**CROHN’S DISEASE**

Named after Dr. Burrill B. Crohn, who first described the disease in 1932 along with colleagues Dr. Leon Ginzburg and Dr. Gordon D. Oppenheimer, Crohn’s disease belongs to a group of conditions known as inflammatory bowel diseases (IBD). Crohn’s disease is a chronic inflammatory condition of the gastrointestinal tract.

When reading about inflammatory bowel diseases, it is important to know that Crohn’s disease is not the same thing as [ulcerative colitis](http://www.crohnscolitisfoundation.org/what-are-crohns-and-colitis/what-is-ulcerative-colitis/), another type of IBD. The symptoms of these two illnesses are quite similar, but the areas affected in the gastrointestinal tract (GI tract) are different. While diarrhea and rectal bleeding are more common in ulcerative colitis, Crohn’s disease more often causes severe abdominal pain, nausea, weight loss, and vomiting.

Crohn’s most commonly affects the end of the small bowel (the ileum) and the beginning of the colon, but it may affect any part of the gastrointestinal (GI) tract, from the mouth to the anus. Ulcerative colitis is limited to the colon, also called the large intestine. In the early stages, Crohn's disease causes small, scattered, shallow, crater-like ulcerations (erosions) on the inner surface of the bowel. These erosions are called aphthous ulcers. With time, the erosions become deeper and larger, ultimately becoming true ulcers (which are deeper than erosions), and causing scarring and stiffness of the bowel. As the disease progresses, the bowel becomes increasingly narrowed, and ultimately can become obstructed. Deep ulcers can cause puncture holes or perforations in the wall of the bowel, and bacteria from within the bowel can spread to infect adjacent organs and the surrounding abdominal cavity.

[Download an illustration of the GI Tract (.pdf)](http://www.crohnscolitisfoundation.org/assets/pdfs/gi-trac.pdf)

Crohn’s disease can also affect the entire thickness of the bowel wall, while ulcerative colitis only involves the innermost lining of the colon. Finally, in Crohn’s disease, the inflammation of the intestine can “skip”-- leaving normal areas in between patches of diseased intestine. In ulcerative colitis this does not occur. [**Watch this webcast**](http://programs.rmei.com/knowyouribd2015/Know_Crohns/index.html) to learn more about Crohn's disease.

**Cause:**

The cause of Crohn's disease is unknown. Some scientists suspect that infection by certain bacteria, such as [strains](https://www.medicinenet.com/sprained_ankle/article.htm) of mycobacterium, may be the cause of Crohn's disease. Activation of the immune system causes inflammation within the tissues where the activation occurs. In individuals with IBD the immune system is abnormally and chronically activated in the absence of any known invader. Recently a gene called NOD2 has been identified as being associated with Crohn's disease. This gene is important in determining how the body responds to some bacterial products There also have been studies which show that in the intestines of individuals with Crohn's disease, there are higher levels of a certain type of bacterium, [*E. coli*](https://www.medicinenet.com/e_coli__0157h7/article.htm), which might play a role in the disease. One postulated mechanism by which this could occur is though a genetically determineddefect in the elimination of the [*E. coli*](https://www.medicinenet.com/e_coli_0157h7_escherichia_coli_0157h7/symptoms.htm), by intestinal mucosal macrophages. The exact roles that these various factors play in the development of this disease remain unclea.

**Recognizing the Signs and Symptoms**

Crohn’s disease can affect any part of the GI tract. While symptoms vary from patient to patient and some may be more common than others, the tell-tale symptoms of Crohn’s disease include:

Symptoms related to inflammation of the GI tract:

* Persistent Diarrhea
* Rectal bleeding
* Urgent need to move bowels
* Abdominal cramps and pain
* Sensation of incomplete evacuation
* Constipation (can lead to bowel obstruction)
* General symptoms that may also be associated with IBD:
1. Associated sign and symptoms of Crohn's disease include reddish, tender skin nodules, and inflammation of the joints, spine, eyes, and [liver](https://www.medicinenet.com/liver_anatomy_and_function/article.htm). Swelling of the tissue of the anal sphincter, the muscle at the end of the colon that controls defecation.
2. Development of ulcers and fissures (long ulcers) within the anal sphincter. These ulcers and fissures can cause bleeding and pain with defecation.
3. Development of anal fistulae (abnormal tunnels) between the anus or rectum and the skin surrounding the anus). Mucous and pus may drain from the openings of the fistulae on the skin.
4. Development of peri-rectal abscesses (collections of pus in the anal and rectal area). Peri-rectal abscesses can cause fever, pain and tenderness around the anus.
* Fever
* Loss of appetite
* Weight Loss
* Fatigue
* Night sweats
* Loss of normal menstrual cycle

Even if you think you are showing signs of Crohn’s disease symptoms, only proper testing performed by your doctor can render a diagnosis.

People suffering from Crohn’s often experience loss of appetite and may lose weight as a result. A feeling of low energy and fatigue is also common. Among younger children, Crohn's may delay growth and development.

Crohn's is a chronic disease, so this means patients will likely experience periods when the disease flares up and causes symptoms, followed by periods of remission when patients may not notices symptoms at all.

In more severe cases, Crohn’s can lead to tears (fissures) in the lining of the anus, which may cause pain and bleeding, especially during bowel movements. Inflammation may also cause a fistula to develop. A fistula is a tunnel that leads from one loop of intestine to another, or that connects the intestine to the bladder, vagina, or skin. This is a serious condition that requires immediate medical attention.

The symptoms you or your loved one experience may depend on which part of the GI tract is affected. Read more about the [Types of Crohn's Disease and Associated Symptoms](http://www.crohnscolitisfoundation.org/what-are-crohns-and-colitis/what-is-crohns-disease/types-of-crohns-disease.html).

**What are the Causes of Crohn’s Disease? Who is Affected?**

Crohn’s disease may affect as many as 780,000 Americans. Men and Women are equally likely to be affected, and while the disease can occur at any age, Crohn's is more prevalent among adolescents and young adults between the ages of 15 and 35.

The causes of Crohn’s disease are not well understood. Diet and stress may aggravate Crohn’s Disease, but they do not cause the disease on their own. Recent research suggests hereditary, genetics, and/or environmental factors contribute to the development of Crohn’s Disease.

The GI tract normally contains harmless bacteria, many of which aid in digestion. The immune system usually attacks and kills foreign invaders, such as bacteria, viruses, fungi, and other microorganisms. Under normal circumstances, the harmless bacteria in the intestines are protected from such an attack. In people with IBD, these bacteria are mistaken for harmful invaders and the immune system mounts a response. Cells travel out of the blood to the intestines and produce inflammation (a normal immune system response). However, the inflammation does not subside, leading to chronic inflammation, ulceration, thickening of the intestinal wall, and eventually causing patient symptoms.

Crohn’s tends to run in families, so if you or a close relative have the disease, your family members have a significantly increased chance of developing Crohn’s. Studies have shown that 5% to 20% of affected individuals have a first – degree relative (parents, child, or sibling) with one of the diseases. The risk is greater with Crohn’s disease than ulcerative colitis. The risk is also substantially higher when both parents have IBD. The disease is most common among people of eastern European backgrounds, including Jews of European descent. In recent years, an increasing number of cases have been reported among African American populations.

The environment in which you live also appears to play a role. Crohn’s is more common in developed countries rather than undeveloped countries, in urban rather than rural areas, and in northern rather than southern climates.

NEW!! Test your knowledge of Crohn’s disease by taking this self-assessment for an opportunity to win a gift card! You can find the assessment [here](http://www.crohnscolitisfoundation.org/what-are-crohns-and-colitis/what-is-crohns-disease/Test-Your-Crohn-s-Disease-Knowledge.html)

DIAGNOSIS

There is no specific diagnostic test for Crohn’s disease. The diagnosis of Crohn's disease is suspected in patients with fever, abdominal pain and tenderness, diarrhea with or without bleeding, and anal diseases, such as ulcers or fissures. Laboratory blood tests may show elevated white blood cell counts and sedimentation rates, both of which suggest infection or inflammation. Other blood tests may show low red blood cell counts ([anemia](https://www.medicinenet.com/anemia/article.htm)), low blood proteins, and low body [minerals](https://www.medicinenet.com/vitamins_minerals_and_nutritional_supplements/article.htm), reflecting loss of these minerals due to chronic diarrhea.

Barium X-ray studies can be used to define the distribution, nature, and severity of the disease. Barium is a chalky material that is visible by X-ray and appears white on X-ray films. When barium is ingested orally ([upper GI series](https://www.medicinenet.com/upper_gi_series/article.htm)) it fills the intestine, and pictures ([X-rays](https://www.medicinenet.com/x-rays/article.htm)) can be taken of the stomach and the small intestines. When barium is administered through the rectum (barium enema), pictures of the colon and the terminal ileum can be obtained. Barium X-rays can show ulcerations, narrowing, and, sometimes, fistulae of the bowel.

Direct visualization of the rectum and the [large intestine](https://www.medicinenet.com/image-collection/intestines_picture/picture.htm) can be accomplished with flexible viewing tubes (colonoscopes). Colonoscopy is more accurate than barium X-rays in detecting small ulcers or small areas of inflammation of the colon and terminal ileum. Colonoscopy also allows for small tissue samples (biopsies) to be taken and sent for examination under the microscope to confirm the diagnosis of Crohn's disease. Colonoscopy also is more accurate than barium X-rays in assessing the degree (activity) of inflammation.

Computerized axial tomography (CAT or CT) scanning is a computerized X-ray technique that allows imaging of the entire abdomen and pelvis. It can be especially helpful in detecting abscesses. CT and [MRI](https://www.medicinenet.com/mri_scan/article.htm) enterography are imaging techniques which use oral contrast agents consisting of watery solutions with or without low concentrations of barium to provide more adequate luminal distension, have been reported to be superior in the evaluation of small bowel pathology in patients with Crohn's disease.

Video [capsule endoscopy](https://www.medicinenet.com/capsule_endoscopy/article.htm) (VCE) has also been added to the list of tests for diagnosing Crohn's disease. For video capsule [endoscopy](https://www.medicinenet.com/endoscopy/article.htm), a capsule containing a miniature video camera is swallowed. As the capsule travels through the small intestine, it sends video images of the lining of the small intestine to a receiver carried on a belt at the waist. The images are downloaded and then reviewed on a computer. The value of video capsule endoscopy is that it can identify the early, mild abnormalities of Crohn's disease. Video capsule endoscopy may be particularly useful when there is a strong suspicion of Crohn's disease but the barium X-rays are normal. (Barium X-rays are not as good at identifying early, mild Crohn's disease.) In a prospective blinded evaluation, video capsule endoscopy was demonstrated to be superior in its ability to detect small bowel pathology missed on small bowel radiographic studies and CT exams.

**MANAGEMNT**

**SURPPORTIVE**

* Since [fiber](https://www.medicinenet.com/fiber/article.htm) is poorly digestible, it can worsen the symptoms of intestinal obstruction. A low fiber diet for Crohn's diease may be recommended, especially in those patients with small intestinal disease.
* A [liquid diet](https://www.medicinenet.com/liquid_diet/article.htm) may be of benefit when symptoms are more severe.
* Intravenous [nutrition](https://www.medicinenet.com/nutrition/article.htm) or TPN (total parenteral [nutrition](https://www.medicinenet.com/diet_and_nutrition_quiz/quiz.htm)) may be utilized when it is felt that the intestine needs to "rest."
* Supplementation of calcium, folate and vitamin B12 is helpful when malabsorption of these nutrients is apparent.
* The use of anti-diarrheal agents ([diphenoxylate and atropine](https://www.medicinenet.com/diphenoxylate_and_atropine/article.htm) [[Lomotil](https://www.medicinenet.com/diphenoxylate_and_atropine/article.htm)], [loperamide](https://www.medicinenet.com/loperamide/article.htm) [[Imodium](https://www.medicinenet.com/loperamide/article.htm)]) and antispasmotics also can help relieve symptoms of cramps and diarrhea.

SPECIFIC
5 aminosalicylic acid (5-ASA) compounds, for example, [sulfasalazine](https://www.medicinenet.com/sulfasalazine/article.htm) (Azulfidine) and [mesalamine](https://www.medicinenet.com/mesalamine/article.htm) - Aspirin ([Pentasa](https://www.medicinenet.com/mesalamine/article.htm), [Asacol](https://www.medicinenet.com/mesalamine/article.htm), [Dipentum](https://www.medicinenet.com/olsalazine/article.htm), [Colazal](https://www.medicinenet.com/balsalazide_disodium/article.htm), [Rowasa](https://www.medicinenet.com/mesalamine/article.htm) enema, [Canasa](https://www.medicinenet.com/mesalamine/article.htm) suppository).

 Corticosteroids that act systemically (without the need for direct contact with the inflamed tissue) to decrease inflammation throughout the body. Systemic corticosteroids (eg inj hydrocortisone or oral prednisone) have important and predictable side effects if used long-term.

 [Topical corticosteroids](https://www.medicinenet.com/corticosteroids-topical/article.htm), for example, [budesonide](https://www.medicinenet.com/budesonide/article.htm) ([Entocort EC](https://www.medicinenet.com/budesonide/article.htm)). This class of corticosteroids has fewer side effects than systemic corticosteroids, which are absorbed into the body.

 Antibiotics that decrease inflammation, for example, [metronidazole](https://www.medicinenet.com/metronidazole/article.htm) ([Flagyl](https://www.medicinenet.com/metronidazole/article.htm)) and [ciprofloxacin](https://www.medicinenet.com/ciprofloxacin/article.htm)([Cipro](https://www.medicinenet.com/ciprofloxacin/article.htm)).

- Immuno-modulator drugs decrease tissue inflammation by reducing the population of immune cells and/or by interfering with their production of proteins. Decreasing the activity of the immune system with immuno-modulators increases the risk of infections; however, the benefits of controlling moderate to severe Crohn's disease usually outweigh the risks of infection due to weakened immunity. Examples of immuno-modulators are:

* 6-[mercaptopurine](https://www.medicinenet.com/mercaptopurine-oral/article.htm) (6-MP),
* [azathioprine](https://www.medicinenet.com/azathioprine/article.htm) (Imuran),

### [methotrexate](https://www.medicinenet.com/methotrexate/article.htm) ([Rheumatrex](https://www.medicinenet.com/methotrexate/article.htm), [Trexall](https://www.medicinenet.com/methotrexate/article.htm), MTX, Mexate),

### Surgery in Crohn's disease

There is no surgical cure for Crohn's disease. Even when all of the diseased parts of the intestines are removed, inflammation frequently recurs in previously healthy intestines months to years after the surgery. Surgery in Crohn's disease is used primarily for:

1. Removal of a diseased segment of the small intestine that is causing obstruction.
2. [Drainage of pus](https://www.medicinenet.com/drainage_of_pus/symptoms.htm) from abdominal and peri-rectal abscesses.
3. Treatment of severe anal fistulae that do not respond to drugs.
4. Resection of internal fistulae (such as a fistula between the colon and bladder) that are causing infections.

COMPLICATIONS

When Crohn's disease narrows the small intestine to the point of obstruction, the flow of the contents through the intestine ceases. Sometimes, the obstruction can be caused suddenly by poorly-digestible fruit or vegetable matter that plug the already-narrowed segment of the intestine. When the intestine is obstructed, food, fluid and [gas](https://www.medicinenet.com/intestinal_gas_belching_bloating_flatulence/article.htm) from the stomach and the small intestine cannot pass into the colon. The symptoms of small intestinal obstruction then appear, including severe abdominal cramps, [nausea](https://www.medicinenet.com/nausea_and_vomiting/article.htm), [vomiting](https://www.medicinenet.com/vomiting/symptoms.htm), and abdominal distention. Obstruction of the small intestine is much more likely since the small intestine is much narrower than the colon.

Deep ulcers can cause puncture holes or perforations in the walls of the small intestine and the colon, and create a tunnel between the intestine and adjacent organs. If the ulcer tunnel reaches an adjacent empty space inside the abdominal cavity, a collection of infected pus (an abdominal [abscess](https://www.medicinenet.com/skin_problems_pictures_slideshow/article.htm)) is formed. Individuals with abdominal abscesses can develop tender abdominal masses, high fevers, and abdominal pain.