

SMALL MAMMAL HEALTH SERIES

By Susan Brown, DVM

Ferret World

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Introduction

Ferrets are inquisitive, lively and charming little creatures that have captured the hearts of thousands of people around the world. 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. For more information about the history of ferrets, please read [History of the Ferret](#).

In this handout I will discuss the general care requirements of the ferret as well as some of the diseases you should be aware of. The information in this handout is an overview and there are other articles you can read for more detailed information on a particular topic. Good books include *Ferrets for Dummies* by Kim Schilling, *Ferrets (Complete Pet Owner's Manuals)* by E. Lynn Morton. Other articles available on Veterinary Partner relevant to subjects covered in this article include [Rethinking the Ferret Diet](#), [Ferret Grooming](#), [Canine Distemper in Ferrets](#), [Ferrets Product Guide](#), [Internal Link Error - Article Not Found - InternalLink:A:492:Flea Control for Ferrets](#), [Lumps and Bump on Ferret Skin](#), and [Gastrointestinal Disease in Ferrets](#).

Diet

Ferrets are obligate carnivores, meaning they are designed to eat whole prey items, which includes all parts of the killed animal. They have to eat animal tissue to meet their nutritional requirements. Plants, including fruits and vegetables, are not a significant part of a natural ferret diet. Ferrets have a very short gastrointestinal (GI) tract and the intestinal flora (the organisms living in the GI tract) are very simple, unlike the flora of animals that eat more vegetation. It takes about 3 to 4 hours for food to go from one end to the other and thus the food eaten must be of very high quality because there is little time to digest and absorb it. Ferrets tend to eat several smaller meals and carry any excess to their dens to eat later. Did you ever have a ferret that took food and tucked it away in the corner of the cage, or under a piece of furniture?

Because of the short GI tract and the poor absorption of nutrients, ferrets require a diet that is highly concentrated with FAT as the main source of calories (energy) and highly digestible MEAT-BASED PROTEIN. This would match the basic composition of a prey animal, not excluding the essential vitamins and minerals it also contains. Ferrets should never be fed carbohydrates (such as vegetable, fruit or grains) as the main source of energy in the diet. Ferrets cannot digest fiber, as is found in some vegetable and fruit sources. If there is a significant amount of fiber in the diet it serves to lower the nutritional value of the food. As mentioned, ferrets need a highly digestible meat-based protein in the diet. Vegetable protein is poorly utilized. Ingestion of excess vegetable protein can be associated in ferrets with such diseases as bladder stones, poor coat and skin disease, eosinophilic gastroenteritis (wasting, diarrhea, and ulcerations of the skin), poor growth of kits and decreased reproduction. Dog food and vegetarian-type pet foods are completely inappropriate for use in ferrets because of the high level of vegetable protein and fiber. *The bottom line is that ferrets use fat for energy, not carbohydrates, and they need a highly digestible meat-based protein, not vegetable protein.*

Another concern regarding the feeding of high carbohydrate foods to ferrets is the stress what may be created in the beta cells of the pancreas. Unfortunately, insulinoma, which is a cancer of the beta cells, is extremely common in ferrets over two years of age in the U.S. The main function of the beta

cell is to respond to increases in glucose in the blood stream by producing insulin to control it. If normal beta cells are bombarded with higher than normal levels of glucose (which comes from digestion of carbohydrates) they can become hypertrophied (overactive) trying to keep up with insulin demand. If the high carbohydrate diet continues, the result may be a complete burnout (or atrophy) of the cells, which is what happens when a pet or a person develops diet-induced diabetes. However, another possibility is that instead of the cells burning out, they go from hypertrophy to neoplasia (cancer). Neoplasia is an abnormal growth of cells and can be preceded by a hyperplastic condition. I would like to stress that this exact mechanism has not been scientifically proven in ferrets to date and there are no known models of this phenomenon. Nevertheless, this scenario is entirely within the realm of possibility. It has been disturbing to note in countries where ferrets were fed a raw carnivore-type diet in years past that insulinoma was a rare occurrence but now in these same countries where processed diets are becoming popular, cases of insulinoma are on the rise.

The most appropriate diet for a ferret would be whole prey foods such as rats, mice or chicks. However, I realize that the average American feels squeamish or downright distressed by the thought of feeding these foods. However, owners of reptiles that are obligate carnivores, such as snakes, must feed these prey foods routinely, as there is no alternative for these reptile pets. If you are interested in trying this diet with your ferret then read [Rethinking The Ferret Diet](#) for information on sources for disease-free, humanely-killed frozen prey foods.

The next best choice to feeding a whole prey diet is to feed a balanced raw carnivore diet. There are more and more of these diets available in either freeze-dried or frozen form as pet food companies realize that heat processing the food and making baked kibble formed from grain products may not be the answer for our carnivorous pets. Several of the fresh, frozen or freeze-dried carnivore diets have been successfully used in ferrets. My current recommendations are [Archetype Diet](#) for ferrets by Wysong and [Nature's Variety](#) raw or freeze dried feline diets. Wysong diets are cold-processed; contain beef, lamb and chicken meat products; are well accepted; and come in small chunks so it is easy to feed. In general, you should look for diets that are made from meat suitable for human consumption (preferably organic) containing all the parts of the animal (organ meat, muscle, fat and bone), a high level of fat, and containing no grain or grain products, sweeteners or chemical preservatives. *Do not use diets designed only for dogs that contain higher amounts of vegetables and grains.* Because these diets are not cooked (even the freeze-dried ones) you must be vigilant about the hygiene in your kitchen just as you would when handling raw meat or chicken prior to cooking for your family. Make sure you clean counters and food bowls thoroughly. See [Rethinking The Ferret Diet](#) for information on Internet sources for other frozen or freeze dried carnivore diets.

Now consider dry, processed ferret diets, the very diet most veterinarians, ourselves included, have used for years. *Although there have been tremendous strides made in the quality of dry ferret diets in the last 25 years, I have yet to see one that I believe is completely appropriate for ferrets.* Let's take a look at the composition of these diets and compare that to what we know of ferret nutrition. We have discussed that ferrets are carnivores and need a high protein, high fat diet with minimal carbohydrates. To use numbers, a dry ferret diet should contain at least 30% to 40% crude protein and 15% to 20% fat. The protein should be of animal origin and highly digestible. *Unfortunately, pet food labels do not indicate digestibility of the components and the protein percent you read may contain both animal and plant sources of protein.* In addition, grains, such as corn, wheat or rice, are used not only to increase protein but as a filler and as a means of binding the final product together to make the kibble form. Ingredients on a pet food label are given in the order of their amount in the diet, starting with the largest. For ferrets, the first three ingredients ideally should be meat-based. Processed dry foods are heated during production and in the process nutrients can be destroyed or altered and then have to be replaced artificially. In addition, other additives may be used to keep the food from spoiling. To add insult to injury, several of the diets contain dried fruits and vegetables. Ferrets do not need these items, and in addition, the dried form of a fruit or vegetable can make it nearly impossible for the ferret to break down in its digestive tract because they are often swallowed whole. I and other veterinarians have had several cases in which ferrets needed emergency surgery to remove pieces of dried fruit or vegetable that were blocking the intestine consumed in a "ferret diet." Clearly, these diets are packaged to appeal to human consumers and may have little to do with appropriate ferret nutrition. The good news is that with pressure from consumers, pet food companies continue to look for more appropriate ways of feeding our carnivorous companions while still making it convenient.

The worst examples of processed diets are the ferret treat foods. Nine out of ten ferret-specific treat foods I examined had no meat products whatsoever and were comprised entirely of sweeteners and grains, with some fruits and vegetables thrown in. This is not only not healthy, it is downright dangerous.

In addition, people who use treats often use too many because it is emotionally appealing to watch a ferret enjoy a snack. So if the pet enjoys one treat, why not give him five or six? In an animal with such a small body size, five or six treats might make up a good portion of his food for the day. For an animal the size of a ferret, a grape-sized treat is like a cantaloupe-sized treat for us. Of course ferrets love the treats because they are attracted to sweets, but that does not mean it is good for them! Many people like candy, but if they ate candy as 25% of their diet, they would have some serious health problems including diabetes! Again, the packaging is for the human and as long as we keep buying it, companies will keep making it.

If you decide to make a change, you may find that adult ferrets can be very particular and will resist change. This is because ferrets develop most of their taste preferences by four months of age but they will eventually change if given no choice. I do not believe that it is necessary to take a long time weaning a ferret off of a less digestible and introducing him to a more digestible diet. I prefer to keep that transition very short and eventually you have to go "cold turkey" and only give them the new diet. If you keep offering the old diet, there may never be a change to the new diet because they will always go back to the original diet, particularly if that is what they were getting prior to four months of age. It will probably be necessary to let your pet get hungry before he or she makes a change. Temporarily coating a new food with a fatty acid supplement like Linotone® or vegetable or fish oil as an enticement may help. *However, be aware that ferrets that have insulinomas should not be fasted for more than 6 hours.* These little guys may take a bit more time to change over the diet. If your ferret is currently being treated for any illness, consult your veterinarian first before making any changes.

Supplements

Ferrets do not need supplements of any kind if they are being fed a balanced raw, freeze-dried or whole prey 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 (seen with some dry diets) 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.* But if you must give a treat, how about a nice piece of raw liver or heart, a bit of raw muscle meat or raw egg? If raw food is something you are not ready to try, use some bits of cooked meat or egg. Dog or cat treats that are composed of freeze dried muscle or organ meat are appropriate to use. Also, pieces of a freeze-dried carnivore diet can be offered in the dry form. *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 if

we could 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 and this might be related to a diet that does not contain the normal bone, skin and fur of a prey animal that would help to move the ferrets own hair through the intestinal tract. Since most ferrets are not eating a whole prey diet, 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. Try using only Vaseline, thereby avoiding the sweetener in hairball products. You can put a pea-sized amount on your pet's front paw every third day. If that doesn't work, try putting the Vaseline on the ferret's front paw and he/she will naturally lick it off to keep clean. If Vaseline does not work, try a small amount of feline hairball laxative product.

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 *aminimum* 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. Think like a ferret, get down on your hands and knees and look for areas that might be attractive to him or her to dig or burrow into. Make sure you block off all escape routes and remove toxic substances such as plants, household cleaners, insecticides and rodenticides. 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 with a solid piece of thin plywood, hardware cloth, or Plexiglas®. 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 removed 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. We need to 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. I have also seen ferrets that developed 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. Some examples of materials used for pelleted or shredded beddings include: recycled paper; cellulose; and various woods such as cedar, aspen or pine. There is no evidence that using wood pellets with their slight aromatic smell is harmful to ferrets. They do not spend a great deal of time in their litter boxes, so any aromatic oils they would inhale would be insignificant. 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. Ferrets have been known to eat toys made from pipe cleaners. 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. It is unfair to ferrets to reject this part of their physiology to suit yourself. Not only are ferrets not meant to smell like pine trees or pineapples, but also such intense odor changes are likely very disturbing to the ferret. 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. We 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, so we never have to deal with the sometimes overpowering odor of an unneutered pet.

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, so this becomes a moot point.

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. It is not terribly difficult, especially if you use a treat such as a fatty acid

supplement to distract them from the procedure! For more information on grooming, see [Ferret Grooming](#).

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. By the way, this advice applies to cats, dogs, and other pets as well. 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. For more information on using ferrets in public situations see [Reducing the Risk of Ferret Bites](#).

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). Baby ferrets receive a series of vaccinations with the completion at 14 weeks of age. Adult ferrets that have never had CDV vaccination will initially receive a series of two boosters, then one annually thereafter. There are CDV vaccines on the market that are labeled for use in ferrets.

I will briefly take a moment to mention that 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 and painful course. With vaccination, it is preventable. I urge you to discuss your ferret's life style and vaccination options with your veterinarian.

For more detailed information on CDV, read [Canine Distemper in Ferrets](#).

• **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. *Please find out before there is a problem what the laws are regarding rabies vaccination and ferret bites in your area.* It does not matter if your ferret was never exposed to rabies, the law will prevail. 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. *The first vaccination for rabies can be given anytime after the ferret is 14 weeks of age and annually thereafter. The following list represents high-risk situations where ferrets absolutely should be vaccinated for rabies annually:*

- *Ferrets living where rabies vaccination is legally required* – This one is obvious! In many municipalities, licensing of ferrets is required by law (the same as with dogs and cats). A current rabies vaccination is required to obtain the license.
- *Ferrets living outdoors* – This includes those taken on camping trips or walked in wooded areas or living in outdoor cages.
- *Ferrets with exposure to children* – Very young or pet-inexperienced children can inadvertently frighten or disturb a ferret, which increases the likelihood of a bite. See [Reducing the Risk of Ferret Bites](#).
- *Ferrets that will be used in public demonstrations or attend ferret shows* – When people handle ferrets and are afraid or unfamiliar with them, they may startle the ferret and increase the possibility of a bite.
- *Ferrets that are being boarded* – This is a protection for your pet should he/she inadvertently bite anyone while you were not there to supervise.

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 I recommend ferrets over 2 years of age have a physical examination performed at least every 6 months.* For ferrets up to 5 years of age, I recommend 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 (see below) 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. There are many articles in this series to refer to about specific diseases and they are mentioned on the first page as well as throughout this article. In addition to these articles, there is a wealth of information on the Internet and through local and national ferret organizations. However, sometimes this information is conflicting, confusing or downright incorrect. *Be a responsible pet owner and educate yourself through more than one source and discuss any conflicting or new information you may obtain with your veterinarian.* Together, you and your veterinarian can form a valuable team to provide the best possible care for you 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:

1. The condition of the ferret at this moment (be as precise as possible)
2. How long the condition has been present
3. Ideas you have on why you think your pet is ill
4. It is helpful to jot down some notes about your pet *before* calling the veterinary office so you don't forget important information. For more information on this topic read [Ferret Emergencies](#).

- **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, but antibiotics are not appropriate for this disease as it is viral, not bacterial. 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. It is also vital to clean up the environment to completely eliminate the flea problem. Please consult the [Internal Link Error - Article Not Found - InternalLink:A:492:Flea Control for Ferrets](#) if you have a problem with fleas on our pets.

- **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. The standard heartworm preventive medications are safe to use in the ferret at the same dose per pound as in the dog or cat. Please consult your veterinarian regarding options.

- **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 includes lethargy, extreme dehydration, vomiting (but they often don't), 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. For more information on this disease see the handouts [Internal Link Error - Article Not Found - InternalLink:A:477:Gastrointestinal Disease in Ferrets](#) and [Ferret Emergencies](#).

- **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. For more information on ECE, please read [Internal Link Error - Article Not Found - InternalLink:A:477:Gastrointestinal Disease in Ferrets](#).

- **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. For a more in depth, scientific article, refer to [Aleutian Disease in Ferrets](#).

- **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 a 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. Please read [Lumps and Bump on Ferret Skin](#) for more information on this topic.

- **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. For more information on the prostate problem read [Internal Link Error - Article Not Found - InternalLink:A:478:Prostate Disease in Ferrets](#).

• **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.

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