

COLORECTAL CANCER

prevention
& treatment

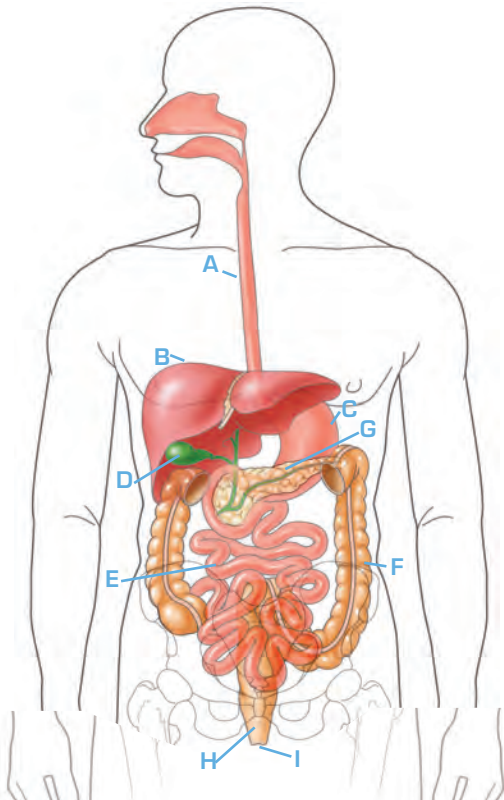
A patient's guide from your doctor and



Colorectal Cancer Basics

- Colorectal cancer is the second-leading cause of cancer deaths in the U.S.
- Men and women are at equal risk of developing colorectal cancer.
- Early detection of colorectal cancer leads to easier treatments and higher survival rates.
- More than one-third of colorectal cancer deaths could be avoided if all eligible individuals participated in regular screening.
- Colorectal cancer screening is safe and effective.

Your Digestive System



A. Esophagus

B. Liver

C. Stomach

D. Gallbladder

E. Small Intestine

F. Large Intestine

G. Pancreas

H. Rectum

I. Anus



To help you understand and manage your condition, the AGA Institute provides you with the following information, designed to give you some basic facts, to help you better understand your condition and to serve as a starting point for discussions with your doctor.

Your Colon

The colon is an important organ in your body's digestive system. The colon, also known as the large intestine, consists of a long, thick tube that:

- ▶ Absorbs water and minerals from digested food.
- ▶ Contains the rectum, which stores undigested solid waste.

Colorectal Cancer

Cancer of the colon and rectum — called colorectal cancer — occurs when a growth in the lining of the colon or rectum becomes malignant, or cancerous. It is the second-leading cause of cancer deaths in the U.S. However, if caught early, colorectal cancer can be cured. It's important for you to understand your risks for colorectal cancer, the symptoms of colorectal cancer and screening tests that can detect cancerous growths. With simple preventive steps, you can also reduce your risk of developing the disease.

Polyps

Colorectal cancer usually develops from pre-cancer polyps called adenomatous polyps. A polyp is a grape-like growth on the inside wall of the colon or rectum. Polyps grow slowly over many years. Most people do not develop polyps until after the age of 50 if they have an average risk for colorectal cancer (see below).

Some polyps become cancerous, others do not. In order to reduce the likelihood of colorectal cancer, it is important to get screened to find out if you have polyps and to have them removed if you do.

With regular colorectal cancer screening, more than one-third of colorectal cancer deaths could be avoided.

Colorectal Cancer Risk Factors

You may be at average or increased risk for colorectal cancer, depending on your age and family medical history.

Average Risk

You are at average risk for colorectal cancer if you:

- ▶ Are age 50 or older and have none of the following risk factors.

Increased Risk Factors

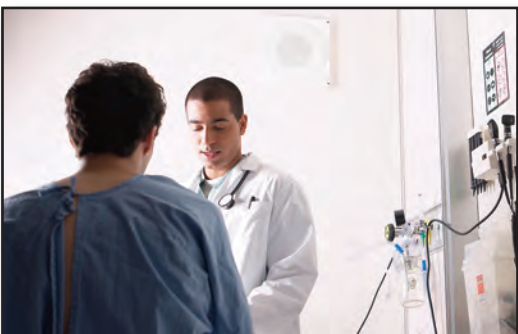
You are at increased risk for colorectal cancer if you have:

- ▶ Personal history of colorectal cancer or adenomatous polyps.
- ▶ Family history — one or more parents, siblings, or children — with colorectal cancer or adenomatous polyps.
- ▶ Family history of multiple cancers, involving the breast, ovary, uterus and other organs.
- ▶ Personal history of inflammatory bowel disease, such as ulcerative colitis or Crohn's disease.
- ▶ Inherited syndrome such as Familial Adenomatous Polyposis (FAP), which leads to hundreds of polyps in the colon or rectum during the teen years; generally one of these develops into cancer by age 30.
- ▶ Lynch Syndrome (Hereditary Non-Polyposis Colon Cancer), which is not characterized by a large number of polyps as a warning sign.

Gender Is Not a Risk Factor

There is a common misperception that women are less likely to get colorectal cancer than men, but men and women are equally affected by colorectal cancer.

In fact, colorectal cancer is the third-leading cause of cancer death in women, behind breast and lung cancer. More than 71,000 women are diagnosed with colorectal cancer each year and nearly 26,000 die from the disease.



Prevention

Along with regular screening, healthy lifestyle choices are the best current preventive measures against colorectal cancer. Here's how you can help reduce your risk:

- ▶ Eat more foods that are high in fiber — whole grains, fruits, vegetables.
- ▶ Eat more cruciferous vegetables — cabbage, broccoli, cauliflower, brussels sprouts.
- ▶ Increase calcium intake — low-fat milk, shellfish, salmon, calcium supplements with vitamin D.
- ▶ Decrease fats — oils, butter, red meats.
- ▶ Limit your intake of charcoal broiled foods and avoid salt-cured foods.
- ▶ Exercise regularly.
- ▶ Consider taking low daily doses of aspirin or other nonsteroidal anti-inflammatory drugs (it is important to discuss with your doctor first).

Symptoms of Colorectal Cancer

Colorectal cancer may begin with no symptoms at all. However, over time, there are a number of warning signs that can occur such as:

- ▶ Rectal bleeding.
- ▶ Blood in your stool (bright red, black or very dark).
- ▶ A temporary change in your bowel movements, especially in the shape of the stool (e.g., narrow like a pencil).
- ▶ Discomfort in having a bowel movement or the urge to move your bowels when there is no need.
- ▶ Cramping pain in your lower abdomen.
- ▶ Frequent gas pains.
- ▶ Weight loss without dieting.
- ▶ Constant fatigue.

What Should I Do if I Have These Symptoms?

Call your gastroenterologist and schedule an appointment. He or she will ask questions about your symptoms and determine the best diagnostic test for you.

Colorectal Cancer Screening

Colonoscopy

This procedure involves the examination of the colon by use of a long, flexible, lighted tube — called the colonoscope — through which the doctor can view the entire colon and rectum for polyps or cancer and during the same exam remove pre-cancerous polyps. It is the test most gastroenterologists recommend as the single best screening exam for colorectal cancer. It is the only method that combines both screening and prevention (by removal of pre-cancerous polyps). The colonoscope has a camera at the end, which can project images on a screen. If a polyp is found, it can be removed by a wire loop that is passed through the colonoscope and hooked around the base of the polyp. The doctor sends an electric current through the loop, which severs the polyp from the colon wall and pulls it out of the colon. The polyp is then sent to a laboratory to be tested to determine whether it is cancerous. This procedure requires patients to be sedated and may take approximately 30 minutes. A colonoscopy can be performed safely in an ambulatory surgical center, an outpatient office or a hospital setting. Patients do not have to be hospitalized. Some pressure may be felt from the instrument's movements during the exam and there may be some cramping afterwards. Occasionally traces of blood will be seen in the stool after the procedure if a biopsy was taken or a polyp was removed. If you have more than a tablespoon of blood, you should call your doctor.

- ▶ **When to have this test:** Recommended every 10 years after age 50 for average-risk individuals. Patients at higher risk for colorectal cancer, including those with a family history, or with polyps or other diseases, should talk to your gastroenterologist about appropriate screening intervals.
- ▶ **Test preparation:** Your doctor will prescribe a diet, often clear liquids, for the day prior to your examination. Laxatives and/or enemas will be required. For more information on colonoscopy, read the AGA Institute brochure on that topic in your gastroenterologist's office or visit www.gastro.org/patient.

Fecal Immunochemical Test (FIT)

FIT is a test that can detect blood in the stool with great accuracy. The test is available in a kit with which you can collect the stool samples at home and send them into a laboratory to test for blood coming from your colon. FIT is relatively easy to perform and inexpensive. It can only detect early cancers, not pre-cancerous polyps. You do not have to follow a special diet. If the FIT test is abnormal, you will require a regular colonoscopy for further evaluation.

- ▶ **When to have this test:** It is recommended annually for persons beginning at age 50. If the test is positive, your doctor may recommend a colonoscopy examination.
- ▶ **Test preparation:** FIT does not require a restricted diet.

Fecal Occult Blood Test (FOBT)

In this procedure, stool is tested in a laboratory for the presence of blood. The test is available in a kit with which you can collect the stool samples at home. You will need to follow a special diet when

collecting your samples. This test, which is relatively easy and inexpensive, is designed to test for early cancers, but it does not detect pre-cancerous polyps. If the FOBT is abnormal, you will require a regular colonoscopy for further evaluation.

- ▶ **When to have this test:** It is recommended annually for persons beginning at age 50. If the test is positive, your doctor may recommend a colonoscopy examination.
- ▶ **Test preparation:** Avoid these items in your diet for two days prior to the test as they may affect the test results:
 - Cauliflower
 - Cabbage
 - Horseradish
 - Radishes
 - Turnips
 - Red meat
 - Vitamin C supplements
 - Foods containing iron
 - Aspirin, which can irritate the stomach

Sigmoidoscopy

Sigmoidoscopy is a test during which a doctor uses a short, flexible, lighted tube to check the rectum and the lower end of the colon for polyps and cancer. If a polyp or abnormality is found, you may require a regular colonoscopy for further evaluation. This test can be performed in a doctor's office and does not require anesthesia or sedation. You will need to take a cleansing enema prior to the procedure. Insertion of the flexible tube may be somewhat uncomfortable and some cramping may occur during the procedure, which takes about 10 minutes. After the test, there may be some mild abdominal gas pains. If the doctor took a biopsy, some traces of blood may be in the stool for a few days after the procedure.

- ▶ **When to have this test:** This test is recommended every five years beginning at age 50 unless colonoscopies are being done.
- ▶ **Test preparation:** One or two mild enemas are given prior to the test.

Computed Tomographic (CT) Colonography

This test involves an examination of your colon and rectum using a CT scanner to take pictures. A computer is used to combine the pictures creating both 2- and 3-dimensional views that allow a specially trained physician to "fly through" images of your colon and rectum to look for polyps and cancer. This procedure takes approximately 10 minutes and does not require sedation. You will need to take a preparation to cleanse your colon, much the same as for a regular colonoscopy, prior to the test. At the beginning of the test, a small flexible tube will be inserted into your rectum to introduce air into your colon. A CT colonography can be performed in an outpatient imaging center, an outpatient office or a hospital setting. If a polyp or other abnormality is discovered during the CT colonography, you will require a regular colonoscopy to biopsy or remove the abnormality.

- ▶ **When to have this test:** Recommended every 5 years for average risk individuals. Patients at higher risk for colorectal cancer, including those with a family history, or with polyps or other diseases, should talk to your gastroenterologist about whether a regular colonoscopy may be a more appropriate screening method.

- ▶ **Test preparation:** Your doctor will prescribe a diet, often clear liquids, for the day prior to your examination. Laxatives and/or enemas will be required just like the preparation for a regular colonoscopy.

Barium Enema

The procedure is an X-ray examination of the entire colon and rectum. It is an exam that is rarely performed any more because more accurate and comfortable tests are available. An enema is first given and then a soft, flexible tube is inserted into the rectum. A small amount of liquid called barium is inserted into the tube and is then removed. Air is injected into the colon. Special X-rays follow the flow of the barium in the colon and outline any lumps, polyps or abnormalities. A person may feel some cramping and a strong urge to move their bowels during the test. There may be some white or pinkish material in the bowel movements after the test. If a polyp or other abnormality is discovered on barium enema, you will require a regular colonoscopy to biopsy or remove the abnormality.

- ▶ **When to have this test:** This test is part of the available options for screening, but is rarely performed.
- ▶ **Test preparation:** A full 24 hours before the test, begin the special diet your doctor has prescribed. Eat or drink only clear liquids after midnight and during the morning before the test. Your doctor will prescribe a laxative to be taken the night before. The morning of the procedure, special enemas may be prescribed by your doctor.

Stool DNA (sDNA)

In this procedure, stool is tested in a laboratory to look for genetic DNA mutations. Colorectal cancer cells that contain altered DNA are shed into the large bowel and passed into the stool. The test is available using a special kit with which you collect the stool sample at home. You must have access to a working freezer as the stool specimen will need to be submitted back to the lab along with a specially designed ice pack. If the sDNA test is abnormal, you will require a regular colonoscopy for further evaluation.

- ▶ **When to have this test:** All people over age 50 should be tested for colorectal cancer. If the test is positive, your doctor may recommend a colonoscopy examination. The screening interval for sDNA is unknown at this time and most insurance does not cover this test.
- ▶ **Test preparation:** Since sDNA detects DNA in stool, preparation does not require a restricted diet.

Digital Rectal Examination

A FOBT or FIT done during a digital rectal exam in the doctor's office is not adequate for screening.

Talk to your gastroenterologist to make an informed decision about which screening tests are right for you.

Treatment

Surgery is generally required for patients with colorectal cancer. The type of surgery and follow-up treatment will depend on the stage of the cancer. Here is a look at each stage of colon and rectal cancer and the treatment for each:

Stage 0

- ▶ **Extent** — This stage is called *carcinoma in situ*, when the cancer is confined to the inner layer of the colon/rectal lining.
- ▶ **Treatment** — Removal of the cancerous tissue or polyp during colonoscopy may be all that is needed. If surgery is needed, there is no treatment after.

Stage I:

- ▶ **Extent** — In this stage, the cancer has grown through the inner colon/rectal lining, but has not penetrated beyond this lining to adjoining tissues.
- ▶ **Treatment** — No further treatment is generally recommended after surgery for this stage.

Stage II:

- ▶ **Extent** — At this point, the cancer has penetrated the colon/rectal wall, but has not spread to nearby lymph nodes.
- ▶ **Treatment** — Generally there is no treatment after surgery in colon cancer cases; however, in some cases, chemotherapy may be offered. In rectal cancer cases, treatment often includes chemotherapy and radiation.

Stage III:

- ▶ **Extent** — In this stage, the cancer has spread to nearby lymph nodes, but no further.
- ▶ **Treatment** — Chemotherapy is recommended after surgery for colon cancer. For cancer located in the rectum, chemotherapy and radiation are usually combined with rectal cancer surgery and may be given before or after the operation.

Stage IV:

- ▶ **Extent** — At its most advanced stage, the cancer has spread to other organs in the body. With colon cancer, the metastasis (spread) has moved to the liver, lungs and brain. With rectal cancer, the metastasis usually has moved to the liver.
- ▶ **Treatment** — Treatment after either colon or rectal cancer surgery involves chemotherapy, radiation therapy or both. The goal for rectal cancer surgery is not a cure, but rather to relieve symptoms and prevent blockage of the rectum.

Go to www.gastro.org/patient
for more information on digestive
health and tests performed by
gastroenterologists and to find an
AGA member physician in your area.

The American Gastroenterological Association (AGA) is dedicated to the mission of advancing the science and practice of gastroenterology. Founded in 1897, the AGA is one of the oldest medical-specialty societies in the U.S. Our 16,000 members include physicians and scientists who research, diagnose and treat disorders of the gastrointestinal tract and liver. The AGA Institute runs the organization's practice, research and educational programs.

The content in the series of AGA Institute patient education brochures was reviewed by the following gastroenterologists:

John I. Allen, MD, MBA, AGAF

*Minnesota Gastroenterology
Chair, AGA Clinical Practice & Quality
Management Committee*

Harry R. Aslanian, MD

Yale University School of Medicine

Stephen J. Bickston, MD, AGAF

University of Virginia Health System

Joel V. Brill, MD, AGAF

*Predictive Health LLC
Chair, AGA Practice Management
& Economics Committee*

Marcia I. Canto, MD, MHS

Johns Hopkins University

Richard Davis, Jr. PA-C

University of Florida College of Medicine

Mark H. DeLegge, MD, AGAF

Medical University of South Carolina

Kenneth DeVault, MD

Mayo Clinic, Jacksonville

Stephen W. Hiltz, MD, MBA, AGAF

TriState Gastroenterology

Lawrence R.

Kosinski, MD, MBA, AGAF

Elgin Gastroenterology, S.C.

Linda A. Lee, MD, AGAF

Johns Hopkins School of Medicine

Stephen A. McClave, MD, AGAF

University of Louisville School of Medicine

Kimberley Persley, MD

Texas Digestive Disease Consultants

John Schaffner, MD

Mayo Clinic, Rochester

Joanne A.P. Wilson, MD, FACP, AGAF

Duke University Medical Center

Cynthia M. Yoshida, MD, AGAF

University of Virginia Health System

Atif Zaman, MD, MPH

Oregon Health and Science University



AGAINSTITUTE
AGA Education, Practice and Research



The Digestive Health Initiative® (DHI) is an AGA Institute initiative that offers educational programs on digestive disorders for individuals who are affected by a digestive disease, in an effort to educate the larger health-care community.

This brochure was produced by the AGA Institute and funded by a grant from Takeda Pharmaceuticals North America, Inc.



For more information about digestive diseases,
please visit the AGA Web site at www.gastro.org.

The AGA Institute offers the information in these brochures for educational purposes to provide accurate and helpful health information for the general public. This information is not intended as medical advice and should not be used for diagnosis. The information in these brochures should not be considered a replacement for consultation with a health-care professional. If you have questions or concerns about the information found in these brochures, please contact your health-care provider. We encourage you to use the information and questions in these brochures with your health-care provider(s) as a way of creating a dialogue and partnership about your condition and your treatment.