

# CHRONIC GI PROBLEMS IN CATS & DOGS

Chronic vomiting, diarrhea or both are fairly common problems in dogs and cats. They may be related to relatively minor causes, such as chronic swallowing of hair, or due to much more serious diseases. Pancreatitis, heartworm disease, infections, allergies, parasites, kidney or liver disease, and immune system problems are just a few of the more than 100 causes of vomiting and diarrhea.

**Urgency:** Because there are so many causes, there are many tests that may be needed to make an accurate diagnosis. One of the factors that determine how quickly these tests must be performed is the condition of your pet. If the appetite is very poor or non-existent or if weight loss is occurring rapidly, it is important that a diagnosis be obtained rapidly. If pain or a mass is present in the abdomen, tests need to be performed quickly. However, if neither appetite nor weight is affected, the urgency is much less.

**Sources of GI problems:** Vomiting and diarrhea may be due to disease in the stomach or intestines, or disease in many other parts of the body. As a rule, most of the latter diseases are detected with blood tests. However, only a few diseases in the stomach or intestines show up in those tests.

**Testing Procedures:** The sequence of tests will vary from pet to pet. The urgency issues already discussed are one of the most important factors that we must consider. However, as a rule, we recommend blood tests to eliminate the diseases that are not directly involving the stomach or intestines first. Liver or kidney disease, pancreatitis or infection may be detected on blood tests. If those do not detect the problem, the other tests, listed below, will be utilized. A CBC, chemistry panel and thyroid testing in cats or PLI testing in dogs costs about \$150. In younger cats we don't usually need the thyroid test, which is about \$50 of that cost.

**Stool Testing and deworming:** Parasites and bacterial infections are common causes of chronic digestive problems. We will almost always want to test your pet's stools for worms, protozoal parasites and abnormal bacteria before doing more invasive or expensive testing. There are three different tests to look for these three types of problems, so stool testing is over \$100 for a vomiting cat or dog.

Many people hesitate to do these tests thinking that parasites are rare in indoor cats and backyard dogs. That's not true, however. 95% of kittens have parasites when young and most cats continue to harbor at least a few of them all their lives. Not only do 95% of puppies have worms as well but they acquire them throughout their lives from their environment. Dewormers kill adult worms but not the larval stages in many cases, so we can't ever completely rid a pet of parasites.

Because some parasites are difficult to detect in stool samples we may also elect to deworm your pet even if parasites are not found in the stool, especially cats who go outdoors, hunt or have had fleas. These activities increase risk for tapeworms, which are difficult to test for. In dogs we may test multiple stool samples trying to rule out whipworms and stomach worms, neither of which shed large enough numbers of eggs to show up well in stool samples.

Deworming costs about \$40-80 depending on the medication, number of treatments and size of the dog or cat.

**Tests for Diseases of the Stomach or Intestines:** Once we have ruled out the diseases that are easy to test for the next step is usually a set of blood tests that look at the function of the pancreas and the small intestine. We refer to this set of tests as a gastrointestinal or GI panel.

There are four tests in the panel: PLI is an enzyme produced by the pancreas. An elevated PLI means the pancreas is inflamed and the pet has pancreatitis. Pancreatitis is treated with pain medication and special low-fat diets. The other pancreatic test is TLI. This one tells us whether the pancreas is making enough digestive enzymes to properly digest food. If not, we can add enzymes to the food to replace what the pancreas isn't producing.

The intestinal tests are both looking for changes in vitamin levels. Low cobalamin and/ or high folate levels mean intestinal disease is present. When the intestine is thickened and not functioning properly vitamin B12, or cobalamin, is not absorbed well and the level of cobalamin in the bloodstream becomes too low. If your pet's B12 level is low we will teach you how to give vitamin B12 injections at home to improve the blood level and also start treatment for intestinal disease. When bacteria overgrow in an unhealthy intestine they produce excess folate, which then shows up in the bloodstream. If this is the case we treat with antibiotics. Treatment may be needed anywhere from a few weeks to forever. Probiotic supplements may also be used to reintroduce healthy, good gut bacteria.

A GI panel costs about \$200 and it takes 10-14 days to get results back from the lab.

**Age-related changes:** The intestinal tract becomes less efficient with age. Elderly cats absorb as little as 30% as much of the food they eat as a younger cat does. If a cat is over the age of 16 or a dog over 14 and is slowly losing weight, sometimes we can chalk it up to old age. The problem is that it's also possible that a disease process is actually causing the weight loss. If we assume it's old age and it's not, the pet won't receive treatment it needs to get better.

**Diet trials:** Pancreatitis is a common cause of digestive upset. We have a quick, convenient in-house tests for pancreatitis that just tells us positive or negative. More accurate testing is done through our outside laboratory. If we suspect pancreatitis we may start your dog on a bland, low-fat diet to treat for this disease even before we know the diagnosis or if we think it's a possibility. Fat content in the food is not a big factor in pancreatitis in cats.

Food allergies are another possible cause of chronic vomiting or diarrhea. Special hypo-allergenic diets may be tried to rule out this disease. During the 2-4 week hypoallergenic diet trial your pet should not eat anything other than the hypoallergenic diet! (No flavored medications or toothpaste are allowed either.) Vomiting or diarrhea should improve considerably after a few weeks on the new food. If it does, we can either stick with the special diet or introduce one food item back at a time to try to identify what your dog or cat is reacting to. Artificial dyes and flavorings, preservatives or certain food ingredients may be upsetting your pet's system.

The amount of fat and/or fiber in a food can also make a difference. There are special diets for addressing these issues as well.

**Radiographs (x-rays):** Radiographs can be taken to look for kidney stones, foreign objects in the intestinal tract or tumors within the abdomen. Sometimes barium is given to find foreign materials in the digestive tract that don't show up well. Objects made of bone, metal or other very hard substances usually are easy to see but items such as plastic or fabric may only be seen if barium outlines them. Radiographs made with barium are taken as a series. Barium is placed in the stomach and radiographs are made every 15-30 minutes until the barium reaches the end of the intestines. These radiographs permit us to evaluate:

1. How quickly the stomach empties
2. If the barium moves completely through the intestines and how quickly that occurs
3. If the intestines are dilated
4. If there are areas in the intestines that are very irritated
5. If there is a rupture of the stomach or intestines

These radiographs do not require sedation or anesthesia unless the pet is very uncooperative.

**Ultrasound:** An ultrasound study is performed with a machine that sends sound waves into the body. Their reflections are analyzed by a computer and formed into an image on a computer-type screen. There is no radiation involved. These images allow a trained operator to visualize the structure of the stomach and intestinal walls. It also permits evaluation of the liver, kidneys, and other abdominal organs. Biopsy of abnormal areas of most organs is also possible and can provide the needed tissue samples for a diagnosis to be made.

An ultrasound examination usually does not require sedation or anesthesia; however, the dog or cat must lie on its back for 15-30 minutes. Some pets will not do that without sedation. If biopsies are taken, sedation is usually required to prevent pain and to prevent damage to internal organs.

An ultrasound of the abdomen can reveal whether the stomach or intestines are thickened and can help in the diagnosis of pancreatitis and liver disease. Tumors of the gastrointestinal tract and swollen or cancerous abdominal lymph nodes may be seen as well. Sometimes we can obtain biopsy samples of abdominal organs with a needle, guided by the ultrasound image. These are tiny samples, not as good as we can get via surgery, but sometimes they are sufficient to make a diagnosis.

Ultrasound exams are done primarily by radiology or internal medicine specialists. A consultation and ultrasound is about \$450-500, more if sedation is needed or biopsies are obtained. Ultrasound may be recommended as a stepping stone to decide whether an exploratory surgery is warranted.

**Endoscopy and Biopsy:** When we've ruled out most of the causes of chronic vomiting or diarrhea with the tests and treatments already discussed, and we still don't have an answer, it's time for biopsies. A biopsy means we take a small piece of whatever organ is diseased, put it in formalin, and send it off to a laboratory to be looked at by a pathologist. Looking at the cells under the microscope, the pathologist will tell us whether there is inflammation or cancer. In cats, there is a spectrum of cell changes from the inflammation of inflammatory bowel disease to low-grade lymphoma and on up to high-grade cancerous lymphoma. It can be difficult to tell where along the spectrum a cat falls, so even with biopsy samples we may not have a definitive, cast-in-stone diagnosis. This is our best shot, though, to figure out for sure what's wrong.

There are three ways to get biopsy samples from the digestive tract. The first is an exploratory surgery called a laparotomy where an incision is made into the abdomen, allowing us to see and get samples from all the abdominal organs – stomach, intestines, pancreas and liver. We can also remove any foreign material found. This is the gold standard procedure, as we can get the best samples for the best chance of diagnosis this way.

A laparotomy is a major and expensive procedure but it sometimes is the only way to get the diagnosis we are looking for. You can expect to spend anywhere from \$800-3000, depending on what we find and how long surgery takes. We do these surgeries here at Best Friends. Complications can include peritonitis and breakdown of the intestinal incisions, requiring a second surgery to fix it. Although complications are rare they are serious when they occur.

The surgery specialists at Lakeshore Veterinary Specialists in Port Washington can do exploratories via laparoscopy. In these procedures small incisions are made into the abdomen to introduce fiberoptic and surgery instruments and biopsies can be taken without the major incision into the abdomen. The equipment and the board-certified surgery specialist needed to do this makes the expense much higher than for an exploratory laparotomy here at Best Friends. You would probably pay \$3000 or more for this type of procedure.

An endoscope is a flexible scope that is inserted through the mouth, down the esophagus, and into the stomach and first few inches of the small intestines. Endoscopy permits

a specialist to look at the insides of the esophagus, stomach, and upper small intestines. It also permits biopsies to be taken. The endoscope may also be inserted through the anus and into the colon, called colonoscopy. Colonoscopy is done for pets with chronic diarrhea, but usually not when vomiting is the primary symptom.

Endoscopy requires anesthesia just as the exploratory surgery or laparoscopy would, so there is always a small degree of risk involved. However, the surgery time is usually less and it does not require surgical incisions, so the risk of complications is low.

The major limitations of endoscopy are small biopsy size and the inability to reach and get samples from the liver, the pancreas and portions of the small intestine. It's very common for cats to have problems with the liver, pancreas and intestines all at the same time and if we only biopsy the intestines we may have missed a large portion of the disease we are trying to treat.

Small sample size is a big limitation because the pathologist often needs to see the entire thickness of the stomach or intestine to make an accurate diagnosis. For example, some tumors of the stomach do not go completely to the inner surface of the stomach. Since the biopsies obtained with an endoscope are only made from the stomach lining, it is possible to miss them.

We are not only limited to small samples of the intestines with endoscopy but we also can only reach the duodenum, the first section of small intestine. If the pet's disease is in the jejunum or ileum, the middle and end sections of small intestine, we will miss them. It's very frustrating to have done the endoscopy procedure only to get a pathology report back that says the samples weren't good enough to reach a diagnosis. The price for endoscopy isn't lower than the price of an exploratory laparotomy and in fact is often higher. Thus we usually only recommend endoscopy when a pet has health problems severe enough to make a laparotomy unsafe.

In some cases, surgery is performed as one of the first procedures if an intestinal obstruction is diagnosed or strongly suspected.

**Medication trails:** As you've probably figured out through reading this, it can be expensive to test for all the causes of chronic vomiting and diarrhea in pets. We don't always have the luxury of every one of these tests. When we must, sometimes we treat for the problems we think are most likely and hope the pet responds.

Many times, this will include a steroid trial. Inflammatory bowel disease is common but often is difficult to diagnose. Prednisolone is the best treatment for it and luckily it's an inexpensive drug. It reduces inflammation in the intestines and also makes the dog or cat feel better and often eat better. Cats are very resistant to steroid side effects but dogs can have side effects, such as drinking a lot of water and having urinary accidents, that can make use of steroids problematic. We also worry if the pet has diabetes, periodontal disease, heart disease or other problems that steroids can make worse. Steroids slow healing and mask IBD and lymphoma on biopsies so once we make a decision to start prednisolone we can't go back later and decide we want to do an exploratory surgery.

Intestinal lymphoma in cats often responds to a chemotherapy drug called chlorambucil. It's an oral medication that you would give at home in addition to prednisolone. It is also used for severe cases of IBD that don't respond to pred alone. Since lymphoma in cats often has a really good response to treatment with this drug it's another one that we may treat with to see if it helps even without biopsies to tell us what is wrong. Chemotherapy is not something to take lightly and monitoring is needed for cats on this drug but it's worth a try if our other tests and treatments haven't fixed the vomiting.

In dogs, and occasionally in cats, antibiotics often work to treat chronic digestive problems. We may do antibiotic trials with metronidazole or Tylan to see if the pet gets better. Helicobacter infection in the stomach can cause chronic vomiting and is treated with a combination protocol of two different antibiotics plus an antacid medication.

Diet trials and symptomatic treatment for gastritis or diarrhea, too, are often done early on, before a lot of other testing, because they are easy and relatively inexpensive. Then if we

