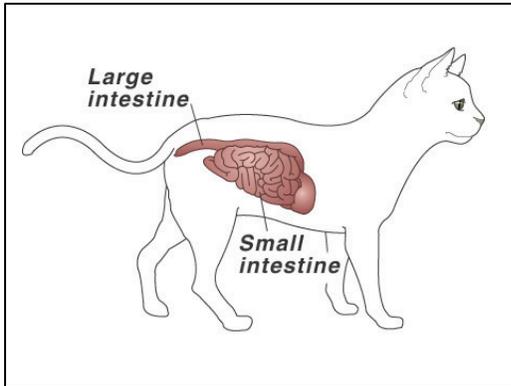


# INFLAMMATORY BOWEL DISEASE

## ***What is inflammatory bowel disease?***



Inflammatory Bowel Disease (IBD) is a syndrome rather than a specific disease, with a number of possible causes. Occasionally, the stomach may be involved. Most pets with IBD have a history of recurrent or chronic vomiting or diarrhea. During periods of vomiting or diarrhea, the pet may lose weight but is basically normal otherwise. If the syndrome lasts for more than a few months, weight loss and poor appetite are common.

IBD results when cells involved in inflammation and immune response are called into the lining of the GI tract. This infiltration thickens the bowel lining and interferes with absorption of nutrients from food, and motility (the ability of the bowel to contract and move food). With abnormal ability

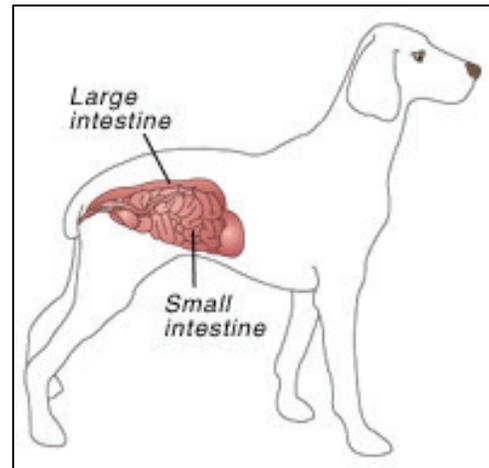
to contract and abnormal ability to absorb, the bowel's function is disrupted. Chronic vomiting results if the infiltration is in the stomach or higher areas of the small intestine. A watery diarrhea with weight loss results if the infiltration is in the lower small intestine. A mucous diarrhea with fresh blood (colitis) results if the infiltration occurs in the large intestine. Of course, the entire tract from top to bottom may be involved. Many people confuse inflammatory bowel disease with irritable bowel syndrome, a stress-related diarrhea problem. Treatment for IBS is aimed at stress; it is a completely different condition from IBD.

## ***Why would the Veterinarian Think My Pet Might have Inflammatory Bowel Disease?***

A little vomiting or diarrhea here and there seems to be pretty standard for pet dogs and cats. After all, cats groom themselves and get hairballs. Dogs eat all sorts of ridiculous things they aren't supposed to. Still, many owners notice that their pets seem to have vomiting or diarrhea a bit more often than it seems they should. It might be subtle where one notices that one is cleaning up a hairball or vomit pile rather more frequently than with previous pets or it could be the realization that one hasn't seen the pet have a normal stool in weeks or months. Typically, the animal doesn't seem obviously sick. Maybe there has been weight loss over time but nothing acute. There is simply a chronic problem with vomiting, diarrhea or both. Inflammatory bowel disease is probably the most common cause of chronic intestinal clinical signs and would be the likely condition to pursue first.

## ***What causes this disease?***

The cause of IBD is poorly understood. In fact, it appears there are several causes, and often a cause is not found. The basic theory is that "something" is leading to a chronic stimulus of inflammation. This could be an allergy against a food protein, the continuing presence of a parasite, inflammatory products produced by the normal bacteria living in the intestine or there may be an underlying problem with the immune system in affected individuals. Obviously, there may be different causes in different individuals or a combination of the possibilities listed working together. Whatever the cause, the end result is that the lining of the intestine is invaded by inflammatory cells. An allergic-type response then occurs within the intestinal tract.



This inflammation interferes with the ability to digest and absorb nutrients.

### ***What are Other causes of Chronic Vomiting or Diarrhea?***

It is important to rule out parasitism as best as possible in cases such as these. A fecal flotation for worms is a good idea. Parasites such as whipworms or giardia may be difficult to detect so a short course of treatment with either metronidazole or Panacur to rule out their presence might also be a good idea, especially in the dog. Stomach worms called *Physaloptera*, contracted by hunting bugs or other small animals, can cause recurring vomiting, but usually do not cause diarrhea. *Physaloptera* are difficult to find without actually looking in the stomach with a scope or with surgery, but are easily treated with dewormers. Any cat with chronic vomiting should be dewormed prior to extensive diagnostics or treatments.

Pancreatic enzyme insufficiency or chronic pancreatic inflammation might cause chronic vomiting or diarrhea. A blood test called a trypsin-like immunoreactivity test is required to rule out these possibilities (it is included as part of the "GI Panel" blood test mentioned below. Pancreatic enzyme insufficiency is an especially important problem in German Shepherd dogs. The medical term for this problem is called Exocrine Pancreatic Insufficiency (EPI).

More serious causes of chronic gastrointestinal complaints might include intestinal cancer (especially lymphosarcoma/lymphoma), fungal infection infiltrating the GI lining, or a lymphatic condition called lymphangiectasia. The latter is much more common in the cat than in the dog. A biopsy will differentiate inflammatory bowel disease from these other conditions.

An infection in the stomach with a bacterium called *Helicobacter* is associated with inflammatory disease of the stomach, but we do not know enough to establish which is the cause and which is the effect. *Helicobacter* infection can lead to ulceration and inflammation, compounding the problems of the inflammatory bowel disease.

### ***How is IBD diagnosed?***

The first step in pursuing any chronic problem is doing tests which make up a "metabolic database." This means a basic blood panel and urinalysis to rule out general problems (such as liver disease or kidney disease) that could be responsible for the symptoms. Since inflammatory bowel disease is localized to the GI tract, such a database is usually normal, but might express a general inflammatory response in the blood, mild anemia or a loss of blood proteins. Mild anemia can happen as a result of any chronic inflammatory disease. Low blood proteins can be caused by leaking of albumin (an important blood protein) from the intestine into the bowel contents. Dogs should be tested for heartworm disease, and cats for the feline leukemia (FeLV) and feline immunodeficiency (FIV) viruses. Older cats should be tested for an overactive thyroid (called hyperthyroidism). The feces should also be evaluated for parasites and other infectious organisms.

Next, more blood tests on the blood or feces might be done to evaluate the pancreas and intestines, and to further look for infectious organisms which can cause diarrhea. These tests might include a "gastrointestinal panel" and several fecal tests that may be sent to an outside laboratory, and require several days to wait for results. Radiographs or ultrasound may also be a good idea to rule out growths in the abdomen or tumors that could be accounting for the chronic problems.

If this kind of non-invasive testing is not revealing, then the definitive test for inflammatory bowel disease is needed: a biopsy. Tissue samples must be harvested from several areas of the GI tract. This can be done either surgically or via endoscopy.

Endoscopy involves the use of a skinny tubular instrument (an endoscope) which has a tiny fiber optic or video camera at the end. After inducing anesthesia, the endoscope is inserted down the throat, into the stomach and into the small intestine and small pinches of tissue are obtained via tiny biting forceps. If the large intestine is to be viewed, a series of enemas is needed prior to the procedure as well as a relatively long fast. The endoscope is inserted rectally and again tissue samples are harvested. The advantage of this procedure over surgery is that it is not as invasive as surgery. Patients typically go home the same day. Disadvantages are expense (often referral to a specialist is necessary) and the fact that the rest of the abdomen cannot be viewed. Growths that are seen via endoscopy cannot be removed at that time and a second procedure typically must be planned whereas, if surgical exploration is used to obtain the biopsy, any growths can also be excised at that time.

Surgical exploration may also be used to obtain samples. The recovery afterwards is typically a couple of days, though some patients bounce back immediately, and are eating the next day. With surgery, other organs can also be sampled and abnormal sections of tissue can be removed. As well, gut biopsies are full thickness rather than just the inner layers sampled with endoscopy, and can provide more information. Surgery tends to be more expensive than endoscopy but this depends on the recovery period. Often these two procedures work out to be of similar expense.

Tissue samples obtained are processed by a special laboratory and analyzed. The infiltration of inflammatory cells (if present) is graded as mild, moderate, or severe and the type of cells involved in the inflammation are identified. Inflammatory cells that can cause IBD include the white blood cells lymphocytes, plasma cells and eosinophils.

### ***How Do You Treat IBD?***

As first line of treatment for chronic vomiting or diarrhea, whether or not a definitive diagnosis of IBD has been made by taking biopsies, the pet is often placed on a hypoallergenic, low residue diet for eight to twelve weeks. High fiber diets rather than low residue diets may be used when there is colitis.

Dietary manipulation may be helpful in the management of inflammatory bowel disease depending on the patient's interest in newer foods, and positive response to hypoallergenic diets. Hypoallergenic diets are of two types:

- Diets with a unique single protein and carbohydrate source, such as Venison and Potato, Duck and Green Pea, Rabbit and Rice, etc. Ideally, we need to choose proteins and carbohydrates that the patient has not eaten before.
- Diets with nutrients broken down into very small pieces that theoretically are too small to cause allergic reaction. Examples are Hill's Prescription Diet Z/D and Purina Clinical Veterinary Nutrition HN.

Hypoallergenic diets must be fed exclusively (NO OTHER FOOD) for at least 8-12 weeks, to know if they will be effective. Ample time must be given for inflammation due to food hypersensitivity to resolve – this can take weeks. If you can not commit to a strict hypoallergenic diet for 8-12 weeks, it probably does not make sense to invest in feeding these diets. Some pets with IBD who respond well to hypoallergenic diet can be weaned off of all medications, as long as they stay on their special diet. Some specialists have recommended the use of what is called a sacrificial protein. This kind of treatment involves using one novel protein during initial treatment stages while the intestine is still inflamed and switching to another one when signs have been controlled. The theory is that an allergy to the initial protein is more likely to develop while the intestine is still diseased.

Dietary fat restriction can also be important in some cases, and is probably more important for dogs with IBD than cats. Fat prolongs the time food spends in the stomach, which tends to promote nausea. There can also be undesirable interactions with fats and the bacteria of the intestine.

Insoluble fibers have been helpful in inflammatory bowel disease. They increase fecal bulk which stimulates more normal motility from the intestine. Slower stool passage results which enhances water absorption. Adding oat bran to the hypoallergenic diet may be helpful, especially if there are signs of colitis (blood and mucus in the stool, straining to defecate).

If the dietary trial does not result in improvement, or if signs are severe enough to indicate starting medications right away, medication may be used to control the problem. Since not all dogs respond to the same medication, a series of drugs may be necessary.

The cornerstone of drug therapy for inflammatory bowel disease is suppression of the inflammation. In milder cases of large intestinal inflammatory bowel disease, the immunomodulating properties of metronidazole (Flagyl) might be adequate for control but usually prednisone is needed. Prednisone will work on inflammatory bowel disease in any area of the intestinal tract. In more severe cases, stronger immune suppression is needed (as with cyclosporine or azathioprine). These stronger drugs are rarely used without confirming diagnosis with biopsy. Higher doses of the medications are usually used in treatment at first and tapered down after control of symptoms has been gained. Some animals are able to eventually discontinue treatment or only require treatment during flare-ups. Others require some medication at all times. Long-term use of prednisone should be accompanied by appropriate periodic monitoring tests due to the immune suppressive nature of this treatment.

Ant-nausea and anti-diarrheal drugs such as metoclopramide and Imodium can be used to manage symptoms. But we must keep in mind that these medications only treat symptoms, and do not do anything to address underlying disease.

As mentioned before, some pets with IBD can be weaned off of medications, and some need to be medicated for life. How often depends on the severity of the inflammation, and whether the cause can be minimized or eliminated.

### ***Is it at all Reasonable to just Try Treatment and Skip the Expensive Diagnostics?***

Possibly. There are two situations when treating for IBD with medications (suppressing the immune system) could potentially cause problems.

1. If there is infections with parasites, bacteria, fungus, etc., which could be made worse if the immune system is suppressed.
2. If the pet actually has a tumor called lymphoma (also called lymphosarcoma). This is a type of cancer that produces chronic diarrhea or vomiting just as inflammatory bowel disease can. Lymphoma is temporarily responsive to prednisone but the response is short-lived. Exposure to prednisone will make the lymphoma much more difficult to diagnose should biopsies be obtained later.

### ***What is the prognosis?***

Once the appropriate drugs or diet is determined, many pets remain on these for life, although dosages of the drugs may eventually be decreased. Occasionally, a dog or cat will be able to stop drug therapy in the future, either permanently or temporarily, when inflammation is controlled. Most pets do well for many years while others require alterations in therapy every few months. Unfortunately, a few pets will fail to respond to treatment. Some severe forms of canine inflammatory bowel disease will eventually progress to intestinal cancer. This finding is well documented in human beings and, in recent years, it has also been shown to occur in dogs.

We fully realize that giving medications to cats for long periods of time can be a challenge. In some cases, it is possible to get medicated treats or flavored liquids prepared by a compounding pharmacy,

eliminating the need to force medications on your cat. Many cats look forward to daily medications when provided in this way. Medicated cat treats or liquids are affordable, and can be prepared by local pharmacies, or mail order pharmacies.

If there is no response to diet or corticosteroids, the prognosis is more guarded. IN these cases, biopsies are crucial to proper diagnosis necessary for management.

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