

What is IBD (Inflammatory Bowel Disease)?

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Overview

Inflammatory bowel disease (IBD) represents a group of intestinal diseases that cause prolonged inflammation of the digestive tract. [The digestive tract comprises the mouth, esophagus, stomach, small intestine and large intestine. It's responsible for breaking down food, extracting the nutrients and removing any unusable material and waste products. Inflammation anywhere along the digestive tract disrupts this normal process. IBD can be very painful and disruptive and in some cases, it may even be life-threatening.]

Inflammatory bowel disease (IBD) is an umbrella term used to describe disorders that involve chronic inflammation of your digestive tract.

What are the main types of IBD (Inflammatory bowel disease)?

The two main types of IBD (Inflammatory bowel disease) are:

Ulcerative colitis: This condition causes long-lasting inflammation and ulcers in the innermost lining of your large intestine (colon) and rectum.

Crohn's diseases: This condition causes inflammation of the lining of any part of your digestive tract, which often spreads deep into affected tissues. However, it mostly affects the tail end of the small intestine.

Both Ulcerative colitis and Crohn's disease usually involve severe diarrhea, abdominal pain, and fatigue and weight loss. IBD can be debilitating and sometimes leads to life-threatening complications.

What are the Symptoms of IBD (Inflammatory bowel disease)?

IBD (Inflammatory bowel disease) symptoms vary, depending on the severity of inflammation and location (where it occurs). Symptoms may range from mild to severe. You are likely to have periods of active illness followed by periods of remission.

Signs and symptoms that are common to both Crohn's disease and ulcerative colitis include:

- **Diarrhea**, which occurs when affected parts of the bowel can't absorb water.
- **Abdominal pain and cramping**, stomach pain, cramping and bloating due to bowel obstruction.
- **Blood in stool**, which may cause blood to show up in the stool (hematochezia) due to bleeding ulcers.

- **Unintended weight loss**
- **Fever and fatigue**
- **Anemia**
- **Reduced appetite**

People with Crohn's disease may also get canker sores in their mouths. Sometimes ulcers and fissures also appear around the genital area or anus.

IBD can also be associated with problems outside of the digestive system, such as ;

- **Eye inflammation**
- **Skin disorders**
- **Arthritis**

When to See a Doctor

See your doctor if you experience a persistent change in your bowel habits or if you have any of the signs and symptoms of inflammatory bowel disease. Although inflammatory bowel disease usually isn't fatal, it's a serious disease that, in some cases, may cause life-threatening complications.

What Causes IBD (Inflammatory bowel disease)?

The exact cause of inflammatory bowel disease remains unknown. Previously, diet and stress were suspected, but now doctors know that these factors may aggravate but don't cause IBD. However, genetics and problem with the immune system have been associated with IBD.

Immune System: The immune system may also play a role in IBD. Normally, the immune system defends the body from pathogens (organisms that cause diseases and infections). A bacterial or viral infection of the digestive tract can trigger an immune response. As the body tries to fight off the invaders, the digestive tract becomes inflamed. When the infection is gone, the inflammation goes away. That's a healthy response. In people with IBD, however, digestive tract inflammation can happen even when there's no infection. The immune attacks the body's own cells instead. This is known as an autoimmune response.

Genetics: Heredity also seems to play a role in that IBD. You might be more likely to develop IBD if you have a sibling or parent with the disease. However, most people with IBD don't have family history. This is why scientists believe IBD may have a genetic component.

What are the Risk Factors for Developing IBD (Inflammatory bowel disease)?

The biggest risk factors for developing Crohn's disease and ulcerative colitis include:

Age: IBD can happen at any age, but in most people who develop IBD are diagnosed before 35 years old. But some people don't develop the disease until their 50s or 60s.

Gender: In general, IBD affects both genders equally. Ulcerative colitis is more common among men, while Crohn's disease is more common among women.

Family history: People who have a parent, sibling or child with IBD are at a much higher risk for developing it themselves.

Ethnicity: IBD is present in all populations. However, certain ethnic groups such as Caucasians and Ashkenazi Jews have a higher risk.

Smoking: Smoking is one of the main risk factors for developing Crohn's disease.

Smoking also aggravates the pain and other symptoms of Crohn's disease and increases the risk of complications. However, ulcerative colitis primarily affects nonsmokers and ex-smokers.

NSAIDs (Nonsteroidal anti-inflammatory medications): These include ibuprofen, naproxen sodium, diclofenac sodium and others. These medications may increase the risk of developing IBD or worsen disease in people who have IBD.

Geographical region: People who live in urban areas and industrialised regions have a higher risk of getting IBD. Those with white collar jobs are also more likely to develop the disease. This can be partially explained by lifestyle choices and diet. Therefore, it may be that environmental factors, including a diet high in fat or processed foods, play a role. People living in northern climates also seem to be at greater risk.

What are the Possible Complications of IBD (Inflammatory bowel disease)?

Complications of Crohn's disease may include:

Malnutrition with resulting weight loss and anemia: Diarrhea, abdominal pain and cramping may make it difficult for you to eat or for your intestine to absorb enough nutrients to keep you nourished. It's also common to weight loss or to develop anemia due to low iron or vitamin B12 caused by the disease.

Bowel obstruction: Crohn's disease affects the full thickness of the intestinal wall. Over time, parts of the bowel can thicken and narrow, which may block the flow of digestive contents. You may require surgery to remove the diseased portion of your bowel.

Ulcers: Chronic inflammation can lead to ulcers anywhere in your digestive tract, including your mouth and anus and in the genital area (perineum).

Fistulas: Sometimes ulcers can extend completely through the intestinal wall, creating a fistula — an abnormal connection between different body parts. Fistulas near or around the anal area (perianal) are the most common kind. In some cases, a fistula may become infected and form an abscess.

Anal fissure: This is a small tear in the tissue that lines the anus or in the skin around the anus where infections can occur. It's often associated with painful bowel movements and may lead to a perianal fistula.

Complications of ulcerative colitis may include:

Toxic Megacolon: Ulcerative colitis may cause the colon to rapidly widen and swell, a serious condition known as toxic megacolon.

Perforation or Intestinal rupture: A perforated colon (a hole in the colon) most commonly is caused by toxic megacolon, but it may also occur on its own.

Severe dehydration: Excessive diarrhea can result in dehydration.

How is IBD ((Inflammatory bowel disease) diagnosed?

To diagnose IBD, your doctor will first ask you questions about your family's medical history and your bowel movements. A physical exam may then be followed by one or more diagnostic tests and procedures.

Blood tests and Stool sample

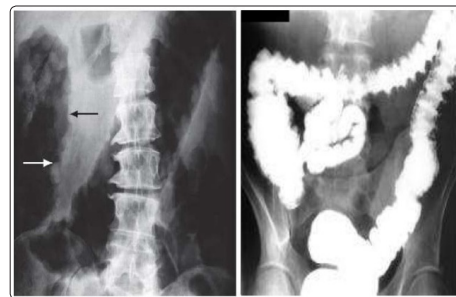
Blood tests for anemia or infection: Your doctor may suggest blood tests to check for anemia — a condition in which there aren't enough red blood cells to carry adequate oxygen to your tissues — or to check for signs of infection from bacteria or viruses. These tests can be used to look for infections and other diseases. Blood tests can also sometimes be used to distinguish between Crohn's disease and ulcerative colitis. However, blood tests alone can't be used to diagnose IBD.

Fecal occult blood test: You may need to provide a stool sample so that your doctor can test for hidden blood in your stool.

Imaging Procedures

Plain film or X-ray: If you have severe symptoms, your doctor may use a standard X-ray of your abdominal area to rule out serious complications, such as perforated colon.

Barium enema: A barium enema is an X-ray exam of the colon and small intestine. In the past, this type of test was often used, but now other tests have largely replaced it.



Abdominal X-ray (a) showing toxic dilatation. The arrows indicate mucosal islands. **(b)** showing a grossly dilated colon due to severe ulcerative colitis

Computed tomography (CT) scan: You may have a CT scan — a special X-ray technique that provides more detail than a standard X-ray does. This test looks at the entire bowel as well as at tissues outside the bowel. CT enterography is a special CT scan that provides

better images of the bowel. This test has replaced barium X-rays in many medical centers. They can also detect complications of IBD.

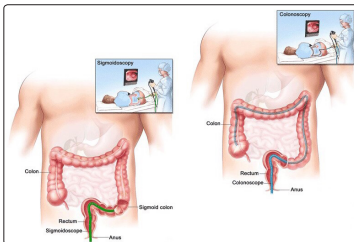
Magnetic resonance imaging (MRI): An MRI scanner uses a magnetic field and radio waves to create detailed images of organs and tissues. An MRI is particularly useful for evaluating a fistula around the anal area (pelvic MRI) or the small intestine (MR Enterography). Unlike a CT, there is no radiation exposure with an MRI. Both CT scans and MRIs can be used to determine how much of the intestine is affected by IBD.



CT or MRI scanner

Endoscopic Procedures

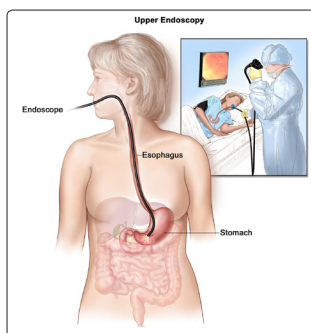
Colonoscopy: This procedure uses a thin, flexible, lighted tube with an attached camera on its end to look the entire colon. This camera is inserted through the anus. It allows your doctor to look for ulcers, fistulas and other damage in the entire length of the large intestine. During the procedure, your doctor can also take small samples of tissue (biopsy) for laboratory analysis. Sometimes a tissue sample can help confirm a diagnosis.



Sigmoidoscopy and colonoscopy

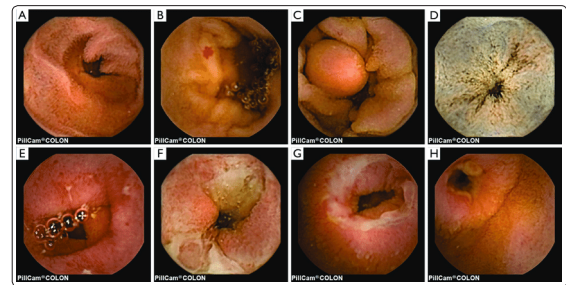
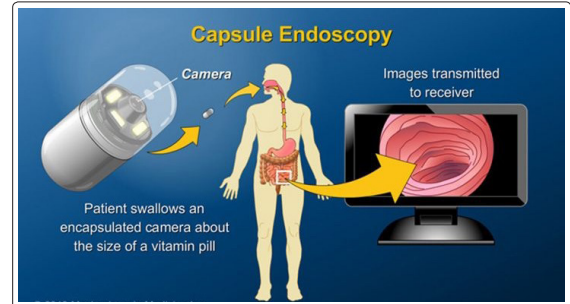
Flexible Sigmoidoscopy: A sigmoidoscopy examines only the last 20 inches of the large intestine – the sigmoid colon (rectum and sigmoid).

Upper Endoscopy: In this procedure, your doctor uses a slender, flexible, lighted tube to examine the esophagus, stomach and first part of the small intestine (duodenum). While it is rare for these areas to be involved with Crohn’s disease, this test may be recommended if you are having nausea and vomiting, difficulty eating or upper abdominal pain.



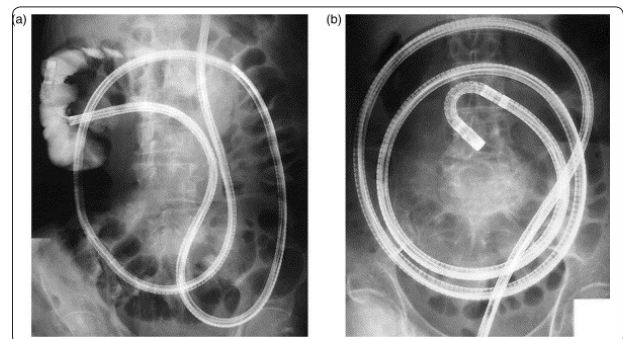
Upper GI endoscopy

Capsule Endoscopy: This test inspects the small intestine, which is much harder to examine than the large intestine. For the test, you swallow a small capsule that has a camera in it. As it moves through your small intestine, it takes pictures. Once you’ve passed the camera painlessly in your stool, the pictures can be seen on a computer. This test is only used when other tests have failed to find the cause of Crohn’s disease symptoms. You may still need an endoscopy with a biopsy to confirm a diagnosis of Crohn’s disease.



Capsule endoscopic images of small bowel. (A) Normal; (B) angioectasia; (C) 15-mm-large submucosal tumor (lipoma); (D) tattoo; (E) Crohn’s erosions; (F) Crohn’s ulcers; (G) Crohn’s stenosis; (H) ischemic ulcerated stenosis.

Balloon-Assisted Enteroscopy: For this test, a scope is used in conjunction with a device called an overtube. This enables the doctor to look further into the small bowel where standard endoscopes don’t reach. This technique is useful when a capsule endoscopy shows abnormalities, but the diagnosis is still in question.



Balloon-Assisted Enteroscopy

How is IBD (Inflammatory bowel disease) treated?

There are number of different treatments for IBD. The goal of inflammatory bowel disease treatment is to reduce the inflammation that triggers your signs and symptoms. In the best cases, this may lead not only to symptom relief but also to long-term remission and reduced risks of complications. IBD treatment usually involves either drug therapy or surgery.

Medications

Anti-inflammatory drugs: Anti-inflammatory drugs are often the first step in the treatment of inflammatory bowel disease. Anti-inflammatories include corticosteroids and aminosalicylates, such as mesalamine, balsalazide and olsalazine. Which medication you take depends on the area of your colon that's affected.

Immune suppressants or immunomodulators: These drugs work in a variety of ways to suppress the immune response that releases inflammation-inducing chemicals in the intestinal lining. For some people, a combination of these drugs works better than one drug alone. Some examples of immunosuppressant drugs include azathioprine, mercaptopurine, cyclosporine and methotrexate. One class of drugs called tumor necrosis factor (TNF)-alpha inhibitors, or biologics, works by neutralizing a protein produced by your immune system. But in people with IBD, higher levels of TNF can lead to more inflammation.

Another medication, tofacitinib is a newer option that works in a unique way to reduce inflammation. Immune suppressants can have many side effects, including rashes and infections. Examples include infliximab (Remicade), adalimumab (Humira) and golimumab (Simponi). Other biologic therapies that may be used are natalizumab, vedolizumab and ustekinumab.

Antibiotics: Antibiotics may be used in addition to other medications or when infection is a concern — in cases of perianal Crohn's disease, for example. Frequently prescribed antibiotics include ciprofloxacin (Cipro) and metronidazole (Flagyl).

Antibiotics are used to kill bacteria that may trigger or aggravate IBD symptoms.

Anti-diarrheal medications: A fiber supplement—such as psyllium powder or methylcellulose—can help relieve mild to moderate diarrhea by adding bulk to your stool. For more severe diarrhea, loperamide (Imodium) may be effective.

Pain relievers: For mild pain, your doctor may recommend acetaminophen. However, ibuprofen, naproxen sodium and diclofenac sodium likely will make your symptoms worse and can make your disease worse as well.

Iron supplements: If you have chronic intestinal bleeding, you may develop iron deficiency anemia and need to take iron supplements.

Calcium and vitamin D supplements: Crohn's disease and steroids used to treat it can increase your risk of osteoporosis, so you may need to take a calcium supplement with added vitamin D.

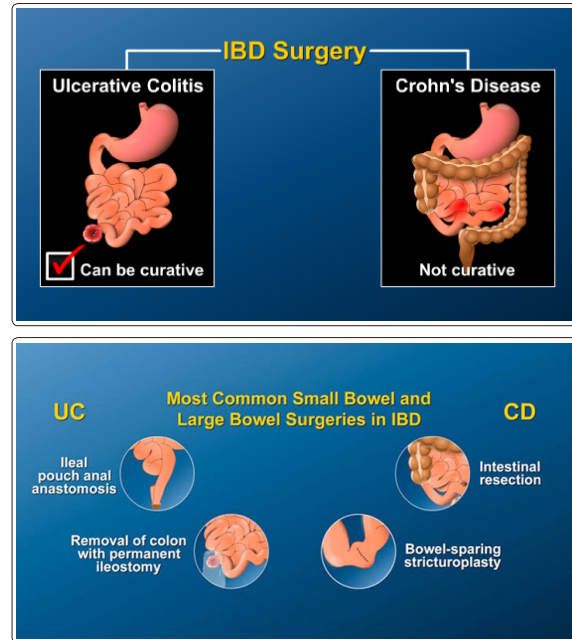
Surgery

If diet and lifestyle changes, drug therapy, or other treatments don't relieve your IBD signs and symptoms, your doctor may recommend surgery.

Surgery for ulcerative colitis: Surgery can often eliminate ulcerative colitis. But that usually means removing your entire colon and rectum (proctocolectomy). In most cases, this involves a procedure called an ileal pouch anal anastomosis. This procedure eliminates the need to wear a bag to collect stool. Your surgeon constructs a pouch from the end of your small intestine. The pouch is then attached directly to your anus, allowing you to expel waste

relatively normally. In some cases a pouch is not possible. Instead, surgeons create a permanent opening in your abdomen (ileal stoma) through which stool is passed for collection in an attached bag.

Surgery for Crohn's disease: Up to one-half of people with Crohn's disease will require at least one surgery. However, surgery does not cure Crohn's disease. During surgery, your surgeon removes a damaged portion of your digestive tract and then reconnects the healthy sections. Surgery may also be used to close fistulas and drain abscesses. The benefits of surgery for Crohn's disease are usually temporary. The disease often recurs, frequently near the reconnected tissue. The best approach is to follow surgery with medication to minimize the risk of recurrence.



Surgery

Diet

There's no firm evidence that what you eat actually causes inflammatory bowel disease. But certain foods and beverages can aggravate your signs and symptoms, especially during a flare-up. It can be helpful to keep a food diary to keep track of what you're eating, as well as how you feel. If you discover some foods are causing your symptoms to flare, you can try eliminating those foods.

Limit Dairy Products: Many people with inflammatory bowel disease find that problems such as diarrhea, abdominal pain and gas improve by limiting or eliminating dairy products. You may be lactose intolerant—that is, your body can't digest the milk sugar (lactose) in dairy foods. Using an enzyme product such as Lactaid may help as well.

Try Low-Fat Foods: If you have Crohn's disease of the small intestine, you may not be able to digest or absorb fat normally. Instead, fat passes through your intestine, making your diarrhea worse. Try avoiding butter, margarine, cream sauces and fried foods.

Take Care With Fiber: If you have inflammatory bowel disease, high-fiber foods, such as fresh fruits and vegetables and whole grains, may make your symptoms worse. If raw fruits and vegetables bother you, try steaming, baking or stewing them. In general, you may have more problems with foods in the cabbage family, such as

broccoli and cauliflower, and nuts, seeds, corn and popcorn. Avoid other problem foods. Spicy foods, alcohol and caffeine may make your signs and symptoms worse.

How can IBD (Inflammatory bowel disease) be prevented?

The hereditary causes of IBD can't be prevented. However, you may be able reduce your risk of developing IBD or prevent a relapse by:

Eat Small Meals: You may find you feel better eating five or six small meals a day rather than two or three larger ones.

Drink Plenty of Liquids: Try to drink plenty of fluids daily. Water is best. Alcohol and beverages that contain caffeine stimulate your

intestines and can make diarrhea worse, while carbonated drinks frequently produce gas.

Consider Multivitamins: Because Crohn's disease can interfere with your ability to absorb nutrients and because your diet may be limited, multivitamin and mineral supplements are often helpful. Check with your doctor before taking any vitamins or supplements.

Exercising regularly

Quitting smoking

IBD can cause some discomfort, but there are ways you can manage the disease and still live a healthy, active lifestyle.

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