

# Colonoscopy

*National Digestive Diseases Information Clearinghouse*



National Institute of  
Diabetes and Digestive  
and Kidney Diseases

## What is colonoscopy?

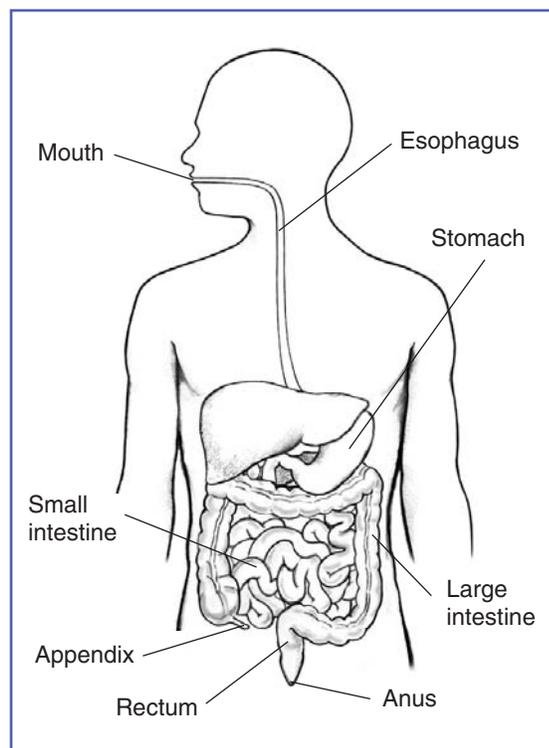
Colonoscopy is a procedure that uses a long, flexible, narrow tube with a light and tiny camera on one end, called a colonoscope or scope, to look inside the rectum and entire colon. Colonoscopy can show irritated and swollen tissue, ulcers, and polyps—extra pieces of tissue that grow on the lining of the intestine. A gastroenterologist—a doctor who specializes in digestive diseases—performs this procedure.

This procedure is different from virtual colonoscopy, which uses a combination of x rays and computer technology to create images of the rectum and entire colon. Read more in *Virtual Colonoscopy* at [www.digestive.niddk.nih.gov](http://www.digestive.niddk.nih.gov).

## What are the rectum and colon?

The rectum and colon are part of the gastrointestinal (GI) tract, a series of hollow organs joined in a long, twisting tube from the mouth to the anus—a 1-inch-long opening through which stool leaves the body. The body digests food using the movement of muscles in the GI tract, along with the release of hormones and enzymes. Organs

that make up the GI tract are the mouth, esophagus, stomach, small intestine, large intestine—which includes the appendix, cecum, colon, and rectum—and anus. The intestines are sometimes called the bowel. The last part of the GI tract—called the lower GI tract—consists of the large intestine and anus.



The GI tract

The large intestine is about 5 feet long in adults and absorbs water and any remaining nutrients from partially digested food passed from the small intestine. The large intestine then changes waste from liquid to a solid matter called stool. Stool passes from the colon to the rectum. The rectum is 6 to 8 inches long in adults and is located between the last part of the colon—called the sigmoid colon—and the anus. The rectum stores stool prior to a bowel movement. During a bowel movement, stool moves from the rectum to the anus.

## Why is a colonoscopy performed?

A colonoscopy is performed to help diagnose

- changes in bowel habits
- abdominal pain
- bleeding from the anus
- weight loss

A gastroenterologist also performs a colonoscopy as a screening test for colon cancer. Screening is testing for diseases when people have no symptoms. Screening may find diseases at an early stage, when a health care provider has a better chance of curing the disease.

## Get Screened for Colon Cancer

The American College of Gastroenterology recommends screening for colon cancer

- at age 50 for people who are not at increased risk of the disease
- at age 45 for African Americans because they have an increased risk of developing the disease<sup>1</sup>

A gastroenterologist may recommend earlier screening for people with a family history of colon cancer, a personal history of inflammatory bowel disease—a long-lasting disorder that causes irritation and sores in the GI tract—or other risk factors for colon cancer.

Medicare and private insurance companies sometimes change whether and how often they pay for cancer screening tests. People should check with their insurance company to find out how often they can get a screening colonoscopy that their insurance will cover.

Read more about colon cancer at [www.cancer.gov](http://www.cancer.gov).

<sup>1</sup>Rex DK, Johnson DA, Anderson JC, Schoenfeld PS, Burke CA, Inadomi JM. American College of Gastroenterology guidelines for colorectal cancer screening 2008. *American Journal of Gastroenterology*. 2009;104(3):739–750.

## How does a person prepare for a colonoscopy?

Preparation for a colonoscopy includes the following steps:

- **Talk with a gastroenterologist.** When people schedule a colonoscopy, they should talk with their gastroenterologist about medical conditions they have and all prescribed and over-the-counter medications, vitamins, and supplements they take, including
  - aspirin or medications that contain aspirin
  - nonsteroidal anti-inflammatory drugs such as ibuprofen or naproxen
  - arthritis medications
  - blood thinners
  - diabetes medications
  - vitamins that contain iron or iron supplements
- **Arrange for a ride home after the procedure.** Driving is not allowed for 24 hours after the procedure to allow time for the anesthesia to wear off.
- **Cleanse the bowel.** The gastroenterologist will give written bowel prep instructions to follow at home. A gastroenterologist orders a bowel prep so that little to no stool is present inside the person's intestine. A complete bowel prep lets the person pass stool that is clear. Stool inside the colon can prevent the gastroenterologist from clearly seeing the lining of the intestine. Instructions may include following a clear liquid diet for 1 to 3 days before the procedure

and avoiding drinks that contain red or purple dye. The instructions will provide specific direction about when to start and stop the clear liquid diet. People may drink or eat the following:

- fat-free bouillon or broth
- strained fruit juice, such as apple or white grape—orange juice is not recommended
- water
- plain coffee or tea, without cream or milk
- sports drinks in flavors such as lemon, lime, or orange
- gelatin in flavors such as lemon, lime, or orange

The person needs to take laxatives and enemas the night before a colonoscopy. A laxative is medication that loosens stool and increases bowel movements. An enema involves flushing water or laxative into the rectum using a special wash bottle. Laxatives and enemas can cause diarrhea, so the person should stay close to a bathroom during the bowel prep.

Laxatives are usually swallowed in pill form or as a powder dissolved in water. Some people will need to drink a large amount, usually a gallon, of liquid laxative at scheduled times. People may find this part of the bowel prep difficult; however, it is very important to complete the prep. The gastroenterologist will not be able to see the colon clearly if the prep is incomplete.

People should call the gastroenterologist if they are having side effects that are preventing them from finishing the prep.

## How is a colonoscopy performed?

A gastroenterologist performs a colonoscopy at a hospital or an outpatient center. In most cases, light anesthesia and pain medication help people relax for the test. The medical staff will monitor people's vital signs and try to make people as comfortable as possible. A nurse or technician places an intravenous (IV) needle in a vein in the arm to give anesthesia.

For the test, the person will lie on a table while the gastroenterologist inserts a colonoscope into the anus and slowly guides it through the rectum and into the colon. The scope inflates the large intestine with air to give the gastroenterologist a better view. The camera sends a video image of the intestinal lining to a computer screen, allowing the gastroenterologist to carefully examine the intestinal tissues. The gastroenterologist may move the person several times so the scope can be adjusted for better viewing. Once the scope has reached the opening to the small intestine, the gastroenterologist slowly withdraws it and examines the lining of the large intestine again.



For the test, the person will lie on a table while the gastroenterologist inserts a colonoscope into the anus and slowly guides it through the rectum and into the colon.

The gastroenterologist can remove polyps during colonoscopy and send them to a lab for testing. Polyps are common in adults and are usually harmless. However, most colon cancer begins as a polyp, so removing polyps early is an effective way to prevent cancer.

The gastroenterologist may also perform a biopsy, a procedure that involves taking a small piece of intestinal lining for examination with a microscope. The person will not feel the biopsy. A pathologist—a doctor who specializes in diagnosing diseases—will examine the tissue.

The gastroenterologist may pass tiny tools through the scope to remove polyps and take a sample for biopsy. If bleeding occurs, the gastroenterologist can usually stop it with an electrical probe or special medications passed through the scope. Colonoscopy usually takes 30 to 60 minutes.

## What can a person expect after a colonoscopy?

After the colonoscopy, a person can expect the following:

- People may need to stay at the hospital or outpatient center for 1 to 2 hours after the procedure.
- Cramping or bloating may occur during the first hour after the test.
- The anesthesia takes time to completely wear off.
- Full recovery is expected by the next day, and people should be able to go back to their normal diet.

- A member of the health care team will review the discharge instructions with the person—or with an accompanying friend or family member if the person is still groggy—and provide a written copy. The person should follow all instructions given.
- A friend or family member will need to drive the person home after the procedure.
- If the gastroenterologist removed polyps or performed a biopsy, light bleeding from the anus is normal.

Some results from a colonoscopy are available immediately after the procedure. After the anesthesia has worn off, the gastroenterologist will share results with the person or a designee. Biopsy results take a few days to come back.

## What are the risks of colonoscopy?

The risks of colonoscopy include

- bleeding.
- perforation—a hole or tear in the lining of the colon.
- diverticulitis—a condition that occurs when small pouches in the colon, called diverticula, become irritated, swollen, and infected. Read more in *Diverticulosis and Diverticulitis* at [www.digestive.niddk.nih.gov](http://www.digestive.niddk.nih.gov).
- cardiovascular events, such as a heart attack, low blood pressure, or the heart skipping beats or beating too fast or too slow.
- severe abdominal pain.
- death, although this risk is rare.

Bleeding and perforation are the most common complications from colonoscopy. Most cases of bleeding occur in people who have polyps removed. The gastroenterologist can treat bleeding that occurs during the colonoscopy right away. However, a person may have delayed bleeding up to 2 weeks after the test. The gastroenterologist diagnoses delayed bleeding with a repeat colonoscopy and treats it with an electrical probe or special medication. Perforation may need to be treated with surgery.

A study of screening colonoscopies found 2.1 serious complications per 1,000 procedures performed.<sup>2</sup>

### Seek Help for Emergency Symptoms

People who have any of the following symptoms after a colonoscopy should seek immediate medical attention:

- severe abdominal pain
- fever
- continued bloody bowel movements or continued bleeding from the anus
- dizziness
- weakness

<sup>2</sup>Ko CW, Riffle S, Michaels L, et al. Serious complications within 30 days of screening and surveillance colonoscopy are uncommon. *Clinical Gastroenterology and Hepatology*. 2010;8(2):166–173.

## Points to Remember

- Colonoscopy is a procedure that uses a long, flexible, narrow tube with a light and tiny camera on one end, called a colonoscope or scope, to look inside the rectum and entire colon.
- Colonoscopy can show irritated and swollen tissue, ulcers, and polyps—extra pieces of tissue that grow on the lining of the intestine.
- A colonoscopy is performed to help diagnose
  - changes in bowel habits
  - abdominal pain
  - bleeding from the anus
  - weight loss
- A gastroenterologist also performs a colonoscopy as a screening test for colon cancer.
- Preparation for a colonoscopy includes talking with a gastroenterologist about medical conditions the person has and medications the person is taking, arranging for a ride home after the procedure, and cleansing the bowel.
- The gastroenterologist will give written bowel prep instructions to follow at home. A gastroenterologist orders a bowel prep so that little to no stool is present inside the person's intestine.
- The gastroenterologist will not be able to see the colon clearly if the prep is incomplete.
- A gastroenterologist performs a colonoscopy at a hospital or an outpatient center. For the test, the person will lie on a table while the gastroenterologist inserts a colonoscope into the anus and slowly guides it through the rectum and into the colon.
- The gastroenterologist can remove polyps during colonoscopy and send them to a lab for testing. The gastroenterologist may also perform a biopsy, a procedure that involves taking a small piece of intestinal lining for examination with a microscope.
- Bleeding and perforation are the most common complications from colonoscopy.

## Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports basic and clinical research into many digestive disorders.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at [www.nih.gov/health/clinicaltrials](http://www.nih.gov/health/clinicaltrials). For information about current studies, visit [www.ClinicalTrials.gov](http://www.ClinicalTrials.gov).

## For More Information

Read more about other diagnostic tests in these publications at [www.digestive.niddk.nih.gov](http://www.digestive.niddk.nih.gov):

- *ERCP (Endoscopic Retrograde Cholangiopancreatography)*
- *Flexible Sigmoidoscopy*
- *Liver Biopsy*
- *Lower GI Series*
- *Upper GI Endoscopy*
- *Upper GI Series*
- *Virtual Colonoscopy*

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### **American Gastroenterological Association**

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### **National Cancer Institute**

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### **Society of American Gastrointestinal and Endoscopic Surgeons**

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You may also find additional information about this topic by visiting MedlinePlus at [www.medlineplus.gov](http://www.medlineplus.gov).

This publication may contain information about medications and, when taken as prescribed, the conditions they treat. When prepared, this publication included the most current information available. For updates or for questions about any medications, contact the U.S. Food and Drug Administration toll-free at 1-888-INFO-FDA (1-888-463-6332) or visit [www.fda.gov](http://www.fda.gov). Consult your health care provider 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 of 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. The NDDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about digestive diseases.

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