National Institute of Diabetes and Digestive and Kidney Diseases

Crohn's Disease

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Definition & Facts

What is Crohn's disease?

Crohn's disease is a chronic disease in which abnormal reactions of the immune system cause inflammation in your digestive tract. Most commonly, Crohn's disease affects your small intestine and the beginning of your large intestine. However, the disease may affect any part of your digestive tract, from your mouth to your anus.

Crohn's disease is an inflammatory bowel disease (IBD). Ulcerative colitis and microscopic colitis are other common types of IBD.

Crohn's disease most often begins slowly and may get worse over time. Symptoms can range from mild to severe. When people have symptoms, it's called a flare. In between flares, most people have periods of remission—times when symptoms disappear. Periods of remission can last for weeks or years. The goal of treatment is to keep people in remission long term.

How common is Crohn's disease?

Researchers estimate that 1 million people in the United States have Crohn's disease.[1] Studies show that Crohn's disease has become more common in the United States and other parts of the world. Experts do not know the reason for this increase.

Who is more likely to develop Crohn's disease?

Crohn's disease can develop in people of any age or race, but is more likely to develop in people who

- are between the ages of 20 and 29[2]
- have a family member, most often a sibling or parent, with IBD
- are of Jewish descent[2]
- smoke cigarettes

What are the complications of Crohn's disease?

Crohn's disease may lead to complications that develop over time. Complications may include

- anemia, a condition in which you have fewer red blood cells than normal. Crohn's disease may lead to more than one type of anemia, including iron-deficiency anemia NIH, anemia of inflammation or chronic disease, or vitamin B12 deficiency anemia NIH.
- bone problems. Crohn's disease and corticosteroids NIH used to treat the disease may lead to low bone mass NIH, known as osteopenia or osteoporosis NIH.
- problems with growth and development in children. Problems may include gaining less weight than normal, slowed growth, short stature, or delayed puberty NIH.
- malnutrition, a condition in which you don't get enough of the vitamins, minerals, and other nutrients you need to be healthy.

The inflammation of Crohn's disease may lead to serious complications, which could require being treated at a hospital or surgery. Serious complications include

- intestinal obstruction NIH, a partial or total blockage of the movement of food, fluid, air, or stool through your intestines.
- fistulas NIH, which are abnormal passages or tunnels between two organs, or between an organ and the outside of your body. Fistulas may become infected.
- abscesses NIH, which are painful, swollen, pus-filled pockets of infection.
- anal fissures, which are small tears in your anus. Anal fissures may cause itching, pain, or bleeding.
- ulcers, or open sores in your mouth, intestines, anus, or perineum.

Health problems affecting other parts of the body

Some people with Crohn's disease also have inflammation in parts of the body other than the digestive tract, including the

- joints, causing certain types of arthritis
- skin, such as a rash that can be painful
- eyes, including irritation
- liver and bile ducts, causing conditions such as primary sclerosing cholangitis (PSC)
- kidneys, including development of kidney stones
- lungs, which if severe can lead to difficulty breathing

People with Crohn's disease also commonly report stress, depression, and anxiety. Stress may change the microbiome in the digestive tract, which can worsen the symptoms of Crohn's disease.

Colorectal and small intestine cancer

If you have Crohn's disease in your large intestine, you are more likely to develop colorectal cancer NIH. Your risk is higher if you've had Crohn's disease for a longer time. Your risk is also higher if you have PSC or a family history of colorectal cancer.

Your doctor may recommend a colonoscopy to screen for colorectal cancer. Screening is testing for diseases when you have no symptoms. Screening can check for colorectal cancer or precancerous cells, known as dysplasia. Diagnosing cancer early can improve chances for recovery.

For people with Crohn's disease in the large intestine, doctors most often recommend starting colorectal cancer screening 8 to 10 years after diagnosis. Doctors may recommend repeat screening every 1 to 5 years.[3,4] If you have Crohn's disease and PSC, your doctor may recommend screening every year, starting at diagnosis.[2]

If you have Crohn's disease in your small intestine, you may be more likely to develop small intestine cancer NIH, but the risk is very low.

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Symptoms & Causes

What are the symptoms of Crohn's disease?

The most common symptoms of Crohn's disease are

- diarrhea
- cramping and pain in your abdomen, or belly

- weight loss

Other symptoms include

- anemia
- eye redness or pain
- feeling tired
- fever
- joint pain or soreness
- nausea, loss of appetite, or vomiting
- skin changes such as red, tender bumps under the skin

Your symptoms may vary depending on the location and severity of your inflammation.

The most common symptoms of Crohn's disease are diarrhea, cramping and pain in your belly, and weight loss.

What causes Crohn's disease?

Doctors aren't sure what causes Crohn's disease. Experts think the following factors may play a role in causing Crohn's disease.[5]

Abnormal immune reaction

One cause of Crohn's disease may be an abnormal reaction of your body's immune system, which happens when your immune system attacks bacteria that tend to live in your intestines. This immune system response causes inflammation in the digestive tract, leading to Crohn's disease. Abnormal immune reactions can be triggered by the environment, genes, or the microbiome.

Environment

Experts think a person's environment—the place where someone lives, the conditions in which they live, and factors outside their body—may play a role in causing Crohn's disease. Researchers are still studying how people's environments interact with genes, the immune system, and the microbiome to affect the chance of developing Crohn's disease. For example, research has shown smoking may double your chance of developing Crohn's disease.[6]

Genes

Crohn's disease sometimes runs in families. Research has shown that if you have a parent or sibling with Crohn's disease, you may be more likely to develop the disease. Experts continue to study the link between genes and Crohn's disease.

Microbiome

The microbes in your digestive tract—including bacteria, viruses, and fungi—that help with digestion are called the microbiome. Studies have found differences between the microbiomes of people who have inflammatory bowel disease (IBD) and those who don't. Researchers are still studying the relationship between the microbiome and IBD.

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Diagnosis

How do doctors diagnose Crohn's disease?

To diagnose Crohn's disease, doctors review your medical and family history, perform a physical exam, and order medical tests. Doctors order tests to

- confirm the diagnosis of Crohn's disease

- find out how severe the inflammation is and where in the gastrointestinal (GI) tract the inflammation is located
- rule out other health problems—such as infections, irritable bowel syndrome, or ulcerative colitis—that may cause symptoms similar to those of Crohn's disease

Medical and family history

To help diagnose Crohn's disease, your doctor will ask about your symptoms, your medical history, and any medicines you take. Your doctor will also ask about lifestyle factors, such as smoking, and about your family history.

Physical exam

During a physical exam, a doctor most often

- checks for bloating in your abdomen, or belly
- listens to sounds within your abdomen using a stethoscope
- presses on your abdomen to feel for tenderness or masses
- performs a full-body exam to check for weight loss and inflammation in other parts of the body and to rule out other causes of your symptoms

What tests do doctors use to diagnose Crohn's disease?

Your doctor may perform blood tests, stool tests, endoscopy, and imaging tests to help diagnose Crohn's disease.

Lab tests

Blood tests

A health care professional may take a blood sample from you and send the sample to a lab to test for changes in

- red blood cells. If you have fewer than normal red blood cells, you may have anemia.
- white blood cells. When your white blood cell count is higher than normal, you may have inflammation or infection somewhere in your body.
- c-reactive protein NIH. When your c-reactive protein level is high, you may have inflammation in your body.

Stool tests

A health care professional may give you a container for catching and storing the stool. You will receive instructions on where to send or take the container to be studied. Doctors use stool tests to look for inflammation and rule out certain infections.

Doctors use blood tests to check for signs of anemia or inflammation in your body.

Endoscopy

Endoscopy tests are the most accurate way to diagnose Crohn's disease and rule out other health problems.

During an endoscopy, doctors use an endoscope—a long, flexible, narrow tube with a light and tiny camera on one end—to view inside the GI tract. Doctors may take biopsies during endoscopy tests to help diagnose Crohn's disease.

Endoscopy tests include

- colonoscopy, which doctors use to see inside your rectum, colon, and ileum
- enteroscopy, which doctors use to see inside your small intestine
- upper GI endoscopy, which doctors use to see inside your esophagus, stomach, and duodenum

Capsule endoscopy

Capsule endoscopy tests check for signs of Crohn's disease in the small intestine.

For a capsule endoscopy test, you swallow a capsule that contains a tiny camera. You also wear a device, called a recorder. As the capsule passes through your GI tract, the camera records and sends images to the

recorder. You will return the recorder to your doctor, who will download and review the images. The capsule will leave your body during a bowel movement. You can safely flush the capsule down the toilet.

Imaging tests

Doctors may order imaging tests, including

- computed tomography (CT) scans NIH, which use a combination of x-rays and computer technology to create images
- magnetic resonance imaging (MRI) NIH, which takes pictures of the body's internal organs and soft tissues without using x-rays
- upper GI series, which uses x-rays and a chalky liquid called barium to view the upper GI tract, including the small intestine

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Treatment

How do doctors treat Crohn's disease?

Doctors treat Crohn's disease with medicines and surgery.

There is no single way to treat every person who has Crohn's disease. The goals of treatment are to lower inflammation in your intestines, prevent flares of your symptoms, and keep you in remission.

Medicines

Many people with Crohn's disease need medicines. Which medicines your doctor prescribes will depend on your symptoms, where Crohn's disease is causing inflammation, and other factors.

Medicines do not cure Crohn's disease. However, medicines can reduce inflammation and bring on and maintain remission—a time when your symptoms disappear. Crohn's disease medicines include

- corticosteroids NIH, also called steroids, which should only be used short term
- immunosuppressants
- biologics
- a new small molecule medicine, which doctors may prescribe for adults with Crohn's disease who don't respond to other medicines

Many people with Crohn's disease need medicines.

Bowel rest

If you are in the hospital with complications from Crohn's disease, you may need to rest your bowel. Your doctor may suggest resting your bowel for a few days to several weeks.[7,8] Bowel rest may involve drinking only certain liquids or not eating or drinking anything. During bowel rest, your doctor may

- ask you to drink a liquid that contains nutrients
- give you a liquid that contains nutrients through a feeding tube inserted into your stomach or small intestine
- give you nutrients through a special tube inserted into a vein in your arm

In most cases, your intestines will heal during bowel rest.

Surgery

Even with medicines, many people will need surgery to treat their Crohn's disease. Between 30% and 55% of people with Crohn's disease will require surgery within 10 years after diagnosis.[9] Surgery will not cure Crohn's disease. However, it can treat complications and improve symptoms. Doctors most often recommend surgery to treat

- fistulas
- abscesses
- colorectal cancer NIH
- dysplasia, or precancerous cells that increase the risk for developing colorectal cancer
- bleeding that is life-threatening
- intestinal obstructions caused by scarring
- inflammation and symptoms that don't improve or stop after treatment with medicines

A doctor may also recommend surgery if medicines do not improve your symptoms. A surgeon can perform different types of operations to treat Crohn's disease.

Small bowel resection

Small bowel resection is surgery to remove part of your small intestine. A small bowel resection may be needed if you have an intestinal obstruction or severe Crohn's disease in your small intestine.

Large bowel resection

A large bowel resection is surgery to remove part of your large intestine. A large bowel resection may be needed if you have an intestinal obstruction, a fistula, or severe Crohn's disease in your large intestine.

Proctocolectomy and ileostomy

Your doctor may recommend a proctocolectomy and ileostomy.

A proctocolectomy is surgery to remove your entire colon and rectum. In an ileostomy, surgeons bring the ileum—the end part of your small intestine—through the abdominal wall and create a stoma.

A stoma is a surgical connection between an internal organ and the skin on the outside of your body. After an ileostomy, waste will pass through the stoma. You'll wear a removable pouch, called an ostomy pouch, that is attached to the skin around your stoma to collect the waste.

If you have this type of surgery, you will have the stoma for the rest of your life.

How do doctors treat symptoms and complications of Crohn's disease?

Doctors may recommend or prescribe other ways to treat symptoms or complications of Crohn's disease. Talk with your doctor before taking any over-the-counter medicines.

Doctors may recommend

- acetaminophen NIH for mild pain. Avoid taking nonsteroidal anti-inflammatory drugs (NSAIDs), which can make your symptoms worse.

- antibiotics to prevent or treat complications that involve infection, such as abscesses and fistulas.
- loperamide NIH to help slow or stop severe diarrhea. In most cases, people take this medicine only for short periods of time and not when inflammation in the intestines is high, because it may increase the chance of developing megacolon.
- medicines to treat inflammation in your joints, eyes, or skin.
- calcium and vitamin D supplements or medicines to prevent or slow bone loss and osteoporosis NIH.

For safety reasons, talk with your doctor before using dietary supplements NIH or any other complementary or alternative NIH medicines or practices.

Doctors may also suggest

- changes in what you eat and drink
- warm baths and ointments to treat anal fissures

Doctors most often treat severe complications in a hospital. Doctors may

- perform surgery for intestinal obstruction, which can be life-threatening. Surgery may also be necessary for severe fistulas.
- give you intravenous (IV) fluids for severe malnutrition.
- give you antibiotics for abscesses and drain abscesses as needed.

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Eating, Diet, & Nutrition

What should I eat if I have Crohn's disease?

If you have Crohn's disease, you should choose healthy foods and drinks. Talk with your doctor about a healthy eating plan.

Crohn's disease can affect nutrition in several ways. Crohn's disease symptoms may cause some people to lose their appetite and eat less. Inflammation in the small intestine may cause the body to absorb fewer

nutrients. Certain medicines and surgery used to treat Crohn's disease may also cause the body to absorb fewer nutrients.

Depending on your symptoms and the medicines you take, your doctor may recommend changes to what you eat and drink.[10] Your doctor may also recommend dietary supplements if your body doesn't absorb enough nutrients. For safety reasons, talk with your doctor before using dietary supplements NIH, such as vitamins, or any complementary or alternative NIH medicines or medical practices.

Getting the amount of nutrients that is best for you may help prevent complications, such as malnutrition and problems with growth and development in children.

Diet

Researchers have not found that specific foods cause or worsen Crohn's disease symptoms. However, studies suggest that consuming healthy foods and drinks may lower the risk of developing inflammatory bowel disease (IBD).

Talk with your doctor about any foods that seem to be related to your symptoms. Your doctor may suggest keeping a food diary to help identify foods that seem to make your symptoms worse.

Gut bacteria

Some experts believe that the microbiome may play a role in Crohn's disease. Changes in certain types of bacteria in the digestive tract may lead to IBD, including Crohn's disease.

Eating a variety of healthy foods can improve healthy bacteria in the gut. Your doctor may recommend eating more fruits and vegetables for Crohn's disease.

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Clinical Trials

NIDDK conducts and supports clinical trials in many diseases and conditions, including digestive diseases. The trials look to find new ways to prevent, detect, or treat disease and improve quality of life.

What are clinical trials for Crohn's disease?

Clinical trials—and other types of clinical studies NIH—are part of medical research and involve people like you. When you volunteer to take part in a clinical study, you help doctors and researchers learn more about disease and improve health care for people in the future.

Researchers are studying many aspects of Crohn's disease and other types of inflammatory bowel disease (IBD), such as

- diet and the microbiome's effect on Crohn's disease
- genes that are associated with IBD in African Americans
- the immune system and how it controls inflammation in the digestive tract in people with IBD
- new treatments for Crohn's disease

Find out if clinical studies are right for you NIH.

Watch a video of NIDDK Director Dr. Griffin P. Rodgers explaining the importance of participating in clinical trials.

What clinical studies for Crohn's disease are looking for participants?

You can view a filtered list of clinical studies on Crohn's disease that are federally funded, open, and recruiting at ClinicalTrials.gov NIH. You can expand or narrow the list to include clinical studies from industry, universities, and individuals; however, the National Institutes of Health does not review these studies and cannot ensure they are safe for you. Always talk with your health care provider before you participate in a clinical study.

What have we learned about Crohn's disease from NIDDK-funded research?

NIDDK has supported many research projects to learn more about Crohn's disease and other types of IBD. NIDDK-supported research efforts include

- the IBD Genetics Consortium (IBDGC), established in 2002 to identify genes that make some people more likely to develop IBD. The IBDGC, in collaboration with the International IBD Genetics Consortium, has enrolled thousands of people with IBD and identified about 200 regions of the human genome that are associated with the risk of IBD.
- studies through the NIH Integrative Human Microbiome Project, which have examined the relationship between the microbiome and IBD.

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