

# Inflammatory Bowel Disease (IBD) in Dogs

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What is inflammatory bowel disease?

Inflammatory bowel disease is a condition in which the intestine is chronically infiltrated by inflammatory cells. It is characterized by certain cells invading the wall of the intestine or stomach. The cells are those associated with inflammation, which is the body's reaction to an insult or injury.

Inflammatory cells include lymphocytes and plasmacytes which are directly responsible for the body's immune response. Eosinophils are another cell commonly present in inflammation. Other inflammatory cells called neutrophils are responsible for the actual destruction of foreign invaders such as bacteria or clean up of damaged tissue. Finally, in chronic inflammation, normal tissue may be replaced by fibrous (scar-like) tissue.

The types of cells infiltrating the intestine determine the type of inflammatory bowel disease that is present.

Type of Infiltrate	Type of IBD	Characteristics
Lymphocytes and Plasmacytes	Lymphocytic-plasmacytic IBD	Most common form of IBD
Eosinophils	Eosinophilic IBD	Second most common form Tends to be more severe than lymphocytic-plasmacytic
Fibrous Tissue and Eosinophils	Regional Granulomatous	Rare Similar to Crohn's disease in humans
Neutrophils	Suppurative or Neutrophilic	Need to exclude bacterial infection as a cause of the infiltrate

What causes inflammatory bowel disease in dogs?

The cause of inflammatory bowel disease is unknown. Genetics, nutrition, infectious agents, and abnormalities of the immune system may all play a role. Inflammatory bowel disease may not be an actual disease onto itself, but a characteristic response of the body to certain conditions caused by a variety of factors.

What are the symptoms of inflammatory bowel disease?

The most common signs of inflammatory bowel disease in dogs are diarrhea, vomiting, and weight loss. The signs may vary depending upon the portion of the gastrointestinal involved, i.e., vomiting is more common when the stomach or upper portion of the small intestine are involved and diarrhea is more common when the colon is involved. There is an increase in the frequency of defecation, but less stool produced each time. There is often increased mucous or some blood in the stool. Sometimes stools become loose. Many times the diarrhea and vomiting may be intermittent (comes and goes). If severe, some animals become depressed, will not eat, and have a fever.

How is inflammatory bowel disease diagnosed?

To be called inflammatory bowel disease, the condition must be chronic, infiltrates of inflammatory cells must be present, and other causes of these infiltrates (e.g., cancer, food intolerance, bacterial infections, parasites) have been excluded.

History: The history of long-standing diarrhea and/or vomiting, weight loss, increased mucous in the stool and possibly blood

in the stool would lead a veterinarian to consider IBD as a possible cause.

Physical Exam: The dog may appear thin on physical exam. In some animals, veterinarians may palpate (feel) thickened intestines.

Laboratory Findings: In most cases, the [chemistry panel](#) of a dog with inflammatory bowel disease is normal. If the inflammation of the intestines is severe, the neighboring liver and pancreas may also become inflamed. This results in an elevation of liver enzymes and/or pancreatic lipase immunoreactivity. Lipase is produced by the pancreas, and if the pancreas is inflamed the values are increased. There may be a decreased amount of protein in the blood, and if the vomiting is significant the electrolytes (especially potassium) may be at abnormal levels.

In most cases, the [complete blood count \(CBC\)](#) is normal. Some animals will demonstrate an increase in the number of eosinophils in the blood.

Radiography (X-rays) and Ultrasound: There is no consistent radiological finding in dogs with inflammatory bowel disease. The intestines may appear thickened and there may be more gas than normal in the intestines, but these signs can occur in many conditions.

Biopsy: The only definitive way to diagnose inflammatory bowel disease is through a biopsy. The biopsy will demonstrate increased numbers of inflammatory cells in the intestinal wall. The types of cells which are present will denote what type of inflammatory bowel disease is present. Biopsies can be obtained through use of an endoscope or exploratory surgery. The intestines may appear normal to the naked eye, but microscopically the changes can be seen. In other cases, the lesions of the gastrointestinal tract are quite apparent.

Rule Out Other Causes: Other causes of diarrhea and or cellular infiltrates must be ruled out. Therefore, in a complete work-up, a fecal exam would be performed to rule out parasites such as [Giardia](#), bacterial cultures would be obtained to rule out e.g., *Salmonella*, and further blood tests to rule out other concurrent diseases such as liver disease would be conducted.

How is inflammatory bowel disease treated?

The treatment of inflammatory bowel disease usually involves a combination of change in diet and the use of various medications.

Dietary Management: A [food trial](#) using hypoallergenic diets is usually one of the first steps in the initial treatment, and is used to verify the diagnosis. The key is to use a protein source and carbohydrate source the animal has never eaten before, such as duck and potato, or to use a diet consisting of hydrolyzed proteins. The dog must eat nothing else, including treats. If a diet change will help, it will generally start to do so in two weeks.

If a hypoallergenic diet does not improve the condition, other diets may be tried. Diets low in fat are generally better tolerated in dogs with IBD. Some dogs do better on a low fiber diet, while others, especially those with disease of the colon, may tend to do better on diets higher in fiber. Homemade diets are sometimes used, however, they must be developed by a veterinary nutritionist to assure they are complete and balanced.

As you can see, multiple diets may have to be tried before one sees improvement in the dog's condition. This takes a lot of patience on the part of the owner.

One of the most common mistakes in treating inflammatory bowel disease is to stop medication too early.

Immunosuppressant Medications: Various medications are used to reduce the number of inflammatory cells moving into the gastrointestinal tract.

Corticosteroids: Prednisolone, budesonide, and dexamethasone can suppress the immune system and help reduce the symptoms.

Azathioprine and Cyclophosphamide: These drugs are immunosuppressive agents and are generally used only if other treatments have failed. These drugs can suppress the bone marrow (less blood cells are then produced), so careful monitoring through

regular complete blood counts is recommended.

Sulfasalazine, 5-ASA, and Mesalamine Compounds: Sulfasalazine, 5-ASA, mesalamine, and related compounds are used in dogs with primarily large intestine involvement. These have both an immunosuppressant component and antibacterial properties as well. They can, however, cause a condition called keratoconjunctivitis sicca (KCS or dry eye) so they must be used with caution. KCS results from an abnormally low tear production. Sulfasalazine, by an unknown mechanism, can irreversibly reduce the amount of tears produced. Sulfasalazine and similar compounds contain salicylates (so does aspirin) which can be very toxic to cats.

Antibiotics: Antibiotics are given to attempt to reduce the number and type of bacteria that could be causing the disease.

Metronidazole or Tylosin: Metronidazole can be used alone or in combination with corticosteroids. It is an antibiotic and also inhibits the immune system. If metronidazole is not tolerated by the cat, tylosin may be tried.

Other therapies:

Cobalamin: Cobalamin is a B vitamin that is often deficient in dogs with IBD, so it is often supplemented.

Deworming: A wormer such as fenbendazole, which will kill multiple types of worms, is often given to treat any underlying parasitic infections in the intestines that may not be diagnosed through a routine fecal examination.

Fatty Acids: Some studies have suggested that diets enriched in omega-3 [fatty acids](#) may help decrease the inflammation in the gastrointestinal tract. Eicosapentanoic acid and docosahexaenoic acid (fatty acids from fish oil) have been beneficial in human patients. More research needs to be done to determine their benefit in cats with inflammatory bowel disease.

Prebiotics and probiotics: Prebiotics help to modify the environment of the intestinal tract to promote the growth of good bacteria. Probiotics are a source of these good bacteria. Prebiotics and/or probiotics may be recommended by your veterinarian to increase the numbers of beneficial bacteria in the intestine and decrease those that could cause disease.

Drugs Affecting Motility: Antidiarrheal drugs such as loperamide (Imodium) or diphenoxylate (Lomotil) may have some beneficial effects. Antispasmodic drugs have also been used in some cases.

What is the prognosis for dogs with inflammatory bowel disease?

Inflammatory bowel disease can be controlled, but not cured. Control is dependent upon the proper selection of diet and medications, the correct long-term maintenance dosages, careful monitoring by the veterinarian and owner, and the absence of other concurrent diseases. Even so, persistence of mild signs, or recurrence of more severe signs may occur.