diseases such as inflammatory bowel disease, various types of heart disease, constipation, diabetes mellitus, and pancreatitis. Cats that consume diets deficient in certain building blocks of proteins (amino acids) may be at risk of developing hepatic lipidosis. In many cases, the specific cause of hepatic lipidosis in an individual cat is never known.

**Symptoms:** Outward symptoms (clinical signs) of hepatic lipidosis are often not very specific and simply reflect a cat that is not feeling well. These symptoms may include weakness, decreased alertness or hiding, a new onset of vomiting, excessive drooling/hypersalivation, and a yellow tinge to the skin and/or the white of the eye (icterus/jaundice).

**Diagnosis:** To help your veterinarian determine if your cat has hepatic lipidosis, it is important for you to provide what you know of your cat's recent medical and environmental history, including diet, any changes in the household, periods of loss of appetite, and if your cat has ever been diagnosed with another medical problem or is taking medications. Your veterinarian will likely need to perform tests, since the initial symptoms of hepatic lipidosis are nonspecific and may easily be confused with symptoms of other, completely different problems. A blood sample is usually drawn to assess how the liver and other organs are functioning, and to help pinpoint the liver as the source of the problem. X-rays of the abdomen (belly) often are needed to screen for abnormalities that could influence the liver and contribute to its malfunction. An ultrasound examination may be performed since it is the test of choice for looking within the liver tissue. An ultrasound exam of the liver in a cat is exactly the same as a sonogram (ultrasound) for a person, except that a cat's hair usually needs to be shaved from the abdomen for clearer ultrasound images. Together, these tests help to pinpoint the liver as the source of the problem, or identify impostor diseases and avoid the wrong treatment if in fact the cat has a disease other than hepatic lipidosis. The definitive diagnosis of hepatic lipidosis requires a small needle aspirate or biopsy sample of liver tissue (which in some

cats require general anesthesia). Biopsy samples can be obtained via abdominal surgery—an operation—or using minimally invasive methods: ultrasound-guided core biopsy, or using a camera and small openings into the abdominal cavity—laparoscopy. Depending on the extent of the required liver specimen, cats may comfortably undergo the procedure awake (if just a fine-needle aspiration is sufficient) or may require anesthesia if a true solid tissue biopsy is required. The decision about which type of procedure is best varies from case to case and is made based on the information derived up to that point; generally a biopsy is preferred but very ill cats who are poor anesthetic candidates may only tolerate a fine-needle aspirate, for example. Some cats with hepatic lipidosis are too unstable to undergo liver sampling, and the diagnosis may be suspected based on the blood tests and ultrasound exam findings.

## LIVING WITH THE DIAGNOSIS

Hepatic lipidosis can become life-threatening if left untreated. Therefore, initial treatment usually involves intensive care. It is common for hepatic lipidosis to take several days of treatment before it is clear whether the situation is improving or deteriorating, and even then, a hospital stay of several more days is commonly necessary before a cat is self-sufficient and able to go home. Discharge to home care is sometimes possible after several days if close attention and treatment can be provided in the home, but even under the best circumstances, hepatic lipidosis is a disease that requires extensive and intensive initial treatment (hospitalization for 3 to 6 days is typical). For this reason, your veterinarian may want to discuss with you whether a second opinion with a veterinary internal medicine specialist is desirable, and may refer you to a board-certified small animal internist for that reason (directories: [www.acvim.org](http://www.acvim.org) or [www.vetspecialists.com](http://www.vetspecialists.com) [North America] and [www.ecvim-ca.org](http://www.ecvim-ca.org) [Europe]).

If the cat responds well to treatment and hepatic lipidosis is cured, it does not commonly recur. The exception is if there is persistent obesity or other unrelated illnesses that can flare up and trigger periods of appetite loss, initiating hepatic lipidosis once again. There are no known long-term adverse effects of hepatic lipidosis after it is treated successfully.

## TREATMENT

Hepatic lipidosis is a potentially critical illness that often requires intensive care and good nutrition (not too little, not too much) as the cornerstones of immediate treatment. Unfortunately, liver diseases in general often make cats unwilling to eat, and failure to eat causes hepatic lipidosis to worsen. The goal of treatment is to put the cat in a positive calorie balance (meaning it is consuming more calories than it is burning). Occasionally, cats that are still eating even a small amount may respond to appetite-stimulant medications, feeding tubes placed through the nose, warming of the food, coaxing, and other measures to encourage appetite. These measures make it possible to avoid placing a feeding tube and are worth trying only in cats with very mild cases of hepatic lipidosis. However, most cats require the placement of a temporary feeding tube as a way of allowing the cat to maintain a positive calorie balance, thus allowing the cat to regain strength and overcome the disease. This allows both food and medications to be given without handling the cat's head and mouth and force feeding, which many sick cats resent and which can trigger nausea. Such feeding tubes are temporary; they can be left in place for a few days, or as long as several weeks, as needed.

A cat with hepatic lipidosis is treated by giving complete nutritional support, minimizing stress, treating complications if they occur (such as vomiting), and treating the underlying cause if it is known. An intravenous (IV) catheter may need to be placed to provide fluids and give medications in the hospital because most cats with hepatic lipidosis are dehydrated when first evaluated.

A cat that is hospitalized for treatment of hepatic lipidosis can go home when he or she is tolerating the tube feedings, especially if you or the cat's caretaker can continue to feed through the tube at home. The presence of the feeding tube will not discourage the cat eating on its own. As appetite returns, most cats may eat a bit and receive the rest of the day's calories by tube feeding, with an increasing proportion of natural eating over time. Gradually, the amount of food given by mouth is increased as the amount of food given through the tube is decreased. The great majority of cats tolerate being fed through a tube very well at home.

The tube is left in place until the cat's appetite is completely normal, which in most cases varies between 3 to 6 weeks. Removal of the tube is possible when the cat's condition is mostly or entirely back to normal and the veterinarian feels that the risk of relapse is very low.

Overall, hepatic lipidosis is a disease of cats that can be mild, but often is severe, and requires significant emotional, financial, and logistical resources: when severe, it is a high-maintenance disorder, but with a good response to treatment a full recovery is possible.

## DOs

- Give medication exactly as directed.
- If you are feeding your cat through a tube, follow your veterinarian's instructions closely and stop if your cat begins to vomit.
- For all cats (not just those with hepatic lipidosis): help to prevent the occurrence of hepatic lipidosis by monitoring your cat's weight closely; obesity plays a major role in the development of hepatic lipidosis and many other diseases. Obesity needs to be avoided to reduce the risk of this potentially very serious liver disease.
- Understand that food consumption and hepatic lipidosis are interrelated on two different levels: first, a cat should not go without eating. But second, a cat that eats constantly can gain too much weight, predisposing to hepatic lipidosis if food consumption stops for 24 hours or more. Therefore, consider your cat's specific situation. If your cat has just been diagnosed with hepatic lipidosis, make sure the appetite is as good as possible by feeding what he/she likes. The weight loss can begin once the condition is completely resolved and appetite is back to normal. When the appetite is back to normal and the hepatic lipidosis is resolved, then you can help to prevent hepatic lipidosis from happening again by consulting with your veterinarian about feeding weight loss/optimal weight maintenance diets long-term. These diets reduce weight, and therefore reduce the risk of hepatic lipidosis, because they are usually high in fiber and therefore likely to leave a cat feeling more full than just cutting back on the amount of regular food.

## DON'Ts

- Do not start your cat on a diet before talking to your veterinarian, as some cats are finicky eaters and stopping eating altogether can trigger hepatic lipidosis.
- If **ANY** cat has not eaten for 24 hours or more (even if he/she has never been diagnosed with a liver problem before), do not wait longer before seeking veterinary attention. Regardless of the underlying cause, the simple act of not eating for more than a day may initiate hepatic lipidosis in cats.

## WHEN TO CALL YOUR VETERINARIAN

- If you cannot keep a scheduled appointment.
- If your cat will not eat or has not eaten for any period of time, particularly if your cat is overweight.
- When treating hepatic lipidosis at home: if you encounter any difficulty giving food through the feeding tube or if your cat shows any of the signs listed below.

## SIGNS TO WATCH FOR

- Weakness, decreased appetite, vomiting, diarrhea, constipation, abnormal behavior (especially hiding more than usual), excessive drooling/hypersalivation, or a disoriented, "drunken" appearance. These signs can be compatible with liver dysfunction and would warrant a recheck visit with your veterinarian to reassess and adjust medications if necessary.

## ROUTINE FOLLOW-UP

- For checking body weight, physical examination, and blood test values: initially within a week of discharge, but thereafter depends on progress and presence or absence of ongoing symptoms.

*Other information that may be useful: "How-To" Client Education Sheet:*

- How to Use and Care for an Indwelling Feeding Tube



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