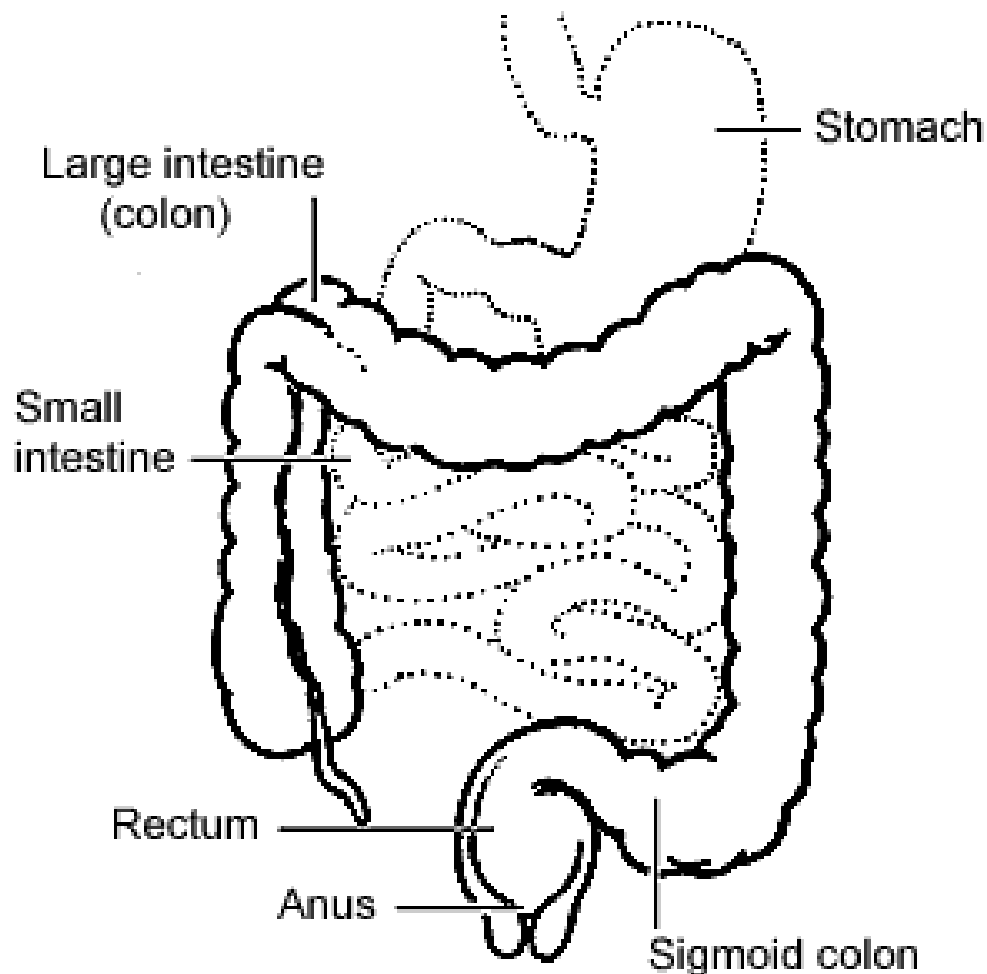


Ulcerative Colitis

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Ulcerative colitis is a disease that causes inflammation and sores, called ulcers, in the lining of the large intestine. The inflammation usually occurs in the rectum and lower part of the colon, but it may affect the entire colon. Ulcerative colitis rarely affects the small intestine except for the end section, called the terminal ileum. Ulcerative colitis may also be called colitis or proctitis.



The inflammation makes the colon empty frequently, causing diarrhea. Ulcers form in places where the inflammation has killed the cells lining the colon; the ulcers bleed and produce pus.

Ulcerative colitis is an inflammatory bowel disease (IBD), the general name for diseases that cause inflammation in the small intestine and colon. Ulcerative colitis can be difficult to diagnose because its symptoms are similar to other intestinal disorders and to another type of IBD called Crohn's disease. Crohn's disease differs from ulcerative colitis because it causes inflammation deeper within the intestinal wall. Also, Crohn's disease usually occurs in the small intestine, although it can also occur in the mouth, esophagus, stomach, duodenum, large intestine, appendix, and anus.

Ulcerative colitis may occur in people of any age, but most often it starts between ages 15 and 30, or less frequently between ages 50 and 70. Children and adolescents sometimes develop the disease. Ulcerative colitis affects men and women equally and appears to run in some families.

What causes ulcerative colitis?

Theories about what causes ulcerative colitis abound, but none have been proven. The most popular theory is that the body's immune system reacts to a virus or a bacterium by causing ongoing inflammation in the intestinal wall.

People with ulcerative colitis have abnormalities of the immune system, but doctors do not know whether these abnormalities are a cause or a result of the disease. Ulcerative colitis is not caused by emotional distress or sensitivity to certain foods or food products, but these factors may trigger symptoms in some people.

What are the symptoms of ulcerative colitis?

The most common symptoms of ulcerative colitis are abdominal pain and bloody diarrhea. Patients also may experience

- fatigue
- weight loss
- loss of appetite
- rectal bleeding
- loss of body fluids and nutrients

About half of patients have mild symptoms. Others suffer frequent fever, bloody diarrhea, nausea, and severe abdominal cramps. Ulcerative colitis may also cause problems such as arthritis, inflammation of the eye, liver disease (hepatitis, cirrhosis, and primary sclerosing cholangitis), osteoporosis, skin rashes, and anemia. No one knows for sure why problems occur outside the colon. Scientists think these complications may occur when the immune system triggers

inflammation in other parts of the body. Some of these problems go away when the colitis is treated.

How is ulcerative colitis diagnosed?

A thorough physical exam and a series of tests may be required to diagnose ulcerative colitis.

Blood tests may be done to check for anemia, which could indicate bleeding in the colon or rectum. Blood tests may also uncover a high white blood cell count, which is a sign of inflammation somewhere in the body. By testing a stool sample, the doctor can detect bleeding or infection in the colon or rectum.

The doctor may do a colonoscopy or sigmoidoscopy. For either test, the doctor inserts an endoscope--a long, flexible, lighted tube connected to a computer and TV monitor--into the anus to see the inside of the colon and rectum. The doctor will be able to see any inflammation, bleeding, or ulcers on the colon wall. During the exam, the doctor may do a biopsy, which involves taking a sample of tissue from the lining of the colon to view with a microscope. A barium enema x ray of the colon may also be required. This procedure involves filling the colon with barium, a chalky white solution. The barium shows up white on x ray film, allowing the doctor a clear view of the colon, including any ulcers or other abnormalities that might be there.

What is the treatment for ulcerative colitis?

Treatment for ulcerative colitis depends on the seriousness of the disease. Most people are treated with medication. In severe cases, a patient may need surgery to remove the diseased colon. Surgery is the only cure for ulcerative colitis.

Some people whose symptoms are triggered by certain foods are able to control the symptoms by avoiding foods that upset their intestines, like highly seasoned foods, raw fruits and vegetables, or milk sugar (lactose). Each person may experience ulcerative colitis differently, so treatment is adjusted for each individual. Emotional and psychological support is important.

Some people have remissions--periods when the symptoms go away--that last for months or even years. However, most patients' symptoms eventually return. This changing pattern of the disease means one cannot always tell when a treatment has helped.

Some people with ulcerative colitis may need medical care for some time, with regular doctor visits to monitor the condition.

Drug Therapy

The goal of therapy is to induce and maintain remission, and to improve the quality of life for people with ulcerative colitis. Several types of drugs are available.

- **Aminosalicylates**, drugs that contain 5-aminosalicylic acid (5-ASA), help control inflammation. Sulfasalazine is a combination of sulfapyridine and 5-ASA and is used to induce and maintain remission. The sulfapyridine component carries the anti-inflammatory 5-ASA to the intestine. However, sulfapyridine may lead to side effects such as include nausea, vomiting, heartburn, diarrhea, and headache. Other 5-ASA agents such as olsalazine, mesalamine, and balsalazide, have a different carrier, offer fewer side effects, and may be used by people who cannot take sulfasalazine. 5-ASAs are given orally, through an enema, or in a suppository, depending on the location of the inflammation in the colon. Most people with mild or moderate ulcerative colitis are treated with this group of drugs first.
- **Corticosteroids** such as prednisone and hydrocortisone also reduce inflammation. They may be used by people who have moderate to severe ulcerative colitis or who do not respond to 5-ASA drugs. Corticosteroids, also known as steroids, can be given orally, intravenously, through an enema, or in a suppository, depending on the location of the inflammation. These drugs can cause side effects such as weight gain, acne, facial hair, hypertension, mood swings, and an increased risk of infection. For this reason, they are not recommended for long-term use.
- **Immunomodulators** such as azathioprine and 6-mercapto-purine (6-MP) reduce inflammation by affecting the immune system. They are used for patients who have not responded to 5-ASAs or corticosteroids or who are dependent on corticosteroids. However, immunomodulators are slow-acting and may take up to 6 months before the full benefit is seen. Patients taking these drugs are monitored for complications including pancreatitis and hepatitis, a reduced white blood cell count, and an increased risk of infection. Cyclosporine A may be used with 6-MP or azathioprine to treat active, severe ulcerative colitis in people who do not respond to intravenous corticosteroids.

Other drugs may be given to relax the patient or to relieve pain, diarrhea, or infection.

Hospitalization

Occasionally, symptoms are severe enough that the person must be hospitalized. For example, a person may have severe bleeding or severe diarrhea that causes dehydration. In such cases the doctor will try to stop

diarrhea and loss of blood, fluids, and mineral salts. The patient may need a special diet, feeding through a vein, medications, or sometimes surgery.

Surgery

About 25 percent to 40 percent of ulcerative colitis patients must eventually have their colons removed because of massive bleeding, severe illness, rupture of the colon, or risk of cancer. Sometimes the doctor will recommend removing the colon if medical treatment fails or if the side effects of corticosteroids or other drugs threaten the patient's health.

Surgery to remove the colon and rectum, known as proctocolectomy, is followed by one of the following:

- **Ileostomy**, in which the surgeon creates a small opening in the abdomen, called a stoma, and attaches the end of the small intestine, called the ileum, to it. Waste will travel through the small intestine and exit the body through the stoma. The stoma is about the size of a quarter and is usually located in the lower right part of the abdomen near the beltline. A pouch is worn over the opening to collect waste, and the patient empties the pouch as needed.
- **Ileoanal anastomosis**, or pull-through operation, which allows the patient to have normal bowel movements because it preserves part of the anus. In this operation, the surgeon removes the diseased part of the colon and the inside of the rectum, leaving the outer muscles of the rectum. The surgeon then attaches the ileum to the inside of the rectum and the anus, creating a pouch. Waste is stored in the pouch and passed through the anus in the usual manner. Bowel movements may be more frequent and watery than before the procedure. Inflammation of the pouch (pouchitis) is a possible complication.

Not every operation is appropriate for every person. Which surgery to have depends on the severity of the disease and the patient's needs, expectations, and lifestyle. People faced with this decision should get as much information as possible by talking to their doctors, to nurses who work with colon surgery patients (enterostomal therapists), and to other colon surgery patients. Patient advocacy organizations can direct people to support groups and other information resources. (See For More Information for the names of such organizations.)

Most people with ulcerative colitis will never need to have surgery. If surgery does become necessary, however, some people find comfort in knowing that after the surgery, the colitis is cured and most people go on to live normal, active lives.

Research

Researchers are always looking for new treatments for ulcerative colitis. Therapies that are being tested for usefulness in treating the disease include

- **Biologic agents.** These include monoclonal antibodies, interferons, and other molecules made by living organisms. Researchers modify these drugs to act specifically but with decreased side effects, and are studying their effects in people with ulcerative colitis.
- **Budesonide.** This corticosteroid may be nearly as effective as prednisone in treating mild ulcerative colitis, and it has fewer side effects.
- **Heparin.** Researchers are examining whether the anticoagulant heparin can help control colitis.
- **Nicotine.** In an early study, symptoms improved in some patients who were given nicotine through a patch or an enema. (This use of nicotine is still experimental-the findings do not mean that people should go out and buy nicotine patches or start smoking.)
- **Omega-3 fatty acids.** These compounds, naturally found in fish oils, may benefit people with ulcerative colitis by interfering with the inflammatory process.

Is colon cancer a concern?

About 5 percent of people with ulcerative colitis develop colon cancer. The risk of cancer increases with the duration and the extent of involvement of the colon. For example, if only the lower colon and rectum are involved, the risk of cancer is no higher than normal. However, if the entire colon is involved, the risk of cancer may be as much as 32 times the normal rate.

Sometimes precancerous changes occur in the cells lining the colon. These changes are called "dysplasia." People who have dysplasia are more likely to develop cancer than those who do not. Doctors look for signs of dysplasia when doing a colonoscopy or sigmoidoscopy and when examining tissue removed during the test.

According to the 2002 updated guidelines for colon cancer screening, people who have had IBD throughout their colon for at least 8 years and those who have had IBD in only the left colon for 12 to 15 years should have a colonoscopy with biopsies every 1 to 2 years to check for dysplasia. Such screening has not been proven to reduce the risk of colon cancer, but it may help identify cancer early should it develop. These guidelines were produced by an independent expert panel and endorsed by numerous organizations, including the American Cancer Society, the American College of Gastroenterology, the American Society of

Colon and Rectal Surgeons, and the Crohn's & Colitis Foundation of America Inc., among others.

Hope Through Research

NIDDK, through the Division of Digestive Diseases and Nutrition, conducts and supports research into many kinds of digestive disorders, including ulcerative colitis. Researchers are studying how and why the immune system is activated, how it damages the colon, and the processes involved in healing. Through this increased understanding, new and more specific therapies can be developed.

For More Information

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The National Digestive Diseases Information Clearinghouse (NDDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1980, the clearinghouse provides information about digestive diseases to people with digestive disorders and to their families, health care professionals, and the public. NDDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about digestive diseases.

Publications produced by the clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

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