

# Inflammatory bowel disease: What is it and what causes it?

I'd like to spend this week and next talking to you about colitis, a cluster of disorders that affect many patients I see in my practice. There are a number theories on why and how these disorders develop, and also many suggestions as to how best to treat them. This week, I'll be discussing what can cause or contribute to colitis; next week, I'll share with you some of the more effective treatment options.

The term "colitis" comprises several types of inflammatory intestinal disorders, as distinguished from Irritable Bowel Syndrome (IBS), a "functional" disorder of motility in which inflammation is not apparent. The main types of colitis are ulcerative colitis (UC) (and its subtype ulcerative proctitis) and Crohn's Disease (CD), which have different characteristic appearances and radiological and blood testing presentations. They are collectively referred to as Inflammatory Bowel Disease (IBD).



While CD and UC have not generally been thought of as infectious diseases, one form of colitis, pseudomembranous colitis, is known to be caused by a bacterium, *Clostridium difficile*.

More researchers are coming to believe that imbalances in intestinal flora may be at the root of IBD. Immune cells in the walls of the intestinal tract are engaged in continual "cross talk" with the trillions of bacteria that inhabit our gut. When beneficial bacteria are suppressed and harmful bacteria proliferate, the intestinal defense system may go into "overdrive," resulting in an overexuberant immune response, triggering autoimmunity and consequent inflammation.

This disordered state of intestinal microbes is sometimes referred to as "dysbiosis." Evidence that dysbiosis might be a contributing factor in IBD comes from several sources. Frequent administration of antibiotics is known to be a risk factor for IBD, and UC and CD patients sometimes suffer exacerbations of their disease after antibiotics are prescribed for other conditions.

Use of powerful acid-blocking medications also increases the risk for IBD, probably because it alters the intestinal flora. Breast-feeding, perhaps because of its "priming" effects on the intestinal immune system, appears to be protective against IBD.

Commonly used medications also can play a role in colitis. Non-steroidal anti-inflammatory drugs (NSAIDs—like Motrin, Aleve, ibuprofen and Celebrex) may set the stage for IBD by damaging the intestinal surface, and previous use of the acne drug Accutane has been established as an IBD risk factor.

Additionally, stress is known to provoke IBD. Anxiety and depression are associated with increased CD activity, and signals from the brain have been shown to influence inflammation by altering intestinal barrier function and even leading to changes in the composition of intestinal flora.

Whether because of over-dependency on pharmacological drugs, refined foods or other factors, IBD incidence is on the rise in developed countries, affecting as many as 1.4 million Americans, or nearly ½ percent of the population. Some point to the "Hygiene Hypotheses," which postulates that our conquest over unsanitary conditions has increased the likelihood that our idle immune systems will inappropriately

target our own tissues in a misguided attack. Supporting this notion is research showing that introduction of harmless parasites into the GI tracts of IBD sufferers can induce remission by “decoying” the immune system to fight an invader instead of attacking the intestinal tissue .

The role of diet on both the development and the treatment of IBD cannot be underestimated. Major changes in the Western Diet have accompanied unprecedented rises in the incidence of IBD over the past 75 years. Introduction of refined and sugar- and chemical-laden foods have probably fueled the epidemic, while globalization of the food supply has rapidly introduced dairy products, cereal grains, potatoes, tomatoes, legumes and other novel dietary items into the diets of populations not accustomed to these foods. Ubiquitous trans-fats and refined omega-6 vegetable oils are thought to promote inflammation, at the same time that most Americans have inadequate intake of anti-inflammatory omega-3s. And some suspect that genetically modified organisms (GMOs) have the potential to damage the intestines because they’re programmed to secrete harsh insecticidal and herbicidal compounds.

In addition, certain food additives have been implicated in the causation and perpetuation of IBD. “Micro-particles” like titanium dioxide are frequently added to processed food and have razor-like effects on the intestinal lining. Carrageenan, a “natural” seaweed derivative often used to improve food texture and “mouth feel,” has been shown to inflame the intestinal lining in susceptible persons.

As you can see, there are many factors that can contribute to these disorders, but what does that mean for treatment? How can we help those who suffer from IBD, and what can they do to help themselves manage their symptoms? Next week, I will tackle these questions, and explain more about how diet, supplements, and the latest in medical research are combining to help treat and heal those suffering from IBD.