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Colorectal Cancer Early Detection, Diagnosis, and Staging

Know the signs and symptoms of colorectal cancer. Find out how colorectal cancer is tested for, diagnosed, and staged.

Detection and Diagnosis

Finding cancer early, when it's small and hasn't spread, often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that's not always the case.

- [Can Colorectal Polyps and Cancer Be Found Early?](#)
- [American Cancer Society Guideline for Colorectal Cancer Screening](#)
- [Colorectal Cancer Screening Tests](#)
- [Insurance Coverage for Colorectal Cancer Screening](#)
- [Colorectal Cancer Signs and Symptoms](#)
- [Tests to Diagnose and Stage Colorectal Cancer](#)
- [Understanding Your Pathology Report](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- [Colorectal Cancer Stages](#)
- [Survival Rates for Colorectal Cancer](#)

Questions to Ask About Colorectal Cancer

Here are some questions you can ask your cancer care team to help you better understand your cancer diagnosis and treatment options.

- [Questions to Ask About Colorectal Cancer](#)

Can Colorectal Polyps and Cancer Be Found Early?

Screening is the process of looking for cancer or precancer in people who have no symptoms of the disease.

[Screening for colorectal cancer](#)

health insurance coverage issues.

American Cancer Society Guideline for Colorectal Cancer Screening

- [For people at average risk](#)
- [Test options for colorectal cancer screening](#)
- [For people at increased or high risk](#)

For people at average risk

The American Cancer Society recommends that people at average risk* of colorectal cancer **start regular screening at age 45**. This can be done either with a sensitive test that looks for signs of cancer in a person's stool (a stool-based test), or with an exam that looks at the colon and rectum (a visual exam). These options are listed below.

People who are in good health and with a life expectancy of more than 10 years should continue regular colorectal cancer screening through **age 75**.

For people **ages 76 through 85**, the decision to be screened should be based on a person's preferences, life expectancy, overall health, and prior screening history.

People

- Highly sensitive guaiac-based fecal occult blood test (gFOBT) every year
- Multi-targeted stool DNA test with fecal immunochemical testing (MT-sDNA or sDNA-FIT or FIT-DNA)) every 3 years

Visual (structural) exams of the colon and rectum

- Colonoscopy every 10 years

medical organizations, such as the US Multi-Society Task Force on Colorectal Cancer (USMSTF), do put out such guidelines. These guidelines are complex and are best reviewed with your health care provider. In general, these guidelines put people into several groups (although the details depend on each person's specific risk factors).

People at increased risk for colorectal cancer

People with one or more family members who have had colon or rectal cancer

Screening recommendations for these people depend on who in the family had cancer and how old they were when it was diagnosed. Some people with a family history will be able to follow the recommendations for average-risk adults, but others might need to get a colonoscopy (and not any other type of test) more often, and possibly starting before age 45.

People who have had certain types of polyps removed during a colonoscopy

Most of these people will need to get a colonoscopy again after 3 years, but some people might need to get one earlier (or later) than 3 years, depending on the type, size, and number of polyps.

People who have had colon or rectal cancer

Most of these people will need to start having colonoscopies regularly about 1 year after surgery to remove the cancer. Other procedures like MRI or proctoscopy with ultrasound might also be recommended for some people with rectal cancer, depending on the type of surgery they had.

People who have had radiation to the abdomen (belly) or pelvic area to treat a prior cancer

Most of these people will need to start having colorectal screening (colonoscopy or stool-based testing) at an earlier age (depending on how old they were when they got the radiation). Screening often begins 10 years after the radiation was given or at age 35, whichever comes last. These people might also need to be screened more often than normal (such as at least every 3 to 5 years).

People at high risk for colorectal cancer

People with inflammatory bowel disease (Crohn's disease or ulcerative colitis)

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Colorectal Cancer Screening Tests

Several tests can be used to screen for colorectal cancer (see [American Cancer Society Guideline for Colorectal Cancer Screening](#)). **The most important thing is to get screened, no matter which test you choose.**

- [Test options for colorectal cancer screening](#)
- [Blood-based tests](#)
- [Stool-based tests](#)
- [Visual \(structural\) exams](#)
- [What are some of the benefits and limits of colorectal cancer screening tests?](#)

Test options for colorectal cancer screening

There are 3 main types of colorectal cancer screening tests :

- **Blood-based tests:** These tests check a person's blood for signs of colorectal cancer.
- **Stool-based tests:** These tests check the stool (feces) for signs of colon cancer. These tests are less invasive and easier to have done, but they need to be done more often.
- **Visual (structural) exams:** These tests look at the structure of the colon and

cancer cells after cancer has developed.

- A colonoscopy can be used for both screening and preventing colon cancer. It can find colon cancer before a person has symptoms (screening) and can also remove suspicious looking polyps before they develop into colon cancer (prevention).

For more detailed information on the differences between these procedures, see the table below.

Stool-based tests

These tests look at the stool (feces) for possible signs of colorectal cancer or polyps. These tests are typically done at home, so many people find them easier than tests like a colonoscopy. But these tests need to be done more often. And if the result from one of these stool tests is positive (abnormal), you will still need a colonoscopy to see if you have cancer.

Fecal immunochemical test (FIT)

One way to test for colorectal cancer is to look for occult (hidden) blood in the stool. The idea behind this type of test is that blood vessels in larger colorectal polyps or cancers are often fragile and easily damaged by the passage of stool. The damaged vessels usually bleed into the colon or rectum, but only rarely is there enough bleeding for blood to be seen by the naked eye in the stool.

The fecal immunochemical test (FIT) checks for hidden blood in the stool from the lower intestines. This test must be done every year. It can be done in the privacy of your own home.

Unlike the guaiac-based fecal occult blood test (gFOBT, see below), there are no drug or dietary restrictions before the FIT test (because vitamins and foods do not affect the test) and collecting the samples may be easier. This test is also less likely to react to bleeding from the upper parts of the digestive tract, such as the stomach.

Collecting the samples: Your health care provider will give you the supplies you need for testing. Have all of your supplies ready and in one place. Supplies typically include a test kit, test cards or tubes, long brushes or other collecting devices, waste bags, and a mailing envelope. The kit will give you detailed instructions on how to collect the samples. **Be sure to follow the instructions that come with your kit, as different kits might have different instructions.** If you have any questions about how to use your kit, contact your health care provider.

samples, return them (generally within 24 hours) as instructed in the kit.

If the test result is positive (that is, if hidden blood is found), a colonoscopy will need to be done to investigate further. Although blood in the stool can be from cancer or polyps, it can also be from other causes, such as ulcers, hemorrhoids, or other conditions.

Guaiaic-based fecal occult blood test (gFOBT)

The guaiac-based fecal occult blood test (gFOBT) finds occult (hidden) blood in the stool through a chemical reaction. It works differently from the fecal immunochemical test (FIT), but like the FIT, the gFOBT can't tell if the blood is from the colon or from other parts of the digestive tract (such as the stomach).

This test must be done every year, unlike some other tests (like the visual tests described below). This test can be done in the privacy of your own home. It checks more than one stool sample.

If gFOBT is chosen for colorectal screening, the American Cancer Society recommends the highly sensitive versions of this test be used.

Before the test: Some foods or drugs can affect the results of this test, so you may be instructed to avoid the following before this test:

- Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil), naproxen (Aleve), or aspirin, for 7 days before testing. (They can cause bleeding, which can lead to a false-positive result.) **Note:** People should try to avoid taking NSAIDs for minor aches prior to the test. But if you take these medicines daily for heart problems or other conditions, don't stop them for this test without talking to your health care provider first.
- Vitamin C more than 250 mg a day from either supplements or citrus fruits and juices for 3 to 7 days before testing. (This can affect the chemicals in the test and make the result negative, even if blood is present.)
- Red meats (beef, lamb, or liver) for 3 days before testing. (Components of blood in the meat may cause a positive test result.)

Some people who are given the test never do it or don't return it because they worry that something they ate may affect the test. Even if you are concerned that something you ate may alter the test, the most important thing is to get the test done.

Collecting the samples: You will get a kit with instructions from your health care

provider's office or clinic. The kit will explain how to take stool samples at home (usually samples from 3 separate bowel movements are smeared onto small paper cards). The kit is then returned to the doctor's office or medical lab for testing.

When doing this test, have all of your supplies ready and in one place. Supplies typically include a test kit, test cards, either a brush or wooden applicator, and a mailing envelope. The kit will give you detailed instructions on how to collect the stool samples. **Be sure to follow the instructions that come with your kit, as different kits might have different instructions.** If you have any questions about how to use your kit, contact your health care provider's office or clinic. Once you have collected the samples, return them as instructed in the kit.

If the test result is positive (if hidden blood is found), a colonoscopy will be needed to find the reason for the bleeding.

An FOBT done during a digital rectal exam in the doctor's office (which only checks one stool sample) is not enough for proper screening, because it is likely to miss colorectal cancers.

Stool DNA test

Multitargeted stool DNA test with fecal immunochemical testing (MT-sDNA or FIT-DNA or sDNA-FIT) looks for certain abnormal sections of DNA from cancer or polyp cells and also for occult (hidden) blood. Colorectal cancer or polyp cells often have DNA mutations (changes) in certain genes. Cells with these mutations often get into the stool, where tests may be able to find them. Cologuard, the only test currently available in the United States, tests for both DNA changes and blood in the stool (FIT).

This test should be done every 3 years and can be done in the privacy of your own

done.

What is the difference between screening with a stool DNA test and a colonoscopy?

- A stool DNA test (Cologuard) can detect the presence of blood or abnormal DNA in the stool, which may be caused by cancer or precancerous polyps that could turn into cancer. A stool DNA test is a screening test (not used for prevention) because it can find cancer cells after it has developed.
- A colonoscopy can be used for both screening and prevention of colon cancer. It can find colon cancer in a person who has no symptoms (screening) and can also remove suspicious looking polyps before they develop into colon cancer (prevention).

For more detailed information on the differences between these procedures, see the table below.

Visual (structural) exams

These tests look at the inside of the colon and rectum for any abnormal areas that might be cancer or polyps. These tests can be done less often than stool-based tests, but they require more preparation ahead of time, and can have some risks not seen with stool-based tests.

Colonoscopy

For this test, the doctor looks at the entire length of the colon and rectum with a colonoscope, a flexible tube about the width of a finger with a light and small video camera on the end. It's put in through the anus and into the rectum and colon. Special instruments can be passed through the colonoscope to biopsy (take a sample) or remove any suspicious-looking areas such as polyps, if needed.

To see a visual animation of a colonoscopy as well as learn more details about how to prepare for the procedure, how the procedure is done, and potential side effects, see [Colonoscopy¹](#).

This test is different from a **virtual colonoscopy** (also known as

CT colonography (virtual colonoscopy)

This test is an advanced type of **computed tomography (CT) scan** of the colon and rectum that can show abnormal areas, like polyps or cancer. Special computer programs use both x-rays and a CT scan to make 3-dimensional pictures of the inside of the colon and rectum. It does not require sedation (medicine to sleep) or a scope to be put into the rectum or colon. A small catheter is placed into your rectum to fill your colon with air or carbon dioxide. This allows for clearer CT pictures.

This test may be useful for some people who can't have or don't want to have a more invasive test such as a colonoscopy. It can be done fairly quickly, but it requires the same type of bowel prep as a colonoscopy.

If polyps or other suspicious areas are seen on this test, a colonoscopy will still be needed to remove them or to explore the area fully.

Before the test: It's important that the colon and rectum are emptied before this test to get the best images. You'll probably be told to follow the same instructions to clean out the intestines as someone getting a colonoscopy.

During the test: This test is done in a special room with a CT scanner. It takes about 15 minutes. You'll be asked to lie on a narrow table that's part of the CT scanner, and will have a small, flexible tube put into your rectum. Air is pumped through the tube into the colon and rectum to expand them to provide better pictures. The table then slides into the CT scanner, and you'll be asked to hold your breath for a few seconds while the scan is done. You'll likely have 2 scans: 1 while you're lying on your back and 1 while you're on your stomach or side.

Possible side effects and complications: There are usually few side effects after this test. You may feel bloated or have cramps because of the air in the colon and rectum, but this should go away once the air passes from the body. There's a very small risk that inflating the colon with air could injure or puncture it, but this risk is thought to be much less than with colonoscopy. Like other types of CT scans, this test also exposes you to a small amount of radiation.

Sigmoidoscopy

A sigmoidoscopy is similar to a colonoscopy except it doesn't examine the entire colon. A sigmoidoscope (a flexible, lighted tube about the thickness of a finger with a small video camera on the end) is put in through the anus, into the rectum, and then moved into the lower part of the colon. But the sigmoidoscope is only about 2 feet (60cm) long, so the doctor can only see the entire rectum and less than half of the colon. Images

from the scope are seen on a video screen so the doctor can find and possibly remove any abnormal areas.

This test is not widely used as a screening tool for colorectal cancer in the United States. This is because a sigmoidoscopy looks only at the lower portion (left side) of your colon, while at least 40% of colorectal cancers start in the upper portion (right side) of the colon.

Before the test: The colon and rectum should be emptied before this test to get the best pictures. You'll probably be told to follow similar instructions to clean out the intestines as someone getting a colonoscopy.

During the test: A sigmoidoscopy usually takes about 10 to 20 minutes. Most people don't need to be sedated for this test, but this might be an option you can discuss with your doctor. Sedation may make the test less uncomfortable, but you'll need some time to recover from it and you'll need someone with you to take you home after the test.

You'll probably be asked to lie on a table on your left side with your knees pulled up near your chest. Before the test, your doctor may put a gloved, lubricated finger into your rectum to examine it. The sigmoidoscope is first lubricated to make it easier to put into the rectum. Air is then pumped into the colon and rectum through the sigmoidoscope so the doctor can see the inner lining better. This may cause some discomfort, but it should not be painful. Be sure to let your doctor know if you feel pain during the procedure.

If you are not sedated during the procedure, you might feel pressure and slight cramping in your lower belly. To ease discomfort and the urge to have a bowel movement, it may help to breathe deeply and slowly through your mouth. You'll feel better after the test once the air leaves your bowels.

If any polyps are found during the test, the doctor may remove them with a small instrument passed through the scope. The polyps will be looked at in the lab. **If a pre-cancerous polyp (an adenoma) or colorectal cancer is found, you'll need to have a colonoscopy later to look for polyps or cancer in the rest of the colon.**

Possible complications and side effects: You might see a small amount of blood in your bowel movements for a day or 2 after the test. More serious bleeding and puncture of the colon or rectum are possible, but they are not common.

What are some of the benefits and limits of colorectal cancer screening tests?

Test	Benefits	Limits

	<p>medication changes needed</p> <p>Sampling done at home</p>	<p>Colonoscopy will be needed if results are abnormal</p>
Colonoscopy	<p>Can usually look at the entire colon</p> <p>Can biopsy and remove polyps</p> <p>Done every 10 years</p> <p>Can help find some other diseases</p>	<p>Full bowel prep needed</p> <p>Costs more on a one-time basis than other forms of testing</p> <p>Sedation is usually needed, in which case you will need someone to drive you home</p> <p>You may miss a day of work</p> <p>Small risk of bleeding, bowel tears, or infection</p>
CT colonography (virtual colonoscopy)	<p>Fairly quick and safe</p> <p>Can usually see the entire colon</p> <p>Done every 5 years</p> <p>No sedation needed</p>	<p>Can miss small polyps</p> <p>Full bowel prep needed</p> <p>Some false-positive test results</p> <p>Exposure to a small amount of radiation</p> <p>Can't remove polyps during testing</p> <p>Colonoscopy will be needed if results are abnormal</p>
Sigmoidoscopy	<p>Fairly quick and safe</p> <p>Sedation usually not used</p> <p>Done every 5 years</p>	<p>Not widely used as a screening test</p> <p>Bowel prep may still be requested</p> <p>Looks at only about a third of the colon</p> <p>Can miss small polyps and/or colorectal cancer</p> <p>Can't remove all polyps</p> <p>May be some discomfort</p>

Insurance Coverage for Colorectal Cancer Screening

The American Cancer Society (ACS) believes that all people should have access to cancer screenings, without regard to health insurance coverage.

- [People should have the option of screening](#)
- [Federal law](#)
- [Private health insurance coverage for colorectal cancer screening](#)
- [Medicare coverage for colorectal cancer screening](#)
- [Medicaid coverage for colorectal cancer screening](#)

People should have the option of screening

Limitations on coverage should not keep someone from the benefits of early detection of cancer. ACS supports policies that give all people access to and coverage of early detection tests for cancer. Such policies should be age- and risk-appropriate and based on current scientific evidence as outlined in the [American Cancer Society Guideline for Colorectal Cancer Screening](#).

Federal law

The [Affordable Care Act](#)¹ (ACA) requires both private insurers and Medicare to cover the costs of colorectal cancer screening tests, because these tests are recommended by the United States Preventive Services Task Force (USPSTF). The law stipulates that there should be no out-of-pocket costs for patients, such as co-pays or deductibles, for these screening tests. But the definition of a “screening” test can sometimes be confusing, as discussed below.

The USPSTF currently recommends that people at average risk should start colorectal cancer screening at age 45.

Private health insurance coverage for colorectal cancer screening

The Affordable Care Act requires health plans that started on or after September 23, 2010, to cover [colorectal cancer screening tests](#), which includes a range of test options. In most cases there should be no out-of-pocket costs (such as co-pays or deductibles) for these tests.

For people who choose to be screened with colonoscopy

Many people choose to be screened with colonoscopy. While it might not be right for everyone, it can have some advantages, such as only needing to be done once every 10 years. And if the doctor sees something abnormal during the colonoscopy, it can be biopsied or removed at that time, most likely without needing any other test.

Although many private insurance plans cover the costs of colonoscopy as a screening test, you still might be charged for some services. Review your health insurance plan for specific details, including if your doctor is on your insurance company's list of "in-network" providers. If the doctor is not in the plan's network, you may have to pay more out-of-pocket. **Call your insurer if you have a question or aren't sure about something.**

Soon after the ACA became law, some insurance companies considered a colonoscopy to no longer be just a "screening" test if a polyp was removed during the procedure. It would then be a "diagnostic" test, and would therefore be subject to co-pays and

Medicare coverage for colorectal cancer screening

[Medicare](#)² covers an initial preventive physical exam for all new Medicare beneficiaries. It must be done within one year of enrolling in Medicare. The “Welcome to Medicare” physical includes referrals for preventive services already covered under Medicare, including colorectal cancer screening tests.

If you’ve had Medicare Part B for longer than 12 months, a yearly “wellness” visit is covered without any cost. This visit is used to develop or update a personalized prevention plan to prevent disease and disease prevention. Your doctor will use this visit to develop or update a personalized prevention plan to prevent disease and disease prevention.

colonography).

If you have questions about your costs, including deductibles or co-pays, it's best to speak with your insurer.

What would someone on Medicare expect to pay for a colorectal cancer screening test?

- **FOBT/FIT:** Covered at no cost for those age 45 or older* (no co-insurance or Part B deductible)
- **Stool DNA test (Cologuard):** Covered at no cost* for those age 45 to 85 as long as they are not at increased risk of colorectal cancer and don't have symptoms of colorectal cancer (no co-insurance or Part B deductible)

It's important to know that **if you have a positive result on a screening FOBT, FIT, or stool DNA lab test**, Medicare will cover the cost of a follow-on screening colonoscopy. You will not have to pay for this test as long as your doctor or other qualified health care provider accepts assignment. However, if a polyp or other tissue is found and removed during the follow-up screening colonoscopy, you may have to pay 15% of the Medicare-approved amount for your doctor's services.

- **Colonoscopy:** Covered at no cost* at any age (no co-insurance, co-payment, or Part B deductible) when the test is done for screening. **Note:** If the test results in a biopsy or removal of a growth, it's no longer a "screening" test, and you will be charged the 15% co-insurance and/or a co-pay (but you don't have to pay the deductible).
- **Flexible sigmoidoscopy:** Covered at no cost* (no co-insurance, co-payment, or Part B deductible) when the test is done for screening. **Note:** If the test results in a biopsy or removal of a growth, it's no longer a "screening" test, and you will be charged the 15% co-insurance and/or a co-pay (but you don't have to pay the Part B deductible).
- **Double-contrast barium enema:** You pay 20% of the Medicare-approved amount for the doctor services. If the test is done in an outpatient hospital department or ambulatory surgical center, you also pay the hospital co-payment (but you don't have to pay the Part B deductible).

If you're getting a screening colonoscopy (or flexible sigmoidoscopy), be sure to find whether you might have to pay for any related charges. This can help you avoid surprise costs.

- Ask how much you will have to pay if a polyp is removed or a biopsy is done. You may have a co-pay 15% of the Medicare-approved amount for the doctor's services.
- You may also have to pay for the bowel prep kit unless your Medicare Part D or Medicare Advantage plan covers the cost.
- Depending on where your colonoscopy is done, you may have to pay 15% co-insurance for a facility fee.

**This service is covered at no cost as long as the doctor accepts assignment (the amount Medicare pays as the full payment). Doctors that do not accept assignment are required to tell you up front.*

Medicaid coverage for colorectal cancer screening

States are authorized to cover colorectal screening under their Medicaid programs. But unlike Medicare, there's no federal assurance that all state Medicaid programs must cover colorectal cancer screening in people without symptoms. Medicaid coverage for colorectal cancer screening varies by state. Some states cover fecal occult blood testing (FOBT), while others cover colorectal cancer screening if a doctor determines the test is medically necessary. In some states, coverage varies according to which Medicaid managed care plan a person is enrolled in.

Hyperlinks

1. www.cancer.org/cancer/financial-insurance-matters/health-insurance-laws/the-health-care-law.html
www.cancer.org/cancer/financial-insurance-matters/understanding-health-insurance/government-funded-programs/medicare-medicare/medicare-coverage-
-

Colorectal Cancer Signs and Symptoms

the blood loss can build up and can lead to low red blood cell counts (anemia). Sometimes the first sign of colorectal cancer is a blood test showing a low red blood cell count.

Signs of colorectal cancer that has spread

Some people may have signs that the cancer has spread to the liver with a large liver felt on exam, jaundice (yellowing of the skin or whites of the eyes), or trouble breathing from cancer spread to the lungs.

Do colon polyps cause symptoms?

Most people with polyps will not have any symptoms. However, some people may have symptoms from polyps, such as:

- Bleeding from the rectum
- Change in stool color, either red or black
- Change in bowel movement, either prolonged constipation or diarrhea
- Low red blood cell count due to low iron (iron deficiency anemia)
- Abdominal (belly) pain

These symptoms can also be due to other causes, such as foods, medicines, or other medical conditions. If these symptoms are present, you should discuss further with your doctor.

If you have signs or symptoms

Many of these symptoms can be caused by conditions other than colorectal cancer, such as infection, hemorrhoids, or irritable bowel syndrome. Still, if you have any of these problems, it's important to see your doctor right away so the cause can be found and treated, if needed. See [Tests to Diagnose Colorectal Cancer](#).

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Tests to Diagnose and Stage Colorectal Cancer

If you have [symptoms](#) that might be from colorectal cancer, or if a [screening test](#) shows something abnormal, your doctor will recommend one or more of the exams and tests below to find the cause.

- [Medical history and physical exam](#)
- [Tests to look for blood in your stool](#)
- [Blood tests](#)
- [Diagnostic colonoscopy](#)
- [Proctoscopy](#)
- [Biopsy](#)
- [Imaging tests to look for colorectal cancer](#)

Medical history and physical exam

Your doctor will ask about your medical history to learn about possible risk factors, including your family history. You will also be asked if you're having any symptoms and, if so, when they started and how long you've had them.

As part of a physical exam, your doctor will feel your abdomen for masses or enlarged organs, and also examine the rest of your body. You may also have a digital rectal

obvious bleeding from your rectum or blood in your stools), a stool test might be recommended to check for blood that isn't visible to the naked eye (occult blood), which might be a sign of cancer. These types of tests – a fecal occult blood test (FOBT) or fecal immunochemical test (FIT) – are done at home and require you to collect 1 to 3 samples of stool from bowel movements. For more on how these tests are done, see [Colorectal Cancer Screening Tests](#).

(A stool blood test should **not** be the next test done if you've already had an abnormal screening test, in which case you should have a diagnostic colonoscopy, which is described below.)

Blood tests

Your doctor might also order certain blood tests to help determine if you have colorectal cancer. These tests also can be used to help monitor your disease if you've been diagnosed with cancer.

Complete blood count (CBC): This test measures the different types of cells in your blood. It can show if you have [anemia](#)¹ (too few red blood cells). Some people with colorectal cancer become anemic because the tumor has been bleeding for a long time.

Liver enzymes: You may also have a blood test to check your liver function, because colorectal cancer can spread to the liver.

Tumor markers: Colorectal cancer cells sometimes make substances called tumor markers that can be found in the blood. The most common tumor marker for colorectal cancer is the carcinoembryonic antigen (CEA).

Blood tests for this tumor marker can sometimes suggest someone might have colorectal cancer, but they can't be used alone to screen for or diagnose cancer. This is because tumor marker levels can sometimes be normal in someone who has cancer and can be abnormal for reasons other than cancer.

Tumor marker tests are used most often along with other tests to monitor patients who have already been diagnosed with colorectal cancer and are receiving treatment. They may help show how well treatment is working or provide an early warning that a cancer has returned.

Diagnostic colonoscopy

A diagnostic colonoscopy is just like a screening colonoscopy, but it's done because a

person is having symptoms, or because something abnormal was found on another type of screening test.

For this test, the doctor looks at the entire length of the colon and rectum with a colonoscope, a thin, flexible, lighted tube with a small video camera on the end. It is inserted through the anus and into the rectum and the colon. Special instruments can be passed through the colonoscope to biopsy or remove any suspicious-looking areas such as polyps, if needed.

options for treatment. For example, the cancer cells are typically tested for changes (mutations) in the **KRAS, NRAS, and BRAF genes**, as well as other gene and protein changes.

- If the cancer cells are *not* found to have a mutation(s) in the *KRAS*, *NRAS*, or *BRAF* genes, then treatment with drugs that target EGFR proteins might be helpful.
- If the cancer cells are found to have a mutation in the *BRAF* gene, known as **BRAF V600E**, then treatment with drugs that target the BRAF and EGFR proteins might be helpful.
- Some colorectal cancers that don't have mutations in the *KRAS*, *NRAS*, or *BRAF* genes might be tested to see if they make too much of the **HER2 protein**. For these cancers, treatment with drugs that target HER2 might be helpful.
- Colorectal cancers that don't have mutations in the *KRAS*, *NRAS*, or *BRAF* genes might also be tested for changes in the **NTRK genes**. These gene changes can lead to abnormal cell growth. For cancers that have one of these gene changes, drugs that target the proteins coded for by the *NTRK* genes might be helpful.

For more on the targeted drugs that might be used, see [Targeted Therapy Drugs for Colorectal Cancer](#)⁴.

MSI and MMR testing: Colorectal cancer cells are also typically tested to see if they have high numbers of gene changes called *microsatellite instability* (MSI). Testing might also be done to check for changes in any of the mismatch repair (MMR) genes (*MLH1*, *MSH2*, *MSH6*, and *PMS2*) or the proteins they encode. *EPCAM*, another gene, is also routinely checked.

Changes in MSI or in MMR genes (or both) are often seen in people with [Lynch syndrome](#)⁵ (HNPCC). Most colorectal cancers do not have high levels of MSI or changes in MMR genes. But most colorectal cancers that are linked to Lynch syndrome do.

There are 2 possible reasons to test colorectal cancers for MSI or for MMR gene changes:

- To determine if certain [immunotherapy](#)⁶ drugs might be options for treatment
- To identify people who should be tested for Lynch syndrome. People with Lynch syndrome are at higher risk for some other cancers, so they are typically advised to get other cancer screenings (for example, women with Lynch syndrome may need to be screened for [endometrial cancer](#)⁷). Also, if a person has Lynch syndrome, their relatives could have it as well, and may want to be tested for it.

For more on lab tests that might be done on biopsy samples, see [Colon and Rectal Pathology](#)⁸.

Imaging tests to look for colorectal cancer

Imaging tests use sound waves, x-rays, magnetic fields, or radioactive substances to create pictures of the inside of your body. Imaging tests may be done for a number of reasons, such as:

- To look at suspicious areas that might be cancer
- To learn how far cancer might have spread
- To help determine if treatment is working
- To look for signs of cancer coming back after treatment

Computed tomography (CT or CAT) scan

A [CT scan](#)⁹ uses x-rays to make detailed cross-sectional images of your body. This test can help tell if colorectal cancer has spread to nearby lymph nodes or to your liver, lungs, or other organs.

CT-guided needle biopsy: If a biopsy is needed to check for cancer spread, this test can also be used to guide a biopsy needle into the mass (lump) to get a tissue sample to check for cancer.

Ultrasound

[Ultrasound](#)¹⁰ uses sound waves and their echoes to create images of the inside of the body. A small microphone-like instrument called a **transducer** gives off sound waves and picks up the echoes as they bounce off organs. The echoes are converted by a computer into an image on a screen.

Abdominal ultrasound: For this exam, a technician moves the transducer along the skin over your abdomen. This type of ultrasound can be used to look for tumors in your liver, gallbladder, pancreas, or elsewhere in your abdomen, but it can't look for tumors of the colon or rectum.

Endorectal ultrasound: This test uses a special transducer that is inserted into the rectum. It is used to see how far through the rectal wall a cancer has grown and

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Libutti SK, Saltz LB, Willett CG, and Levine RA. Ch 62 - Cancer of the Colon. In: DeVita VT, Hellman S, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott-Williams & Wilkins; 2019.

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Colorectal Cancer Stages

describes how much cancer is in the body. It helps determine how serious the cancer is and [how best to treat it](#)¹



- The spread to nearby lymph nodes (**N**): Has the cancer spread to nearby lymph nodes?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant lymph nodes or distant organs such as the liver or lungs?

The system described below is the most recent AJCC system effective January 2018. It uses the **pathologic stage** (also called the **surgical stage**), which is determined by examining tissue removed during an operation. This is also known as **surgical staging**. This is likely to be more accurate than **clinical staging**, which takes into account the results of a [physical exam, biopsies, and imaging tests](#), done *before* surgery.

IIIA	M0	areas of fat near the lymph nodes but not the nodes themselves (N1c). It has not spread to distant sites (M0).
	OR	
	T1 N2a M0	The cancer has grown through the muscularis mucosa into the submucosa (T1). It has spread to 4 to 6 nearby lymph nodes (N2a). It has not spread to distant sites (M0).
IIIB	T3 or T4a N1/N1c M0	The cancer has grown into the outermost layers of the colon or rectum (T3) or through the wall of the colon or rectum (including the visceral peritoneum) (T4a) but has not reached nearby organs. It has spread to 1 to 3 nearby lymph nodes (N1a or N1b) or into areas of fat near the lymph nodes but not the nodes themselves (N1c). It has not spread to distant sites (M0).
	OR	
	T2 or T3 N2a M0	The cancer has grown into the muscularis propria (T2) or into the outermost layers of the colon or rectum (T3). It has spread to 4 to 6 nearby lymph nodes (N2a). It has not spread to distant sites (M0).
	OR	
	T1 or T2 N2b M0	The cancer has grown through the muscularis mucosa into the submucosa (T1), and it might also have grown into the muscularis propria (T2). It has spread to 7 or more nearby lymph nodes (N2b). It has not spread to distant sites (M0).
	OR	
IIIC	T4a N2a M0	The cancer has grown through the wall of the colon or rectum (including the visceral peritoneum) but has not reached nearby organs (T4a). It has spread to 4 to 6 nearby lymph nodes (N2a). It has not spread to distant sites (M0).
	OR	
	T3 or T4a N2b M0	The cancer has grown into the outermost layers of the colon or rectum (T3) or through the wall of the colon or rectum (including the visceral peritoneum) (T4a) but has not reached nearby organs. It has spread to 7 or more nearby lymph nodes (N2b). It has not spread to distant sites (M0).
	OR	

	OR	
	T4b N1 or N2 M0	The cancer has grown through the wall of the colon or rectum and is attached to or has grown into other nearby tissues or organs (T4b). It has spread to at least 1 nearby lymph node or into areas of fat near the lymph nodes (N1 or N2). It has not spread to distant sites (M0).
IVA	Any T Any N M1a	The cancer may or may not have grown through the wall of the colon or rectum (Any T). It might or might not have spread to nearby lymph nodes. (Any N). It has spread to 1 distant organ (such as the liver or lung) or distant set of lymph nodes, but not to distant parts of the peritoneum (the lining of the abdominal cavity) (M1a).
IVB	Any T Any N M1b	The cancer might or might not have grown through the wall of the colon or rectum (Any T). It might or might not have spread to nearby lymph nodes (Any N). It has spread to more than 1 distant organ (such as the liver or lung) or distant set of lymph nodes, but not to distant parts of the peritoneum (the lining of the abdominal cavity) (M1b).
IVC	Any T Any N M1c	The cancer might or might not have grown through the wall of the colon or rectum (Any T). It might or might not have spread to nearby lymph nodes (Any N). It has spread to distant parts of the peritoneum (the lining of the abdominal cavity), and may or may not have spread to distant organs or lymph nodes (M1c).

* The following additional categories are not listed in the table above:

- **TX:** Main tumor cannot be assessed due to lack of information.
- **T0:** No evidence of a primary tumor.
- **NX:** Regional lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/types/colon-rectal-cancer/treating.html
2. www.cancer.org/cancer/diagnosis-staging/staging.html

References

Survival Rates for Colorectal Cancer

Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for colon and rectal cancer in the United States, based on how far the cancer has spread. However, the SEER database does not group cancers by [AJCC TNM stages](#) (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the colon or rectum.
- **Regional:** The cancer has spread outside the colon or rectum to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body, such as the liver, lungs, or distant lymph nodes.

5-year relative survival rates for colon cancer

These numbers are based on people diagnosed with cancers of the colon between 2014 and 2020.

SEER stage	5-year relative survival rate
Localized	91%
Regional	73%
Distant	13%
All SEER stages combined	63%

5-year relative survival rates for rectal cancer

These numbers are based on people diagnosed with cancers of the rectum between 2014 and 2020.

SEER stage	5-year relative survival rate
Localized	90%
Regional	74%

It's important to have honest, open discussions with your cancer care team.

[When you're told you have colorectal cancer](#)

I can do to reduce these side effects?

- If considering having children in the future, does this treatment affect my fertility and family planning?
- How might treatment affect my daily activities? Can I still work full time?
- What are the chances that I can be cured of this cancer with these treatment options?
- What would my options be if the treatment doesn't work or if the cancer comes back (recurs) after treatment?
- What if I have transportation problems getting to and from treatment?

During treatment

Once treatment begins, you'll need to know what to expect and what to look for. Not all of these questions may apply to you, but asking the ones that do may be helpful.

- How will I know if the treatment is working?
- Is there anything I can do to help manage side effects?
- What symptoms or side effects should I tell you about right away?
- How can I reach you on nights, holidays, or weekends?
- Do I need to change what I eat during treatment?
- Are there any limits on what I can do?
- Can I exercise during treatment? If so, what kind should I do, and how often?
- Can you suggest a mental health professional I can see if I start to feel overwhelmed, depressed, or distressed?
- What if I need social support during treatment because my family lives far away?

After treatment

- Do I need a special diet after treatment?
- Are there any limits on what I can do?
- What symptoms should I watch for?
- What kind of exercise should I do now?
- What type of follow-up will I need after treatment?
- How often will I need to have follow-up exams and imaging tests?
- When should my next colonoscopy be done?
- Will I need any blood tests?

- How will we know if the cancer has come back? What should I watch for?
- What will my options be if the cancer comes back?

Along with these sample questions, be sure to write down some of your own. For instance, you might want more information about recovery times. Or you may want to ask about [clinical trials](#)² for which you may qualify.

Keep in mind that doctors aren't the only ones who can give you information. Other health care professionals, such as nurses and social workers, can answer some of your questions. To find out more about speaking with your health care team, see [The Doctor-Patient Relationship](#)³.

Hyperlinks

1. www.cancer.org/cancer/types/colon-rectal-cancer/treating.html
2. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html

www.cancer.org/cancer/managing-cancer/finding-care/the-doctor-pRG 0.7octj 0 g 1 0 0 1 100.34

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