

Insulinoma

How to Recognize It and Emergency Treatment

Insulinomic ferrets may just act a little tired, lethargic. Their back legs may wobble. They may seem "out of it" and stare at nothing. They may feel nauseous. Some let you know by pawing at their mouths. More severe symptoms include seizures or comas, which are life threatening, of course.

If an Insulinomic ferret is comatose, having a seizure, can't use its back legs or is very wobbly, quickly rub Karo Syrup on the gums. Honey may be substituted if you don't have Kao Syrup. Use a q-tip to avoid being bitten if the ferret is seizing. Many ferrets will become alert and act normal within a minute.

Follow the Kao Syrup with a high protein meal (quibble or duck soup without sugar) to help stabilize the blood glucose. Contact a ferret knowledgeable veterinarian.

Caution: KARO SYRUP OR HONEY IS AN EMERGENCY MEASURE ONLY, NOT A TREATMENT.

Karo Syrup is preferable to honey; it can be utilized more quickly. When you give an influx of sugar - in this case Karo or honey - it will quickly raise the blood sugar and the ferret may feel much better, but what goes up must come down, and the blood sugar will soon fall back to its previous level - or lower. Using Karo or honey as ongoing treatment means that preferred treatments are being withheld from a sick ferret and the ferret may be suffering needlessly.

Treatment - Surgery is usually the preferred treatment. In the hands of a skilled surgeon, a partial pancreatectomy can give increased lifespan, and often no medicine is needed for a time, even years. A partial pancreatectomy is removal of the tumor(s) and part of the pancreas. Until recently, surgeons just removed or "popped" the tumors. The sooner the partial pancreatectomy is done, the better the results, so don't wait. Your ferret can do well on medicine, sometimes for a long time, if surgery cannot be done.

Cure - Sadly, there is no absolute cure, and even mild insulinoma will always get worse as tumors grow or seed into new ones. But with the right care, an Insulinomic ferret can live comfortably and happily for years, and depending upon when they get sick, may live out a normal lifespan.

Blood Glucose - the Numbers - Quick quiz: A ferret has a fasting blood glucose reading of 90. Normal? Or suspicious? Many veterinarians and experienced owners might say 90 is normal. Until recently, blood glucose readings in the 80s or 90s were considered normal, and even as low as the 70s. In actuality, a blood glucose level even as high as the low 90s may indicate an early insulinoma, depending on the ferret's history, testing pattern and other symptoms.

The Insulinomic ferret, regardless of treatment selection, should have a blood glucose test every 4 to 12 weeks. The test should be read in the veterinarian's office, not sent out to a lab. It only takes a couple of minutes. Because they have had insulinoma for quite some time, our ferrets all have 4-week interval blood glucose tests. A test should be done two weeks after surgery, and frequently for some time. After that, intervals can be a little longer; assuming the blood glucose range stays high - say in the 100s.

Ulcers and Pred - PediaPred should always be given with food, as it is upsetting to the stomach. Watch for the signs of ulcer, which can include grinding and increased flattening showing discomfort (also a sign of lethargy). Ulcers can be easily treated with antibiotics and carafate - generally .5 ccs of carafate 4 to 6 times a day. Dr. Weiss does not recommend the use of Pepto Bismol, and has found that sufficient carafate (and antibiotics) works quickly, without causing the stress that Pepto can. Carafate should be given 20 minutes after antibiotics, so it won't interfere with absorption. If you don't have 20 minutes, try to wait 5 or 10. Because ferret motility is so fast, there is no need to wait much longer.

Down with Raisins (sigh) - No sugar for Insulinomic ferrets! What is sugar or has sugar in it? Raisins, Pedialyte, Petromalt, Ensure, Nutrical, Sustical, fruit, honey, or anything that has an ingredient with the letters "ose" at the end contains sugar. A caveat is that if a ferret has had a "successful" partial pancreatectomy, for a time that ferret can be considered normal, and very small amounts of sugar probably won't hurt. Basically, sugar causes the blood glucose of an Insulinomic ferret to zoom way up and then crash very low.

Insulinomic ferrets aren't allowed a cheerio unless they have recently eaten a high protein meal - kibble or duck soup made almost entirely from kibble. Sugar should not be given when their stomachs are empty. You should never give raisins or fruit. Ever.

Something to think about: For those of you who regularly give your non- Insulinomic ferrets sugar (raisers included), you might want to consider that insulinoma can stay hidden for a long time. That means sugar is being given to Insulinomic ferrets.

Treats and Helping Stabilize - To help stabilize blood glucose, give frequent meals and high protein snacks. You can hand feed ferrets their regular food - it seems to taste better that way. Keep kibble in every room of the house in little dishes up on tables and hand them pieces as they go by. Also treat them with cat/kitten kibble. Make sure you're feeding them a high protein kibble, like Totally Ferret. Dr. Willard of Totally Ferret has said not to switch Insulinomic seniors to the senior food, which has lower protein.

Looking Ahead and Monitoring - When a healthy ferret is two or at the latest three years old, getting a fasting blood glucose test will give you a baseline or even could uncover an unsuspected insulinoma. Then, depending on your ferret's age and lineage, testing every six months to one year will allow you and your veterinarian catch the disease early; sometimes the numbers will tell you even before the symptoms begin.

If blood glucose tests are not conclusive, an insulin test can be done. It's about 50% accurate, unfortunately. If it's positive, it's accurate. If it's negative it may or may not be. The blood glucose test can be repeated with a longer fast, but not usually longer than 5 hours. If the blood glucose is borderline, but there are symptoms, it is likely insulinoma is present. If a ferret has symptoms, be very cautious about fasting. Lengthy fasting can cause a severe drop in blood glucose, and even seizures.

Backwards Treatment? - Too often, it seems that treatment is done backwards. Typically, the ferret gets symptoms and is put on medicine, and only after the medicine stops working is surgery done. At that point the surgery may not seem to help all that much, so people say that surgery isn't valuable. But during the time the ferret was on medicine, tumors were growing. Surgery needs to be done as early as possible, not as a last resort - though even then, it may help. Of course, how skilled the surgeon is makes a difference. For a time after a successful partial pancreatectomy, the ferret can be totally insulinoma free. Surgery can give a high-quality life without medicine or symptoms.

Partials are Harder - Partial pancreatectomies are trickier than simple tumor removal, though a good surgeon can learn by talking through the procedure with veterinarians who have been doing this procedure for some years. Location of the tumor(s) in the pancreas also influences how difficult the surgery is. And tumors can be very difficult for an inexperienced surgeon to find. That presents a serious problem for the owner - and ferret - with no easy answers.

Magic Potions - Sometimes people make claims about supplements and mixtures that do not appear to hold up under scrutiny. While people say their ferrets were kept alive for X amount of time, remember ferrets would ordinarily live X amount of time anyway. Sugar/honey exacerbates this illness; good diet and FREQUENT high protein feedings help stabilize the blood glucose, but the only actual treatment that can considerably prolong length of life appears to be surgery (as early as possible) followed by medicine or a second surgery in some cases.

Surgery 101 - The Basics - Fasting should not be longer than 3 hours before surgery. The pre-operation fasting time may have to be even less and more closely monitored if the ferret is severely Insulinomic. On occasion glucose must be administered to keep the ferret stable, if symptoms are severe. Isoflurane is the ONLY anesthesia that should be used, not Ketamine or any other. And often the shorter the time under anesthesia the quicker the recovery. Surgeries lasting two to three (or more) hours can slow recovery markedly.

Post-surgery fasting is generally 14-18 hours. Ferrets should be given sub-q fluids and pain medication after surgery is complete. Dr. Weiss' ferrets usually go home the day of surgery, in order to reduce stress. They are often given a pain shot and more sub-q fluids just before they leave. That is generally the only pain medicine they'll need, though a quarter of a tablet of Torbutrol is sometimes given at home (if they need it) about 12 hours post-op.

ASAP - Whatever you do, please don't wait to get treatment for this illness. It is not forgiving. Insulinoma can get worse even in a couple of weeks. A month can be a long time.

By Beth Camarow via consultation with Dr. Charles Weiss