

Fatty Liver (Hepatic Lipidosis) in Birds: Causes, Signs, and Treatment

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What is fatty liver disease?

Fatty liver disease in birds, also known as hepatic lipidosis, is a disease in which large amounts of fat are deposited in the liver. It is most common in budgies, cockatiels, Amazon parrots, Quaker parrots, lovebirds, and cockatoos. It is a very serious condition, and death may occur if treatment is not started early in the course of the disease.

What causes fatty liver disease?

There are many possible causes of hepatic lipidosis in birds. These include:

- High fat content in diet (all-seed diet)
- Too frequent feedings, or eating too much at each feeding
- Nutritional deficiencies such as biotin, methionine, and choline
- Thyroid disease
- Toxins such as lead, arsenic, carbon tetrachloride, chloroform, phosphorous, aflatoxins, and ethionine
- Hereditary factors
- Diabetes mellitus

What are the signs of hepatic lipidosis?

Birds with fatty liver disease generally have a sudden loss of appetite, are lethargic, and depressed. Many are overweight and the liver is enlarged due to the additional storage of fat. This results in a distended abdomen and difficulty breathing. They may have diarrhoea and abnormal droppings (green in colour). Birds may have poor feather quality. If the liver function is greatly decreased, birds may develop *central nervous system* signs such as seizures, loss of balance, and muscle tremors. Budgies may have overgrown, soft beaks. Some birds with fatty liver disease may develop few signs before they die suddenly.

How is fatty liver disease diagnosed?

Results of a physical examination, including the *palpation* of an enlarged liver often raise suspicion of hepatic lipidosis. The diagnosis can be supported through liver tests, *radiography (x-rays)*, and confirmed through liver *biopsy*.

What is the treatment for hepatic lipidosis?

Birds with fatty liver disease must be placed on a low-fat diet which includes high quality pellets and fresh fruits and vegetables. It is sometimes difficult to get them to eat, so tube feeding may be necessary during the beginning of the treatment. They usually need additional supportive care such as supplemental heat and fluids. Additional medications, such as lactulose, may be given to treat or prevent central nervous system signs.

References and Further Reading

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Liver Disease (Fatty Liver) in Pet Birds

Liver disease is a slow, on-going progressive disease where the liver tissue is replaced with fat. When the liver disease has progressed, the bird may suddenly appear ill.

Females appear to be more affected than males; this may be linked to the hormonal activities in the reproductive hen. Also juvenile birds may be diagnosed with this disease.

This usually happens in hand-feeding birds that are either continuously overfed or hand-fed long after they should have been weaned. Hand feeding formulas are calorie-dense and baby birds tend to be sedentary. Any extra calories tend to end up being stored as fat in the liver. This most often is seen in cockatoos as they tend to beg even after satiated.

Symptoms:

- The enlarged liver may cause breathing difficulties as the organ compromises the body cavity space.
- The bird's abdomen may appear distended, and sometimes the liver is actually visible below the keel.
- The bird may develop diarrhoea, and the droppings may take on a more yellowish or greenish hue due to biliverdin being excreted.
- Poor feather quality and changes in the feather coloration. In cockatiels, for example, the white feathers may take on a more yellowish colour (doesn't happen in white-faced cockatiels though). African Greys may develop red feathers in areas that are usually grey and feathers in Eclectuses may turn yellow, orange and potentially red.

- Dry itchy skin may also be an indicator of liver problem. Once the liver problems have been resolved, it takes a while for the itching to stop.
- In some birds, soft areas around the beak occur. Birds may develop overgrown beaks and claws / nails.
- End-stage liver disease: toxins build up in the bloodstream, resulting in central nervous systems signs, such as disorientation or seizures.
- Bleeding clotting problems may occur. A simple broken blood feather may result in prolonged, life-threatening bleeding.

Supporting a Healthy Liver through Nutrition and Healthy Lifestyle:

- Restorative sleep is crucial as it helps promote healing, including helping a liver rebuild itself. Patients (feathered or unfeathered) need extra sleep and plenty of rest to recover.
- Diet: Your avian vet is likely to recommend changes to your pet's diet.
 - It is important to change to an ORGANIC diet that is **rich in fibre, low in fat and with reduced protein content**. The liver should not be burdened with the pesticides that are typically found on conventionally grown produce.
 - The staple diet should consist mainly of fruits and vegetables with a good quality dry food mix (that doesn't contain any chemicals, artificial flavours or colours). Foods to focus on are those that will help the liver detoxify.
 - Foods and nutrients that aid in the detoxification process include: Magnesium, Vitamin C, foods rich in Vitamin B2, B5, B6, B12, walnuts, cabbage, broccoli, Brussels sprouts, asparagus, citrus peel, egg yolks, garlic, red peppers, dark green leafy vegetables, animal protein, whole unprocessed grains, some legumes, and turmeric.

- **Fibre is important for cleansing the intestines of toxins.** Encouraging the consumption of fresh fruits and unlimited amounts of fresh vegetables adds fibre and nutrients.
- **Sprouted seeds** are an excellent option. Sprouted seeds are lower in fat, as the process of sprouting utilizes the fat stored in the seed to start the growing process - thus reducing the fat stored in the seeds. Also, the texture is more vegetable-like, which may encourage a bird to begin eating veggies. Sprouted or germinated seeds are usually more easily accepted by "seed addicts" than fresh fruits and vegetables.
- Do not feed peanuts or food items that could contain mycotoxins, which could further damage the liver.

Nutritional supplements that support liver function are:

- It is suspected that there is a correlation between vitamin deficiency and the development of fatty liver disease; and nutritional support is essential for the treatment. The following supplements should be discussed with a holistic vet:
 - **Choline, biotin and methionine. Biotin and choline (B vitamins).** Choline is essential for fat metabolism. It helps prevent the deposition of fats in the liver, guarding against fatty liver damage. Animals with choline deficiencies have been shown to develop liver damage similar to that induced by alcohol in humans.
 - Foods that are high in choline are egg yolks, brewer's yeast, legumes and whole grain cereals.
 - Sources of biotin are nuts, fruits, brewer's yeast, and brown rice.
 - **Methionine** (an amino acid that is essential in transporting fats from cells) - can be found in: eggs, fish, meat and milk. However, do not offer any anything containing lactose, as birds cannot digest this sugar. However, lactose is almost entirely removed in the process of manufacturing of many cheese products, yogurt or cottage cheese,

making those items generally safe for consumption by birds. Discuss the diet with your vet.

- **Milk thistle** is very good support for a damaged liver. Your avian vet will decide if this is an appropriate therapeutic for your bird.

Make sure that any milk thistle supplement does not contain ethyl alcohol as a base, as that can potentially intoxicate a small bird and alcohol can also further damage the liver.

- **Dimethylglycine (DMG)** - an antioxidant - is also a good supplement for birds with liver damage.

➤ **The following supplements will help with detoxifying your birds:**

- **Aloe Detox** - One recommended brand is "Lily of the Desert Aloe Detoxifying Formula." It is available over the following websites: <http://www.vitacost.com>; <http://www.amazon.com>; <http://www.international.com/ingr/ingr199340.cfm>. It is also available at better health food stores, such as Whole Foods. The manufacturer reports that Aloe Detox needs to be refrigerated (obviously). After opening, it will keep for 7 to 9 months.
 - Birds with advanced liver disease that have been given only weeks to live by the vet turned completely around after daily administration of Aloe Detox by the owner. A holistic vet recommended "as much of Aloe Detox" as the owner could get the parrot to drink. In that case, it was 1/2 oz three times a day (it was a larger parrot) - dilution: one-part Aloe Detox to three parts water. (Owner used filtered / distilled water). After three weeks, the parrot's blood work was completely normal and the parrot lived many years afterwards. If a pet doesn't want to drink it, soaking a pet's favourite "birdie bread", whole grain toast, or favourite treat might be a good way to administer it. A vet recommended not to give Aloe Detox for extended periods - only

when detoxification is needed; no longer than 3 weeks. If administered in drinking water, some birds who might not like the taste, may stop drinking! Make sure your pet stays sufficiently hydrated. Discuss a treatment program that is right for your pet with your holistic vet.

One bird owner described her experience with her dying canary. The prescribed medications caused the canary to get worse, rather than better. She researched Aloe Detox and decided to stop any prescribed medication and take the holistic route. She administered Aloe Detox and the canary gradually improved and completely recovered.

- **The directions provided were** (please discuss with your holistic vet):
 - **For seriously sick birds:** mix 50/50 or 60/40 detox / spring water and provide as drinking. Please make sure your pet drinks it or else administer with a feeding syringe. Hydration is vital -- so owner need to make sure that the pet takes in sufficient amounts of fluids. Place the water dish very close to where the bird is sitting. Keep the cage in a warm environment. If a bird is dehydrated and unable to drink on its own, use a small dropper or feeding syringe and place a few drops directly into the bird's beak. Once normal hydration levels have been reached, you should see an improvement in your pet within 15 to 20 minutes. As soon as the bird is drinking on its own, stop administering directly.
 - **Detoxification in Well Birds:** Breeders may provide Aloe Detox to their flock once a week to help with detoxification and maintain their health. Adding a tablespoon or so to two ounces of water will help maintain the health of the flock. Some breeders provide a 50/50 mixture (Aloe Detox / Water) once a week -- besides helping with detoxification it also gets them used to drinking it so in case they have problems in the future, they will easily accept. However, if your birds appear to reject

the detox, reduce the amount and gradually increase the ratio over a few days. Please note that Aloe Detox does spoil -- so it is best to replace it with fresh water after a few hours - particularly on hot days. The manufacturer reports that Aloe Detox needs to be refrigerated (obviously). After opening, it will keep for 7 to 9 months.

➤ Some bird owners mix Aloe Detox in with juice to get their birds to drink it.

- Fresh gel from the leaves are superior to Aloe Vera gel bought commercially. Bird owners will cut off a small section each day and feed that section to their pet birds. The plant is easy to grow in most areas. It needs, however, to be grown organically -- without the use of chemical fertilizers, pesticides or herbicides.
- *NOTE: Even though Aloe Vera is helpful for many birds, some rare birds may have a reaction to Aloe Vera. Spray one of your fingers and touch your bird's foot. Leave for 24 hours and see if a reaction occurs
- [How to Harvest Fresh Aloe Vera Gel](#) - Tips on harvesting aloe vera

- **Herbs** that are conducive to maintaining liver health and even reversing existing liver problems are: Psillium Husk Powder, Dandelions and others.
- **Milk thistle** is a liver-supportive herb. It's best to discuss with your vet whether it is appropriate for your pet. It is important to make sure that any [milk thistle supplement](#) doesn't contain ethyl alcohol as a base, as alcohol can further damage the liver.
- **Alpha-Lipoic Acid** has been used successfully for the maintenance of liver health and as a treatment for several toxin-related illnesses. ALA has been used extensively in Europe for years as a non-toxic nutrient to treat toxic conditions such as mushroom poisoning, diabetic neuropathy, and elevated liver enzymes. Another benefit of Alpha-Lipoic acid may be its ability to elevate the levels of glutathione (GSH).

- **Conjugated linoleic acid (CLA)** reduces the body's ability to store fat, while promoting the use of stored fat for energy. Cattle and chickens that are fed grain, rather than allowed to feed in pastures, are low in CLA, which has caused a dramatic reduction in the amount of available CLA in the American diet in recent years.
 - **Sources:** Eggs, meat and dairy products. Note: Meat from grass-fed animals contain much higher levels of CLA than meat coming from grain-fed animals.

In many cases there are **secondary infections** along with the liver disease, and the vet will (or should) ensure that any medications are not toxic to the liver. Many medications are removed or changed by the liver, so the vet may adjust dosages accordingly.

Exercise: When dealing with a sedentary bird, exercises will need to begin slowly and progress gradually in intensity. Wing-flapping exercises, ladder-climbing and walking are safe; however, the bird should be monitored closely to ensure that he or she is not becoming over-exerted at any time.