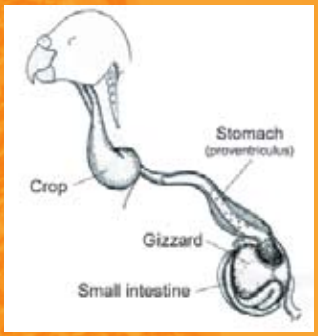
Gizzard Problems in Pet Birds

Carlingford Animal Hospital

Your bird has been diagnosed with a gizzard problem. This brochure explains the role of the gizzard in healthy digestion and summarises the different causes of gizzard problems. The diagnosis process involves dropping cultures, X-rays and blood chemistry tests. The immediate treatment plan of all gizzard problems involves crop flushing. This is the first step to alleviate the discomfort caused by gizzard dysfunction. Dietary modifications are then made to fully restore healthy gizzard function. These feeding recommendations are based on the wild diet of your bird. Feeding instructions are given for each group of birds overleaf. Dr Marshall will discuss the particular gizzard problem diagnosed in your bird and the best treatment plan to alleviate the worrying symptoms associated with the condition. It is difficult to recognise the early symptoms of gizzard problems. This means that by the time of diagnosis the gizzard problem has been present for some time and in these birds a full recovery may take some time.



The Role of the Gizzard in Healthy Digestion

In the wild, most birds (parrots, budgerigars, pigeons, poultry) eat their main meals in the early morning and late afternoon. These two distinct feeding times are taken on an empty stomach. This means the crop and stomach are fully stretched following each meal time. This feeding schedule stimulates the full release of digestion acids, which is essential for healthy digestion. Food within the crop and stomach remains there until digestion in the gizzard is complete. The crop and stomach empty their contents for the next stage of digestion when small digested food particles move from the gizzard into the intestine. Intestinal enzymes complete the digestive process allowing nutrients to be absorbed and assimilated for a variety of bodily functions. An orderly flow of food through the gizzard is crucial to healthy digestion as it controls the rate of passage of food through the entire gastrointestinal tract. As such the gizzard is the powerhouse of healthy digestion. Food delays in the gizzard initiate many digestion problems in birds. There are 4 broad categories of gizzard problems. These are described below and provide you with details about the exact gizzard condition of your bird.

1. Gizzard Dysfunction (diet and nutrition errors)
2. Gizzard Spasm (sudden onset)
3. Gizzard impaction (mineral craving)
4. Gizzard Paresis (muscle overload)

1. Gizzard Dysfunction

Gizzard dysfunction is the most common gizzard problem, and also the most complicated and difficult to diagnose. Birds with gizzard dysfunction are prone to gizzard spasm, gizzard impaction and paresis. These serious problems are described below. Chronic health issues, dietary errors and conditions that reduce calcium and protein levels in the body (e.g. ovary problems, fatty liver, mineral and vitamin D deficiencies) weaken gizzard muscles and predispose birds to gizzard dysfunction. Feeding a diet that lacks hard coarse foods (e.g. pellets) is a most common cause of gizzard dysfunction as hard fibrous foods are constantly required to maintain the strength of gizzard muscles.

Complicated digestion problems frequently accompany gizzard dysfunction. With gizzard dysfunction there is delayed movement of food from the crop to stomach, and stomach to gizzard. This sluggish movement results in fermentation of the crop with gas forming bacteria. Stomach bloat infections also occur due to reduced stomach acid secretion. These bloat infections are painful and responsible for confusing behaviours that include feather picking, aggression and lethargy. Nutritional deficiencies that develop in birds with gizzard dysfunction as a result of poor stomach digestion further weaken gizzard function. Birds with gizzard dysfunction from any cause are especially prone to gizzard spasm, impaction and paresis.

2. Sudden Onset Gizzard Spasm

Birds with weakened gizzard muscles become vulnerable to sudden onset gizzard spasm. This painful gizzard problem is seen when birds accidentally or intentionally ingest excessive amounts of hard fibrous or indigestible matter (wood, rope, cardboard, paper, metal, plastic, bark etc.). Birds suffering from acute onset gizzard spasm usually have underlying health or behaviour problems as it is not normal for birds to eat this type of indigestible matter. Extreme agitation, self- inflicted feather destruction; vomiting and loss of appetite are symptoms of this potentially life-threatening gizzard problem. Gizzard spasm occurs in varying degrees with different forms of gizzard impaction. Heavy metal ingestion produces the most serious form of gizzard spasm. Lesser degrees of gizzard spasm are seen when there is a gradual build up of foreign matter in the gizzard. This hard or soft material may remain caught in the gizzard for a lengthy period before obvious pain symptoms from gizzard spasm are noticed. Over time the overworked gizzard muscles become paralysed. This condition, called gizzard paresis, together with gizzard dysfunction associated with long term health failings, takes much longer to resolve than acute onset gizzard problems involving spasm and impaction.

3. Gizzard Impaction

Gizzard impaction is a potentially life threatening condition requiring immediate treatment. This condition is usually seen in female birds preparing to lay eggs (ovulating) and in birds with mineral deficiencies associated with digestion disorders or poorly balanced diets. These birds crave minerals and will over-engorge on mineral substances (e.g. sand, grit, dirt, soil or stones) when they are made available. The mineral craving may also cause some birds to chew on woody matter or ingest metal objects, fabric, rope, paper etc. when minerals are not available in an effort to satisfy their craving. This behaviour will impact the gizzard with undigestible wood fragments or cause heavy metal poisoning. Birds with an impacted gizzard develop sluggish digestion and are susceptible to toxic gas forming bacterial infections and nutritional deficiencies due to malabsorption.

4. Gizzard Paresis

Gizzard paresis occurs when the gizzard muscles become partially paralysed and can no longer fulfil their grinding function. Vitamin D deficiency and mineral deficiencies are common causes of gizzard paresis as they cause low calcium levels that weaken gizzard muscle contraction. Female birds with ovary problems may also be suffering from low calcium levels and as a result develop gizzard paresis. Gizzard paresis is also common in birds fed pelleted diets. The fine texture and softness of this extruded food does not provide sufficient hardness or bulk to stimulate healthy gizzard contraction. Overtime there is wasting of the gizzard muscles from disuse, which results in gizzard paresis. Gizzard paresis may also occur in birds with healthy calcium levels when they ingest of indigestible foreign matter (e.g. fabric, wood, plastic, cardboard, paper etc.). The gizzard muscles are unable to process this kind of hard substances, become overworked, fatigued then overtime paralysed. Birds with gizzard paresis often have complicated digestive disorders as a result of delayed food passage through the gut. These deficiencies worsen the gizzard problem. As a result the full recovery of birds with long standing gizzard paresis is lengthy.

Immediate Treatment Plan for Gizzard Problems

Gizzard therapy begins with an initial purging treatment that cleanses the stomach and gizzard of undigested food remnants or foreign matter. This treatment immediately relieves the discomfort associated with gizzard problems. Three flushes are given in hospital each day for 2-3 days. Each flush uses a crop needle to administer a nutritious rehydrating formula. The purging treatment is the starting point for restoring a healthy rate of food passage through the gut. Antibacterial medicines are included at the same time to treat gut infections, which accompany gizzard problems.

The number of days of flushing varies according to the amount of accumulated matter present in the gizzard. A timely repeat barium meal X-ray is taken to check the progress of flushing.

Restoration of Healthy Gizzard Function

Dietary modifications are required to restore health gizzard function following successful purging. Relatively soft foods are given over the first 2 weeks until the weakened gizzard muscles regain some strength. After this time more fibrous foods are gradually introduced over a period of 8 weeks in an effort to restore strong gizzard function. During this restoration period it is important to monitor for yawning and for bubbles or watery droppings. These findings show the gizzard has been upset by the introduction of coarse food. It is necessary to return to the soft-food diet and to administer Flagyl for 2 days when these changes are seen. The absence of yawning and well-formed morning droppings following the introduction of coarse food indicates the gizzard is coping well. With these birds it is possible to increase the coarseness of the diet.

Each parrot species varies in its need and gizzard tolerance to hard foods. The following chart lists different foods choices for each type of parrot at each stage of recovery. Please talk with Becky, Tailai or Casey if these instructions are unclear. Intermittent treatment with Flagyl may be required for some time in birds with longstanding gizzard problems. Dr Marshall will guide you through this plan if your bird requires this type of lengthy treatment.

	SEED BASED DIET (Budgerigars, Cockatiels, Cockatoos, Galahs, Kakarikis)	**VEGETABLE BASED DIET (Conures, Asiatics, Quakers, Amazons, Caiques, Macaws)**	**FRUIT BASED DIET (Eclectus, Lorikeets)**
	Wild diet is based on dry foods that provide coarse fibre to drive gizzard function.	Wild diet is based on a combination of soft and dry foods that drive gizzard function.	Eclectus wild diet is based on fruit pulp containing fibre and small seeds that drive gizzard function.
FIRST 2 WEEKS Protecting against gizzard overload	**Feed seeds & millet sprays** fortified with nutritional supplements (Turbobooster, E-Powder & F-Vite) throughout the day. * No branches/leaves or hard coarse matter for foraging	**Feed a cooked soft morning and evening meal** prepared according to the accompanying "Dietary & Meal Time Recommendations" brochure. Provide dry **seed** and **millets sprays** fortified with nutritional supplements (Turbobooster, E-Powder & F-Vite) throughout the day. * Lorikeets should receive a dry mix during the day. * Stop pelleted foods * No passionfruit * No raw vegetables/coarse food matter for foraging	
NEXT 8 WEEKS Restoring Gizzard Function	Introduce **raw apple slices** (peeled and cored), **corn, peas** and **fresh green eucalypt new growth leaves.** * No hard stems/bark/wood	Introduce **raw apple slices** (peeled and cored), **citrus rind** and **steamed carrot**. As gizzard function improves, harder foods such as **raw carrot, raw beans, broccoli, capsicum, corn** and **peas** may be offered. * No hard stems/bark/wood * No passionfruit	Introduce steamed apple, steamed carrot, cooked beans, peas and corn. As gizzard function improves, harder foods such as green beans, brocolli, capsicum and citrus rind may be offered. * No raw vegetables/hard fruit * No passionfruit
MAINTAINING STRONG GIZZARD FUNCTION	Continue **seed, millet sprays** and provide fresh fruit and vegetables as foraging foods during the day. **Fresh Eucalypt leaves and new growth** (no woody branches or bark) are provided for chewing opportunities and to maintain strong gizzard function.	Introduce cooked **brown rice** and continue cooked morning and evening meal topped with fruit and vegetables as above. Continue **seed & millets** sprays **Fresh green eucalypt growth and thin stems** are provided for chewing opportunities throughout the day.	Continue cooked soft, pulpy morning and evening meal as above. Introduce fresh vegetables and **raw apple** as foraging foods during the day. Continue **seed & millets** sprays * Lorikeets should be given bottlebrush, grevillea flowers and leaf buds to aid gizzard function.