

Fatty Liver Degeneration & High Cholesterol in Cockatiels

Carlingford Animal Hospital

What is High Cholesterol & Fatty Liver Degeneration?

Fatty Liver Degeneration (FLD) and High Blood Cholesterol levels are a common problem of cockatiels. The condition is particularly common in birds with clipped wings as this restricts their flight and ability to exercise. A blood test to check cholesterol levels and liver function identifies this disease.

High Cholesterol and associated FLD are difficult to recognize from outward signs and produce many and varied symptoms. The sudden appearance of excessive beak or nail growth is often a signal that there is a cholesterol and fatty liver problem. Poor feather colour and sheen, abnormal feather colour, sneezing, recurrent sinus infections and large watery droppings are common symptoms of FLD in cockatiels.

A withdrawn or anxious personality and limited desire to interact and learn are other signs of high cholesterol and FLD. Birds with long standing cholesterol problems are prone to more serious life threatening conditions such as heart attack and xanthomas - fatty type tumors often seen on the wings of cockatiels.

Birds with cholesterol problems and fatty liver diseases that are kept inside without exposure to sunlight may develop stiff joints, bumble foot and feather picking behavior. These birds often overgroom due to bone discomfort associated with osteoporosis, as there is a connection between fatty liver and vitamin D deficiency.

Diagnosis of High Cholesterol & Fatty Liver Degeneration

Blood tests are recommended when Fatty Liver Disease is suspected of being involved with an illness or as a routine part of an annual health check for birds with a history of cholesterol, liver or pancreas problems. A failure of the blood to clot quickly at the blood collection site (we collect blood from the vein under the wing) following blood collection is a clue that FLD is likely to be present.

Blood test results that show high blood cholesterol indicate a diet that is too high in energy, usually as a result of fatty foods, or a lack of exercise. Other biochemistry blood tests findings assess the effect of the diet of your bird and the presence of Fatty Liver Disease and other health problems.

Signs of High Cholesterol & Fatty Liver Degeneration

In cockatiels, the most common signs of FLD are nostril problems and recurrent sinus infections. Bleeding episodes associated with night frights or involving spontaneous nose or mouth bleeds or blood quill ruptures may also occur in cockatiels with FLD. Other signs include obesity, fat tumors, excessively long beak or toenails, anxiety (more frequent night frights, biting and unsociable behaviour, heavy breathing attacks), loss of appetite, inactivity, a loss of vocabulary or a reduced inclination to play and talk. A delayed moult recognized by pin feathers (i.e. unopened quills) on the neck or crest feathers, or a failure to moult old wing flight feathers is another common sign of FLD.

Heart attacks are likely in cockatiels with longstanding FLD and high cholesterol problems. Cholesterol is very insoluble and prolonged high levels in the blood stream result in its deposition on the walls of the blood vessels. These deposits eventually harden to atherosclerotic plaques. This narrows the blood vessels and serves as a site for clot formation and may precipitate myocardial infarction or heart attack.

Causes of High Cholesterol & Fatty Liver Degeneration

A diet too high in fat is the most common cause of high cholesterol problems and FLD in pet cockatiels. Other factors that may be involved with FLD include family predisposition, hormonal influences, contaminated food, inadequate exercise (i.e. clipped winged birds or fully flighted birds that are not encouraged to fly), excess dietary carbohydrates, choline and biotin deficiency, excess calories, obesity and thyroid dysfunction.

Cockatiels are particularly susceptible to fatty liver disease because in the wild they live in an unpredictable and dry environment where food supply is often sparse. Their metabolism has evolved to become extremely efficient at conserving energy enabling them to survive on foods of low nutritional value. They conserve energy by depositing any oversupply as fat. It is this exceptional ability to efficiently conserve excess energy as fat that leads to obesity, fat tumors and fatty liver when cockatiels are fed fatty foods.

Lack of exercise is also linked to high cholesterol and fatty liver problems. Pet birds are far less active than wild birds and need less food to sustain them. They often prefer the taste of fatty foods (e.g. sunflower seeds and nuts) above starchy cereal grains and in many instances leave other grains in the seed mix untouched. Unknowing to the owner their sole diet becomes sunflower seeds or nuts as these foods totally satisfy their hunger. It is the protein and other nutritional deficiencies created by this poor diet that produces the many symptoms linked to FLD.

Treatment of Fatty Liver Degeneration & High Cholesterol

When FLD and high cholesterol has been diagnosed it becomes necessary to stop feeding all fatty foods (i.e. no more sunflower seeds, nuts etc.). The **Cholesterol & Fatty Liver Nutritional Programme** should commence and culture tested millet mix be provided. This sterile mix is free of contamination and is recommended because mould toxins and mould contamination has been linked to FLD. The sweet, fresh taste of our sterile seed mix is readily accepted by birds.

Nutrient dense and low GI (glycaemic index) foods are provided as a cooked morning meal (e.g. rice and vegetable recipe mix) and a cooked bean mix as the evening meal. Beans are recommended as they are rich in the amino acids lysine, methionine and tryptophan that are lacking in the foods commonly fed to birds. White beans and green leafy vegetables (e.g. spinach or swiss chard) are also recommended as they contain choline and biotin, which improve the proper metabolism of fats in the body. Swiss chard has high levels of biotin and many other antioxidants and is involved in maintaining blood glucose levels. It is also an excellent source of vitamin K and vitamin A. Free vegetables such as red and green peppers, spinach and zucchini should also be fed to help control and treat FLD.

Turbobooster is used as part of the FLD Nutritional programme because it contains polyunsaturated fatty acids and good levels of tryptophan and methionine. It is provided on the sterile seed at half the recommended dose for three days each week. Chamomile tea or herbal medicines such as Milk Thistle may be recommended for those birds with excessively high cholesterol and GLDH blood levels as these indicate advanced fatty liver disease.

An exercise routine of free flight outside the cage at least once a day should commence and walking exercise or short flights should be encouraged for clipped birds. Clipped birds should be encouraged to fly as their new flight feathers regrow and not be clipped in the future if at all possible. Exposure to direct sunshine aids recovery and helps reduce joint stiffness, bone pain and associated feather picking symptoms associated with FLD. At least 10-20 minutes each day is required for the best results.

Immediate Steps for Cholesterol & Fatty Liver Problems

1. Stop fatty foods.
2. Replace fat based protein sources with legume based protein (Tassie's Beans) and provide daily as a shared evening meal.
3. Start exercise and fitness routine.
4. Provide direct sunshine for 10-20 minutes each day or as often as possible.
5. Follow Cholesterol and Fatty Liver Nutritional Programme (see below).

Cholesterol & Fatty Liver Nutritional Programme

	In Drinking Water	On Sterile Seed	Daily Shared Meal Times	Daily Exercise & Direct Sunlight
Day 1	KD Powder ¹	Turbobooster, E-Powder & F-Vite ⁶	Daily Morning Meal Provide a shared (ie. eat at the same time as your bird) morning meal of rice, vegetables and leafy greens such as swiss chard.	<input type="checkbox"/>
Day 2	Ioford, Dufoplus & Megamix ²	Turbobooster, E-Powder & F-Vite ⁶		<input type="checkbox"/>
Day 3	Chamomile Tea ³	Turbobooster, E-Powder & F-Vite ⁶		<input type="checkbox"/>
Day 4	KD Powder ¹	Fresh seed	Daily Evening Meal Provide Tassie's Beans, a legume based protein rich meal as the shared evening meal. This is an important bonding time for your bird.	<input type="checkbox"/>
Day 5	Quik Gel ⁴	Fresh seed		<input type="checkbox"/>
Day 6	Chamomile Tea ³	Fresh seed		<input type="checkbox"/>
Day 7	Megamix ⁵	Fresh seed		<input type="checkbox"/>

¹ Mix 1gm KD Powder (white spoon) into 1 litre of drinking water. Fill the water vessel and use the remainder to clean the cage.

² Mix 10 drops Ioford, 5 drops Dufoplus and 10 drops Megamix thoroughly into 100ml of drinking water.

³ Provide chamomile tea in the drinking water.

⁴ Mix 1 drop Quik Gel thoroughly into 100ml drinking water.

⁵ To 100gm of sterile millet mix (no sunflower for birds diagnosed with concurrent Fatty Liver Disease) add 6 drops of Turbobooster and mix thoroughly. Then, add 1gm (white spoon) each of E-Powder and F-Vite and mix again so that these powders stick to the Turbobooster oil impregnated seed.

Recovery Period & Follow-Up Care

Positive changes will be noticed within a week of starting the above treatment plan. An increased appetite, feather colour and more sociable activity will quickly return. Take care to prevent night frights in cockatoos and galahs as bleeding episodes may persist for 2-3 months. For birds presented with excessively long beaks and nails, bi-monthly beak trims may be needed for up to a year as it may take this time for the excessive growth rate to return to normal. It may not be possible to reverse deformed and stiffened joints.

On our Fatty Liver and Nutritional Programme, blood cholesterol and liver chemistry levels should drop noticeably within two weeks and return to normal within 2-3 months. High liver and pancreas blood chemistry may persist when Fatty Liver Disease is long standing and liver cirrhosis has already occurred. Please return after 4 weeks of this treatment regime for a repeat blood test to monitor changes in blood cholesterol and liver chemistry.

Annual check ups are recommended to monitor the disease. This includes an assessment of feather quality and moult progression. Cholesterol and liver chemistry blood tests are also taken to ensure the diet and exercise routine has stabilised the disease.