

# Fatty Liver Degeneration & High Cholesterol in Eclectus Parrots

Carlingford Animal Hospital

## What is High Cholesterol & Fatty Liver Degeneration?

High cholesterol is harmful to the health of humans and birds. Fatty liver is the consequence of excessive levels of cholesterol in the blood. These conditions are common in Eclectus parrots because their natural diet is low in fat. Lack of exercise promotes cholesterol and FLD.

High Cholesterol and associated FLD are difficult to recognise from outward signs and produce many and varied symptoms associated with poor health. 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 additional symptoms.

A withdrawn or anxious personality and limited desire to interact and learn are other poorly recognised signs of high cholesterol and FLD.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 tumors) in Eclectus parrots.

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 fat or a lack of exercise. Other biochemistry blood tests findings may reveal the presence of Fatty Liver Disease or associated pancreas problems.

## Signs of High Cholesterol & Fatty Liver Degeneration

Eclectus parrots with FLD become anxious, introverted and may start to bite. There will also be beak, feather colour and moult abnormalities. A long beak and toenails may suddenly appear. As a result of secondary pancreas infections and proventriculus inflammation Eclectus will stop talking, yawn frequently, toe tap and wing flick. FLD often produces feather picking across the back and chest as a result of osteoporosis associated bone discomfort in birds housed for extended periods inside without exposure to direct sunlight.

A delayed moult and poor quality feathers that occur as a result of protein and other nutritional deficiencies is a constant finding with Fatty Liver Disease. Other less obvious signs include loss of appetite, inactivity, less talkative, reduced vocabulary, anxiety, recurrent illnesses and xanthomatous wing tumors.

Heart attacks are likely in birds with long standing 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 Eclectus parrots. Often owners will be providing their pet birds with a well balanced diet, but their birds will eat those fatty foods they like best, such as nuts or sunflower seed, and eat little else. Other factors which may be involved with FLD include genetic or family predisposition, hormonal influences, obesity, thyroid dysfunction, contaminated food and inadequate exercise.

Lack of exercise is a major contributing factor to high cholesterol and Fatty Liver problems. Our 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. Their sole diet becomes sunflower seeds or nuts as these foods totally satisfy their hunger. It is the protein deficiency 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.). A regular feeding routine involving cooked morning and evening meals together with a sterile millet feed mix given during the day is followed as part of the Cholesterol & Fatty Liver Nutritional Programme.

### Cooked Meals

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. Fresh vegetables such as red and green peppers, spinach and zucchini should also be fed during the day as part of the FLD Diet.

### 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).

Turbobooster is given in the seed or cooked meal once daily as part of the FLD Diet. It contains polyunsaturated fatty acids and good levels of tryptophan and methionine. It is given for 3 days each week. Chamomile tea or herbal medicines such as Milk Thistle may be recommended for those birds with advanced fatty liver disease.

An exercise routine of free flight outside the cage at least once a day is crucial for fast recovery. Walking exercise or short flights should be encouraged for clipped birds. Clipped birds should also 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 in the sun each day is required for the best results.

## Cholesterol & Fatty Liver Nutritional Programme

	In Drinking Water	On Sterile Seed	Daily Shared Meal Times	Daily Exercise & Direct Sunlight
Day 1	KD Powder <sup>1</sup>	Turbobooster, E-Powder & F-Vite <sup>4</sup>	<b>Daily Morning Meal</b> 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	Inca Honey <sup>2</sup>	Turbobooster, E-Powder & F-Vite <sup>4</sup>		<input type="checkbox"/>
Day 3	Ioford, Dufoplus & Megamix <sup>3</sup>	Turbobooster, E-Powder & F-Vite <sup>4</sup>		<input type="checkbox"/>
Day 4	Fresh Water	Fresh seed	<b>Daily Evening Meal</b> 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	Fresh Water	Fresh seed		<input type="checkbox"/>
Day 6	Fresh Water	Fresh seed		<input type="checkbox"/>
Day 7	Fresh Water	Fresh seed		<input type="checkbox"/>

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

<sup>2</sup> Mix 3 drops Inca Honey thoroughly into 100ml of drinking water.

<sup>3</sup> Mix 10 drops Ioford, 5 drops Dufoplus and 10 drops Megamix thoroughly into 100ml of drinking water.

<sup>4</sup> 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. For birds presented with excessively long beaks and nails, bimonthly 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.

**Please return after two weeks of this treatment regime for a repeat blood test to monitor changes in blood cholesterol and liver chemistry.**

**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.**

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.