

Introduction

Ferrets are inquisitive, lively and charming little creatures. They have an average lifespan of 5 to 7 years with the current record being 14 years. The scientific name *Mustela putorius furo* means “little smelly thief.” Ferrets are the domesticated form of either the Eastern or Western European polecat. They have been domesticated since at least 300 BC and were originally used for rodent control and to hunt rabbits. The majority of ferrets in the world today are kept as pets either in the house or in outdoor enclosures. Good informational books for ferrets include “Ferrets for Dummies” by Kim Schilling and “Ferrets (Complete Pet Owner’s Manuals)” by E. Lynn Morton.

Diet

Ferrets have a very short, simple digestive tract which limits the amount of food they can eat at any one time. They eat small, frequent meals, compared to other animals of their size. Because of the relative inefficiency of their digestive system, they need to get the most out of every meal

As carnivores, ferrets cannot survive without meat in their diet, but a diet limited to meat alone would cause harmful and eventually fatal nutritional imbalances. They can digest simple carbohydrates such as sugars and starches, but not the more complex carbohydrates found in vegetables and grains.

Dog and cat kibble were often used to supply ferrets with a balanced diet. However, specially formulated ferret diets are now available – high in energy, high protein, and low in fiber. There is no longer any reason to substitute dog or cat foods. Dry pelleted food, fed free-choice is best. It also helps keep your pet’s teeth clean. By comparison, moist diets spoil quickly and promote plaque buildup.

Ferrets do not like to be switched from one type of food to another. They become very attached to specific food formulas, and their favorite flavors. If a core diet change is ever necessary, the more gradually it is made, the less upsetting it will be to the pet. Good quality ferret diets include “Marshall Premium Diets”, “Natural Ferret Diets” and “ZuPreem Premium Ferret Diets”.

Pelleted food should always be protected from moisture. It is good practice to buy small packages of food and store the contents of opened bags in plastic bins with snug fitting lids. Food should never be left where it will get damp and mold, making it unpalatable, or worse, toxic.

Ferrets on dry diets must have a constant supply of water. The volume of water required is about three times the volume of dry pellets eaten. In

warm weather, your pet will likely drink much more. Ferrets prefer to drink from a dish, but kits and juveniles will usually play in it if left on the cage floor, contaminating it with food and litter. The water dish is best clipped onto the side of the cage.

Read the labels to determine the best foods for your pet. The ingredients of commercial animal diets must be listed on the container or package label in order according to the amount of each in the food. Good quality ferret diets should list meat, poultry or fish meal, or animal by-products as the first ingredient. Look for a label that also lists other animal products, such as liver meal, eggs, or blood meal.

Protein quality is very important. To properly evaluate protein in a feed, compare the guaranteed analysis to the ingredients list. If most of the protein is from poultry or meat meal, about 80% of it will be digestible. Protein from poultry by-product, or from ground yellow corn meal, is much less digestible. Ferret diets should contain over 30% crude protein of high digestibility. The label on some premium quality foods will tell you the digestibility of the protein. So will the price of the food. Good quality protein is more expensive.

Crude fat includes all the fat in the diet, from both plant and animal sources, but not all types of fat are equally digestible. Ferrets need animal source fats, and prefer their flavor. Complete ferret pelleted diets should contain 15-18% fat, the most concentrated form of energy for your pet.

Fiber is indigestible carbohydrate that adds bulk to the diet and can cause an increase in the quantity of stool. Sources of fiber include plant hulls, such as oat bran, or vegetable material such as beet pulp. There should be little fiber in your ferret's diet, 4% or less.

Supplements

Ferrets do not need supplements of any kind if they are being fed a balanced diet.

If the ferret is being fed a high quality dry ferret diet, it is unlikely he or she will need routine supplements other than a fatty acid supplement in cases where the hair coat is dry or the skin flaky in appearance.

- **Fatty Acid Supplements** – Occasionally ferrets can develop a dry hair coat or dry skin and may benefit from the use of an oral fatty acid supplement. Coat or skin dryness can be due to a lack of sufficient fat in the diet or a very dry environment. However, overuse of fatty acid supplements can lead to obesity. Dry itchy skin can also be a sign of adrenal disease. Please consult your veterinarian if your ferret for the proper use of a fatty acid supplement.

- **Treat Foods** - Humans, not ferrets, have an emotional need for treat foods, so it is not necessary to feed ferrets any treats. As mentioned, most commercial ferret treats are completely inappropriate and actually can create a health risk. Please read labels before you feed a commercial product to your pet. Avoid getting your pet hooked on any high carbohydrate treat, which includes cookies, breads, crackers, cereal, ice cream and cake. Any sugar or fruit-based treat food, including melon and raisins, should be considered junk food. While occasional junk food treats may not cause any health issues, large quantities of junk or small amounts offered frequently may unbalance the diet or provide enough carbohydrates to impair health. We all like to have the occasional treat. Many of us would like to watch our pets enjoy a treat as well. However, we must realize we weigh 50 to 100 times more than a large male ferret, and junk food IS bad for us unless its ingestion is seriously restricted. Consider these thoughts when choosing a treat and remember the size difference when choosing the size portion you offer.

- **Hairball Laxative** – Hairball laxatives are generally composed of a petroleum product such as Vaseline®, or a paraffin product plus a sweetener such as molasses or corn syrup. It would be best to avoid using sweeteners in the ferret's diet for reasons already mentioned under the general diet section. However, hairballs can develop in some ferrets over one year of age. It may be beneficial to provide some sort of lubricating agent to help remove the hair from the stomach before it forms a compact mass. Consult your veterinarian on necessity, type and quantity of laxative to use.

Environment

- **Caging and Exercise** – Ferrets should not be caged 24 hours a day. Like all animals, they need exercise to develop strong bones and muscles as well as for healthy mental activity. In addition, time out of the cage spent exploring or playing is a healthy mental activity that can help prevent behavioral problems. Ferrets have the physiology of a predatory hunter and will play intensely for an hour or so and then sleep deeply for several hours. Although ferrets are nocturnal by nature, they will adjust their activity schedule to yours without much fuss. The home cage should be a minimum size of 24”x24”x18” high for up to two ferrets. The cage can be multilevel, but avoid steep ramps because ferrets are not natural climbers and could fall and injure themselves. Aquariums are not suitable cages for ferrets because of inadequate air circulation. Make sure the cage is made of a material that will be easy to clean and deodorize and is indestructible to ferrets digging in the corners. The cage floor can be solid, but should be waterproof and easy

to clean or made of wire mesh with openings no larger than 1/4" to prevent foot injuries. Ferrets should be allowed to exercise in a supervised, ferret-proofed exercise area a minimum of 2 hours a day. This exercise period can be all at once or divided up into two or three play periods. Ferrets in the wild would spend a good deal of time in burrows underground, eating, sleeping, and hunting. Make sure you block off all escape routes and remove toxic substances such as plants, household cleaners, insecticides and rodenticides. Make sure you look underneath furniture and cabinets clogging any holes that a ferret might fit in to. They enjoy burrowing and climbing in dark holes, so be very thorough when preparing the home. Protect the carpeting from digging with heavy plastic carpet protectors. Keep your pet from burrowing into the bottom of your furniture or mattresses by covering these areas. The burrowing is not only damaging to the furniture, but the ferret can eat the foam rubber inside and develop a fatal intestinal obstruction. Recliner chairs should be checked before entering and exiting because ferrets like to climb into the chairs to sleep and when the chair is reclined, the ferret can be crushed. Some pet stores and Internet ferret supply sites sell moveable ferret exercise pens that are great for allowing your pet to have time outside of the cage while being protected from dangerous situations. You can place a mat under the pen to keep the floor clean. These can even be used outdoors with strict supervision. (Never leave your ferret(s) alone outdoors in any open pen arrangement.) Make sure the bars on the exercise pen are sufficiently narrow to prevent escape, sufficiently far from the top to bottom to prevent your pet climbing out, and the pen's walls are at least 4 feet tall. Some pens have smooth sides, such as those made of Plexiglas, to prevent climbing or escape.

- **Sleeping Area** – In the wild, ferrets would sleep in a dark, warm, dry nest underground. Simulate this same environment by providing sleeping material in which a ferret can feel safe. A sleeping area can be as simple as a soft towel, old shirt or cut off trouser leg or blouse sleeve. There are now a wide variety of sleeping paraphernalia for ferrets sold at pet stores such as cloth tubes, tents and hammocks. Occasionally a ferret will chew on cloth, but this is usually baby behavior and most ferrets grow out of it. If your pet does chew on cloth, remove the item from the cage and use a small cardboard or wooden box with clean straw or hay for a sleeping area. After the ferret matures try the cloth sleeping materials again.

- **Litter Box** – Ferrets can be litter box trained. Ferrets like to use the bathroom in corners or where there is a vertical surface. With this in mind, use a small cat litter box with low sides that can be placed in a corner of the cage or exercise area. Do not use clay or clumping kitty litter in the box

because ferrets like to burrow and play in the clean litter and the dust from the clay is damaging to the fur. Some ferrets also can develop eye, nose and vulvar irritation from clay litter. A pelleted or shredded bedding is preferable, because it not only prevents the problems mentioned but they are often more absorbent, non-toxic if swallowed, and can be composted. There are a wide variety of suitable pelleted or shredded bedding materials on the market sold either for cats or for small mammals. As mentioned, ferrets back up to a vertical surface to defecate and urinate, so only a thin layer of litter is needed or all the waste material will go over the side of the box. Ferrets do not cover up their waste so it will be necessary to change the litter material several times a week to minimize stool odor. If the ferret is allowed to exercise over a large area of the house it will be necessary to place litter boxes in several locations. When ferrets need to go, they will not travel far to take care of the situation.

- **Toys** – Never give your pet ferret any latex or foam rubber toys. Ferrets like to chew on and then swallow these products and the result can be a fatal intestinal obstruction. Make sure to remove any access to foam or latex rubber items in your home such as stereo speakers, headphones, rubber soled shoes, pipe insulation, rubber bands and rubber dog, cat or baby toys. As mentioned under Cages and Exercise, prevent access to the underside of furniture and mattresses because these are also sources of foam rubber. In addition, do not use any toys (like bean bags) that contain items inside such as dried beans, nuts, grains or Styrofoam® pellets. More appropriate toys are those that simulate the ferrets need for burrows or their attraction to hunting. Appropriate tunnel-type toys would include large cardboard mailing tubes, dryer hose, paper bags and PVC pipe. Toys that simulate moving prey include ping pong balls, small metal cans, golf balls, and small cloth baby toys or feather cat toys on springs that hang. Do not use any cloth toys if your ferret shows an interest in chewing them, but this is usually baby behavior and cloth is not a problem for adults. Remove buttons and eyes from any cloth baby toys.

Grooming

In general, ferrets need very little grooming. Ferrets do not need to be bathed and excessive bathing can actually cause dryness of the hair coat and skin. Ferrets have a natural musky odor to the skin that is part of who they are and it will never be completely eliminated by bathing. To be blunt, if the odor is a problem you should consider getting a different species of pet. Unneutered ferrets do have an especially strong odor involving the skin and hair coat and the urine, particularly when they are reproductively active.

Scent is huge part of how ferrets communicate with each other. You can tone down this strong 'perfume' by neutering the pet which will reduce the odor to a light musky smell. Most ferrets sold in the U.S. have already been neutered at the time of weaning.

Ferrets have a set of paired anal glands, much the same as in dogs and cats. The family that ferrets belong to, Mustelidae, also includes skunks, weasels, mink, and they are all known for the strong odor of their anal gland secretions. Fortunately, ferrets can't spray the anal gland contents like a skunk can, and they do not release the anal gland smell unless they are alarmed or very fearful. When the scent is released, you can smell a strong odor for a few minutes and then it fades away. Young ferrets express their glands much more frequently than do confident adults. It is not necessary to routinely express or remove the anal glands of a ferret unless disease is present. However, in the U.S., most ferrets in the pet trade are sold with the anal glands already removed at weaning.

Ferrets normally tend to have a fair amount of reddish brown wax in their ears. Avoid the urge to continuously remove this wax as it has a protective function. In addition, continually putting cotton-tipped applicators into the ear may inadvertently push wax into the ear canal. Once you have had your ferret checked by a veterinarian to ensure it is free of disease, let the ferret clean his or her own ears by shaking its head and scratching from time to time.

Ferret nails are sharp and may become entangled in carpeting or cloth. It will be necessary to trim your pet's nails every 6 to 8 weeks to keep them in shape. Have an experienced person show you how to trim the nail the first time.

Handling

Domestic ferrets are generally easy to handle and are not aggressive little creatures. However, like all pets, they can become frightened and their first response may be to strike out and protect themselves with their teeth. We do not recommend keeping ferrets in households with children under 6 years of age because of the possibility that the child may inadvertently harm the ferret and an unfortunate accident may result. In addition, be a responsible pet owner and never put a pet in a threatening situation where it will be forced to defend itself. You are ultimately responsible for all your pet's actions.

Ferrets have poor eyesight and should never be placed in a situation where they might fall over the edge of a high surface. In addition, do not hold ferrets near your face, especially if you are not familiar with his or her

behavior yet because a nose can look like a really neat toy to bite if it comes towards the ferret suddenly. Most of the time you need only pick up your ferret and hold him/her in your arms to move him/her from place to place. Sometimes it is useful to scruff your ferret in order to keep him/her still for certain procedures like giving medications, checking the ears, eyes or mouth, or for bathing. To scruff a ferret, grab the skin along the back of the neck firmly and then hold the pet up so that the hind feet cannot touch the ground. Stroke the ferret's underside gently and slowly from top to bottom, which will relax your pet further. Most ferrets become very relaxed with this restraint method. Occasionally a younger ferret or a very frightened animal will object and you will not be able to use this hold.

Vaccinations

- **CANINE DISTEMPER** - Canine distemper virus (CDV) is a contagious disease caused by a large RNA paramyxovirus (canine distemper virus or CDV). CDV can be transmitted to ferrets directly from infected animals including dogs, foxes, raccoons and other ferrets, through contact with infected material such as shoes or clothing. You can bring CDV home if you are in contact with infected material in places such as the woods, a pet store or a breeding facility. Using a CD vaccine that is not approved for use in ferrets can also transmit CDV. Distemper Vaccinations for dogs are NOT recommended for ferrets. Most of the canine vaccines contain other virus vaccines (canine hepatitis, parvovirus, e.g.). Not only are these extra disease fractions not necessary for ferrets, but the use of this kind of vaccination can have serious and even fatal consequences in ferrets.

The current recommendation is to have your pet vaccinated for CDV annually. High risk situations for ferrets to become exposed to CDV include ferret shows, exposure to wildlife (especially, raccoons and feral dogs), outdoor enclosures, outdoor camping, exposure to pet store animals (e.g. visiting the pet store with your ferret), and ferrets who are constantly introduced to new ferrets (e.g. breeding, open enrollment play groups).

A major concern surrounding vaccination of ferrets for CDV is the possibility of an anaphylactic (allergic) reaction to the vaccination. This has unfortunately been a problem with some vaccines that have been used in the past. Whenever possible, it is best to stay at or near your veterinarian's office for a minimum of 30 minutes after a vaccination so your pet can be observed for any reaction, and if one occurs, proper steps can be taken. It is unclear why some ferrets react and others do not, why some react one year but not again, and why some react every year. With the pressure of the ferret community, the vaccines have improved dramatically over the last 15 years.

The sad fact is that CDV still exists and in fact is on the rise in some areas where a large number of 'homeless' dogs exist (e.g. most inner city areas). CDV is a fatal disease with a long a painful course. With vaccination, it is preventable. Discuss your ferret's life style and vaccination options with your veterinarian.

- **RABIES**– Rabies is caused by a virus that can affect many species of animals, including man. The virus is shed in the saliva and transmission is usually through a bite wound. It can also be spread through contact of infected saliva with a mucous membrane or any open wound. Since rabies is a human health issue, there are strict local and state regulations that govern the vaccination of most domestic pets for rabies. In some areas of the country, if a ferret bites a human and it was not vaccinated for rabies, the ferret will be confiscated and destroyed so the brain can be examined for the rabies virus. This is the law and your lack of knowledge about it will not protect you or your pet. Find out before there is a problem, what the laws are regarding rabies vaccination and ferret bites in your area. There is one approved one-year vaccination for rabies in ferrets but there is no approved 3-year vaccine. Some areas require the purchase of a rabies tag, which your pet does not have to wear, but you need to keep for proof of vaccination.

Routine Veterinary Care

Ferrets up to 2 years of age – Ferrets up to 2 years of age need annual physical examinations and annual vaccinations for canine distemper and rabies as described above. Ferrets are susceptible to developing heartworm disease. If you live in a part of the country where heartworm disease is a problem for dogs and cats, it may be recommended that you use a heartworm preventive medication. Your ferret does not need to be outdoors to contract the disease. Mosquitoes, which transmit the disease, can easily get into a house. Heartworm prevention is possible through a number of different medications used in dogs and cats at the same dose per pound. Please consult your veterinarian on options.

Ferrets over 2 years of age – Unfortunately there are a number of diseases that can plague the ferret after 2 years of age including adrenal disease, insulinoma, skin and other cancers and heart disease. In order to manage these problems effectively it is essential to strive for early detection. For this reason ferrets over 2 years of age should have a physical examination performed at least every 6 months. For ferrets up to 5 years of age, it's recommended to get annual blood tests and x-rays to further investigate disease potential. Ferrets over 5 years of age should have these diagnostic tests performed every 6 months. Routine vaccinations as well as

heartworm prevention should continue as before. Any additional tests and procedures can be discussed with your veterinarian. Because insulinoma is so common in ferrets over 2 years of age, it is helpful to routinely fast your pet for 3 to 4 hours before a routine checkup so the blood glucose can be accurately assessed.

Medical Problems

The following is an overview of just a few of the medical problems that can afflict the pet ferret. Many of these conditions are seen in the ferrets as early as 2 years of age, which is why it is so important to have your pet checked by a veterinarian more than once a year as your ferret ages. Any concerns or questions need to be taken up with your veterinarian. The internet and even books can be misleading or just wrong. It's in your pet's best interest to take all medical concerns to your vet. Together, you and your veterinarian can form a valuable team to provide the best possible care for your pet.

- **EMERGENCIES** - If you feel that you have an emergency situation, tell the veterinary office when you call that you feel this is an emergency. It can be difficult for the veterinary staff to know that a situation is an emergency if you are unclear on basic information or if you don't specifically say that you think it is an emergency. Be clear and concise with pertinent information, which includes:

The condition of the ferret at this moment (be as precise as possible)

How long the condition has been present

Ideas you have on why you think your pet is ill

It is helpful to jot down some notes about your pet before calling the veterinary office so you don't forget important information.

- **HUMAN INFLUENZA** – Ferrets are highly susceptible to the human influenza virus or the “flu.” They do not get the common cold, which is caused by another set of viruses. Ferrets can get the flu from humans and humans can contract the flu from ferrets through contact with respiratory secretions. Adult ferrets develop a watery discharge from the eyes and nose, sneezing, coughing and a fluctuating fever. Occasionally they also develop diarrhea. They feel miserable for a few days but usually recover uneventfully. Baby ferrets can be more severely affected, so avoid handling baby ferrets if you have the flu. Your veterinarian may prescribe medications to make your pet more comfortable. Basic supportive care (meeting fluid and nutritional needs) is most important.

- **FATAL ANEMIA OF FEMALE FERRETS** – This disease is caused when an unneutered female ferret goes into estrus or heat and does

not get bred. She can stay in this state for several months during which time her estrogen levels remain quite high. The estrogen can eventually stop the production of blood cells in the bone marrow, thereby leading to a severe anemia and ultimately death. The prevention for this disease is to have your female ferret spayed. Most American ferrets are already neutered when they are purchased so we do not see this disease as frequently as we used to.

- **FLEAS** – Ferrets are susceptible to fleas, particularly if they are kept outdoors, but can also be infested if other pets in the house bring fleas inside. It is best to avoid the use of insecticides on your pet and there are safer alternatives that can be used once a month on the coat during the flea season.

- **HEARTWORM DISEASE** – Ferrets, like dogs and cats, are susceptible to infestation by the heartworm. Mosquitoes transmit the larvae of this parasite when they feed on a host. The adult worms live in the heart of the pet and in a ferret, the heart is so small that the presence of even one or two worms could be fatal. If you live in a heartworm prevalent area of the country, particularly if your pet is living outdoors or you have mosquitoes regularly invading your home, you should have your ferret checked annually for this disease and use heartworm preventive medication. Please consult your veterinarian regarding options and doses.

- **FOREIGN BODIES IN THE STOMACH OR INTESTINE** – Ferrets, particularly under a year of age, love to eat foam and latex rubber, which can become lodged in the intestine or stomach. In addition, ferrets over one year of age can develop large masses of hair in the stomach, which also can cause an obstruction. All of these situations are dangerous and usually require surgery to remove the foreign material. Signs of a foreign body obstruction include lethargy, extreme dehydration, vomiting, lack of stools, painful abdomen, seizures and death. Any ferret who acts lethargic (like a limp rag) needs to be taken to a veterinarian as soon as possible. If there is an obstruction, a 24-hour delay could be the difference between life and death. The best prevention for this problem is to adequately ferret-proof the environment as described previously.

- **EPIZOOTIC CATARRHAL ENTERITIS (ECE)** – This is the name given to “green slime disease” that has affected ferrets, particularly in shelters, since 1993. The current theory is that this disease is caused by a coronavirus. Fortunately, most ferrets recover uneventfully from ECE; however, some ferrets, particularly older ones or those with other disease, can be severely affected. ECE spreads rapidly and ferrets exposed will exhibit signs of disease within 48 to 72 hours. The most common historical finding involves a new ferret addition to the household. The new ferret is

healthy in appearance but the established ferrets in the home get ill. It is also possible for you to bring in the disease after exposure to infected ferrets at pet stores or ferret shows. ECE can result in both inflammation of the GI tract as well as inflammation of the liver. The signs of illness initially can range from vomiting and a soft, green, mucous-coated stool to bloody diarrhea. Recovered ferrets and some unaffected ferrets may be carriers. Young ferrets usually recover from ECE rapidly, but older ferrets may lose significant body condition and continue wasting once the diarrhea is gone. Treatment depends on the severity of the illness and can include intestinal coating agents or antacids, anti-diarrheal drugs, antibiotics, injectable fluids and dietary changes.

- **ALEUTIAN DISEASE** – This is a viral disease that has been around for a long time in mink that were farmed for fur. The disease does occur in the ferret and it can cause a wide range of signs due to the variety of organs that can be affected. There is currently great controversy over the incidence of Aleutian Disease in the ferret population. Currently there is no treatment or vaccination for this disease.

- **HEART DISEASE** – Ferrets over 2 years of age can develop heart disease. The most common type seen is cardiomyopathy or heart muscle disease. We do not know why ferrets develop this problem; however, it could at least be in part genetic. The signs of the disease are weakness, particularly after exercise, and an overall loss of energy. Ferrets usually don't cough, but may have more rapid breathing. There are three basic types of cardiomyopathy in ferrets and each is treated with a combination of heart medications. Diagnosis of the type of disease requires an ultrasound of the heart and sometimes an ECG (electrocardiogram). The prognosis for control of heart disease depends on the type of disease and its severity.

- **SKIN TUMORS** – As ferrets age they are more prone to develop lumps and bumps on their skin. Most of these lumps are neoplasms or tumors. Fortunately the majority are benign, but it is best to have them removed because one cannot tell benign from malignant without a biopsy. The longer you wait to have them removed, the greater the possibility for complications

- **ADRENAL DISEASE** – This is a very common disease of ferrets over 2 years of age. It is either a neoplasm (cancer) or hyperplasia (unusually high activity) of the adrenal glands, which are located near the top of each kidney. These glands are part of the endocrine or hormone producing system of the body. For unknown reasons, in ferrets the adrenal glands become diseased and can enlarge and cause pressure on surrounding tissues, such as the kidney and vena cava, but more importantly they

produce excessive amounts of androgens or sex hormones. This overproduction of hormones results in a variety of signs including a symmetrical loss of hair, increase in body odor, enlargement of the vulva in spayed females, return of the mating or aggressive urge in neutered males, dry brittle hair coat and itchy skin. In addition, some males can develop an enlargement of the prostate gland, which constricts urinary outflow. These ferrets have difficulty urinating and eventually may not be able to urinate at all. There are now many different possibilities for managing adrenal disease. There are a number of medical and surgical options as well as options that combine surgery and medical treatment.

- **INSULINOMA** - This is neoplasm of the beta cells in the pancreas. This disease often occurs at the same time as adrenal disease and is just as common. The pancreas, like the adrenal glands, is also part of the endocrine or hormone producing system. The beta cells produce insulin, which acts to move glucose from the bloodstream into the cells. Diabetes is a lack of insulin that prevents glucose from getting into the cells, resulting in a high glucose level in the bloodstream. Insulinoma is an excessive production of insulin that drives the glucose out of the bloodstream and into the cells too quickly, resulting in a low blood sugar level. This leaves the brain and red blood cells with an insufficient supply of “fuel for energy,” which results in weakness, excessive salivation, seizures and eventually death. These signs are seen intermittently because the body is constantly trying to replace the glucose and early in the disease it can successfully do so for periods of time. The signs may disappear on their own. As the disease progresses, however, the ferret has longer and more frequent periods of abnormal behavior. The treatment for this disease is usually surgery to remove as much of the cancer as possible combined with lifelong medication. It is critical to remove as much carbohydrate from the diet as possible as well because carbohydrates will only aggravate the condition.

- **OTHER CANCER** – For unknown reasons, ferrets are prone to a number of other neoplasms in addition to insulinomas, adrenal cancer and skin cancer. Lymphosarcoma is a cancer of the lymphatic system and is the one cancer that can affect ferrets of any age. At time it was thought that lymphosarcoma could be caused by a virus (like in cats). While this theory remains unproven, this cancer can occur in clusters of ferrets in a single home. It can be treated in many cases with chemotherapy, but the success varies with each case. Other organs that can be affected by neoplasia include liver, kidneys, spleen, anal glands, ovaries, testicles, gums, bones and lungs. The treatment is dependent on the cancer, and the condition of the pet.