

Nutrition and Treatment of Gastrointestinal Disorders in Small Exotic Mammals

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Ferrets

Ferrets do not have many nutritional disease problems associated with improper diet. This is due in part to the ability of ferrets to live successfully on a cat kibble diet. Although ferrets can live a normal life on a cat kibble diet they are usually not getting their required nutrient base. Cat diets are commonly lower in the protein and fat requirements needed for ferrets. It has been generally accepted that adult altered ferrets require 30-40% protein and 18-20% fat. Young growing animals have a slightly higher protein and fat requirement than the adults. Canine diets should never be recommended for ferrets because they do not provide adequate protein or fat and contain significant amounts of carbohydrates. Ferret diets may be supplements with lean meats such as chicken or beef or meat-based baby foods. A food recipe that has been used to encourage anorexic ferrets to eat includes: ferret food, vanilla Ensure, brewers yeast, Pet Tinic, kitten milk replacer, and Nutrical, blended together into a slurry. Chicken or beef meat-based baby foods are also used when ferrets are suffering with gastric ulcers.

Rabbits

The main nutritional problems diagnosed in rabbits are obesity, gastrointestinal flora disruption and trichobezoars. To reduce the incidence of the common nutritional problems a diet based on unlimited mixed grass or timothy has been advocated.³ No more than 1/8 cup of high fiber maintenance type rabbit pellets per 5 lb adult (non-breeding) rabbit with 1 cup of vegetables and some fruit to round out the diet. This diet should reduce the incidences of obesity, gastrointestinal flora disruption and trichobezoars. For anorexic rabbits the Oxbow Critical Care Formula or the homemade formula listed in the proceedings is needed to encourage eating and maintain energy levels.

Guinea pigs

The main nutritional disease diagnosed in guinea pigs is scurvy or vitamin C deficiency. Guinea pigs require 15-25 mg/day of vitamin C with pregnant females requiring 30 mg/day.⁵ This may be given either as a tablet supplement (Oxbow Pet Products) or added as supplement into their drinking water. Foods high in vitamin C content (e.g., oranges, kale, and cabbage) may be given in small amounts daily to increase the exposure of this important nutrient. The basic guinea pig diet should always be fresh and contain 20% crude protein and 16% fiber. Treats should be limited, especially fruits.

Small rodents

Due to their short life span nutritional diseases are not often diagnosed in rats, mice, hamsters or gerbils. To encourage a healthy life, a rodent kibble or biscuit diet is recommended. There have been numerous scientific studies evaluating rodent diets and commercially available rodent diets are available that provide excellent nutrition. Discourage the use of seed based diets and encourage the use of pelleted or biscuit diets with fresh vegetable supplementation.

Sugar gliders

Sugar gliders are an animal that requires more owner involvement with dietary formulation. There are commercially available diets but the nutritional formulations and quality control are suspect. Also the palatability and presentation of the commercial sugar glider diets may be unacceptable.

Hedgehogs and sugar gliders

These small mammals, like many other exotic pets, suffer from disease processes often linked to owner inexperience. Common problems noted in hedgehogs and sugar gliders are due to inadequate diets. Listed below are recommended diets for these two exotic companion animals.

Hedgehog diet (adult)/daily

1. 3 heaping teaspoon high quality cat/kitten chow
2. 1 heaping teaspoon fruit vegetable mix
3. 6 small mealworms or 1-2 crickets

Sugar glider diet (adult)/daily

Combined items should be mixed into a slurry % of diet by weight

1. chopped mixed fruit 40
2. cooked, chopped vegetables 8
3. peach or apricot nectar 34
4. ground, dry, low-iron bird diet 18

Sugar gliders are messy eaters therefore placing their food in a separate container within the enclosure that they can crawl in to eat will keep the food and surrounding substrate clean. Two food dishes and a sipper bottle should be used to feed and provide water for sugar gliders. Since sugar gliders appear sensitive to chlorinated water bottled or filtered water should be used in their sipper bottle and changed daily.² One food dish is used for dry food, while the other is for moist food. The recommended daily diet for a sugar glider should be 15 – 20% of the animal's body weight.² The diet should include a sugar glider pellet (NutriMax™; VetsPride®, Nashville, TN), (Glider-R-Chow™; PocketPets™, Cape Coral, FL) at 75% of overall diet (i.e. 30-60 grams/day/animal), a calcium-based multi-vitamin, and fresh fruits and vegetables.² Calcium-based multi-vitamin supplements (Glide-A-Mins™, PocketPets™, Cape Coral, FL) should be applied as indicated on the container instructions or sprinkle lightly on fruits and vegetables every other day.² No more than 25% of the diet should be fresh fruit and vegetables. As mentioned previously a separate “dining” area established in a container will keep the enclosure free of food debris that results from the messy feeding habits of these animals. Any fruit and vegetables left at the end of the day should be removed and the dining container cleaned prior to the next day's meal. To help young sugar gliders adapt to a pellet diet a fruit sauce (e.g. apple) can be placed on top of the offering. . Treats may be given periodically but only those manufactured for sugar gliders are recommended.

Gastrointestinal disorders

Ferrets

Gastroenteritis

There are two common problems diagnosed involving infectious disease and the gastrointestinal tract in ferrets, gastric ulcers and epizootic catarrhal enteritis (ECE). Gastric ulceration is often associated with *Helicobacter mustelae* infections. This problem is so prevalent in the ferret population that ferrets are considered an excellent laboratory animal model for human research on gastric ulceration. Eating, regurgitation, dehydration, bruxism, and occult blood in the stool are common signs that ferrets exhibit when presenting with gastric ulceration. Recommended treatment includes hydration therapy, soft foods, Amoxicillin (30 mg/kg, PO, TID q 21 days), Metronidazole (75 mg/kg, PO, SID q14 days) and sucralfate (Carafate, Hoechst Marion Roussel, 25 mg/kg PO, TID). It is extremely important to inform the owners that this condition can and most likely will reoccur especially when the ferret is in a stressful condition and becomes immunocompromised. ECE was first noted in 1993 as a highly contagious viral disease affecting ferrets. The common name for ECE is “green slime disease” because of the color and consistency of the feces of ferrets infected by this viral (corona virus-like) organism.⁵ Clinical signs of ECE include initial vomiting followed by a profuse green, watery diarrhea which quickly dehydrates the patient. Associated debilitating clinical signs are also associated with ECE such as anorexia and lethargy. Treatment for ECE begins with supportive care and hydration therapy. Oral antibiotics (Amoxicillin 10-20 mg/lb, PO, BID q7 days) are given to prevent secondary bacterial infections.⁵ Treatment with other therapeutic agents such as gastrointestinal protectants may complicate the healing process. If there are still problems with continued weight loss and loose stool 20 to 30 days after the initial presentation 0.25 mg/kg prednisone may be given orally once a day for 14 days to combat the ongoing lymphocytic inflammation in the intestine.

Rabbits and guinea pigs

Gastric stasis

Often associated with hairball formation in the stomach, gastric stasis is a critical condition because it often leads to anorexia. The rabbit must be hydrated and provided nutrition when not eating, especially in overweight patients. Recommended dietary supplementation products are Emerald Herbivore (Lafeber Company) and Critical Care for Herbivores (Oxbow Pet Products), 10-15 ml/kg TID. Another homemade critical care formula that may be used in place of the Oxbow product is (1 cup ground rabbit pellets, 1 cup fruit yogurt, 1 can Ensure/fiber formula). To reduce the incidence of gastric stasis an owner should feed a recommended diet of timothy grass hay, ad lib, supplementing with a daily measured amount of pelleted diet.

References

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Brust, D.M. “Sugar Gliders: A Complete Veterinary Care Guide.” Veterinary interactive publications, (2009).