

Crohn's Disease



What is Crohn's Disease?

Crohn's disease is an intestinal disorder that falls under the category of Idiopathic Inflammatory Bowel Disease (IBD). Idiopathic means the condition arises spontaneously or the cause is not known. This condition, first identified in 1932 and named after Dr. Burrill B. Crohn, is associated with intestinal inflammation that commonly starts at the end of the small bowel called the ileum, and often involves the colon as well. Other portions of the GI tract such as the proximal small intestine, stomach, and perianal region (area around the anus), also can be affected. Abdominal pain and cramping, constipation, and/or chronic diarrhea are common symptoms. The disease typically follows a chronic, relapsing and remitting course over multiple years. Since Crohn's symptoms often "come and go," patients may be in remission with few or no symptoms, and suddenly have a "flare-up."

Who Gets Crohn's and Why?

Crohn's affects men and women equally over a wide age range, but most often is diagnosed initially between the ages of 15 and 35. Genetic factors such as family history, and the presence of mutations in certain genes such as NOD2 are risk factors for the development of Crohn's, but the exact cause of Crohn's is still unknown. Certain environmental triggers such as infection, psychological stress, certain medications or foods, and smoking can trigger flares of symptoms in Crohn's. Research has confirmed that the inflammation in Crohn's disease reflects an abnormal response of the GI mucosal immune system, possibly to normal intestinal flora, or natural bacteria. Normally our immune system responds only to harmful foreign "intruders" such as bacteria and viruses but tolerates normal nonpathogenic, or non-disease causing, organisms.

However, in Crohn's this response becomes dysregulated, resulting in appropriate signals to increase inflammation in the bowel wall.

What are the Effects and Complications of Crohn's Disease?

The bowel inflammation can cause food to pass through the GI tract slowly (constipation) or quickly (diarrhea). The other symptoms of Crohn's can include fatigue, weight loss, lack of appetite and anemia. When inflammation extends into deeper layers of the bowel wall, the patient can develop fibrous strictures, which are abnormally constricted passageways, and fistulous tracts, which are abnormal connections between bowel segments or other organs such as the skin or bladder. These strictures and fistulas often need to be repaired surgically in order to prevent bowel obstruction or perforation. Patients with Crohn's are at increased risk for the development

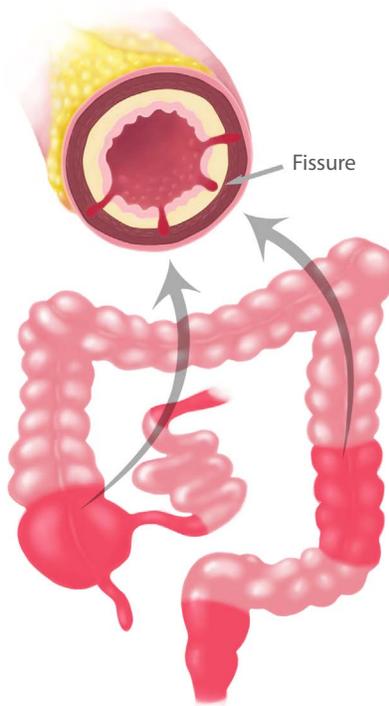
of colorectal carcinoma in the affected segments of their colon. Finally, Crohn's has a number of symptoms in other parts of the body beyond the intestinal tract.

How is Crohn's Disease Diagnosed at the Lab?

A patient with symptoms such as diarrhea will undergo a colonoscopy. The physician performing the procedure will inspect the mucosa (mucous tissue) in the colon and ileal (last division of the small intestine) for abnormalities such as inflammation, ulcers, or polyps, and will remove (biopsy) tissue from both normal and abnormal mucosa and send it to a pathology lab. There, the tissue is processed into thin sections which are prepared on glass slides and examined under the microscope by a pathologist, a doctor specialized in the diagnosis of disease.



COLON CROSS-SECTION



Intestinal inflammation commonly starts at the end of the small bowel called the ileum, and often involves the colon as well.

Crohn's Disease



The pathologist looks for evidence of inflammation in the colonic or ileal mucosa (colitis or ileitis, respectively), which can suggest the cause of the symptoms. Crohn's can cause a wide variety of changes, including active inflammation (neutrophils) and ulcers. Some patients may have granulomas, which are collections of inflammatory cells called macrophages. Although not specific for Crohn's and not present in all patients, granulomas can help support a diagnosis of the disease. The histologic findings are interpreted in the context of the clinical and endoscopic information provided by the doctor, physician assistant, or nurse.

At Miraca Life Sciences, difficult and unusual cases are reviewed together by subspecialist pathologists at a large multi-headed microscope to ensure the most accurate and definitive diagnoses. The pathologist creates a pathology report with all the important findings, including critical information to help guide treatment and assess prognosis, which is sent back to the healthcare provider.

How is Crohn's Disease treated?

Active symptomatic Crohn's disease is treated with one or more anti-inflammatory medications, such as corticosteroids, immunomodulators (drugs acting on the immune system) such as 6-mercaptopurine, and biologic agents that target and block the inflammatory cytokine tumor necrosis factor (TNF) alpha. Once clinical remission has been obtained, patients often continue to receive these medications to prevent recurrences.

For patients who take biologics, therapeutic drug monitoring often is used to ensure the optimal level of drug in the body. Miraca provides InformTx therapeutic drug monitoring for the biologic drugs used to treat Crohn's. Surgical resection may be necessary in the event of strictures or fistulas, or if medications fail to control symptoms. While there is no special diet, certain foods can be aggravating: milk products, broccoli, onions, chickpeas and gas-producing foods, spicy foods, alcohol and bulky grains such as barley.

Learn More!

www.ccfacommunity.org

Crohn's & Colitis Foundation of America is a leading resource.

www.livingwithcrohnsdisease.com

Find recipes, diet information, and how to manage the daily challenges of Crohn's.

.....
 This material is intended for patient education and information only. It does not constitute advice, nor should it be taken to suggest or replace professional medical care from your physician. Your treatment options may vary, depending upon medical history and current condition. Only your physician and you can determine your best option.

Provided to you as a service by Miraca Life Sciences. © 2016 Miraca Life Sciences, Inc. All rights reserved. GI0029 8.16

Headquartered in Irving, Texas, **Miraca Life Sciences** provides the highest-quality anatomic pathology services, primarily in the fields of breast pathology, dermatopathology, hematopathology, gastrointestinal pathology, and urologic pathology. The company's team of nearly 90 pathologists—all fellowship-trained subspecialists—utilize state-of-the-art laboratories throughout the United States to serve more than 5,500 patients every day. Miraca Life Sciences continuously improves diagnostic precision through a unique consensus approach, rigorous quality assurance, comprehensive expertise, ongoing education and research, and close relationships with our clinician clients. Find more patient information and resources on our website at www.MiracaLifeSciences.com.