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)

These people generally need to get colonoscopies (not any other type of test) starting at least 8 years after they are diagnosed with inflammatory bowel disease. Follow-up colonoscopies should be done every 1 to 3 years, depending on the person's risk factors for colorectal cancer and the findings on the previous colonoscopy.

People known or suspected to have certain genetic syndromes

These people generally need to have colonoscopies (not any other tests). Screening is often recommended to begin at a young age, possibly as early as the teenage years for some syndromes – and needs to be done much more frequently. Specifics depend on which genetic syndrome you have and other factors.

If you're at increased or high risk of colorectal cancer (or think you might be), talk to your health care provider to learn more. They can suggest the best screening option for you, as well as determine what type of screening schedule you should follow, based on your individual risk.

Hyperlinks

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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

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 rectum for any abnormal areas. They are done either with a scope (a tube-like instrument with a light and tiny video camera on the end) put into the rectum, or with special imaging (x-ray) tests.

These tests each have different risks and benefits (see the table below), and some of them might be better options for you than others.

If you choose to be screened with a test other than colonoscopy, any abnormal test result should be followed up with a timely colonoscopy.

Some of these tests might also be used if you have symptoms of colorectal cancer or other digestive diseases such as inflammatory bowel disease.

Blood-based tests

The 2 FDA-approved, blood-based tests for colorectal screening in people who are at average risk are Shield and Epi proColon. These tests look for possible signs of colorectal cancer or pre-cancerous polyps in a person's blood.

These tests are done in a clinic, where a sample of your blood will be collected and sent to a laboratory for testing. In the laboratory, your blood will be tested for certain DNA changes that could suggest the presence of cancer or pre-cancer cells. Medical insurance coverage may be different for each test.

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

- A blood DNA test is a screening test (not used for prevention) because it can find cancer cells after cancer has developed.

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 avoid2 0.62h.ngs 0ec.e

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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

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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 Colonoscopy[1].

This test is different from a **virtual colonoscopy** (also known as **CT colonography**), which is a type of CT scan[2].

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.

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
Blood-based test	No direct risk to the colon	Can miss many polyps and some cancers
	No bowel prep	Will need to have blood drawn in clinic
	No pre-test diet or medication changes	Medical insurance coverage may vary depending on which blood test is done

	needed	Colonoscopy will be needed if results are abnormal
Fecal immunochemical test (FIT)	No direct risk to the colon No bowel prep No pre-test diet or medication changes needed Sampling done at home Fairly inexpensive	Can miss many polyps and some cancers Can have false-positive test results

Fecal immunochemical test (FIT) No direct risk to the colon No bowel prep No pre-test diet or medication changes needed Sampling done at home Fairly inexpensive Can miss many polyps and some cancers Can have false-positive test results

	Can biopsy and remove polyps Done every 10 years Can help find some other diseases	other forms of testing

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Hyperlinks

1. www.cancer.org/cancer/diagnosis-staging/tests/endoscopy/colonoscopy.html
2. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ct-scan-for-cancer.html

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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

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 disability. Your health care provider should discuss a screening schedule (like a checklist) with you for preventive services you should have, including colorectal cancer screening.

What colorectal cancer screening tests does Medicare cover?

Medicare covers the following tests, generally starting at age 45:

Fecal occult blood test (FOBT) or **fecal immunochemical test (FIT)** once every 12 months.

Stool DNA test (Cologuard) every 3 years for people ages 45 to 85 who do not have symptoms of colorectal cancer and who do not have an increased risk of colorectal cancer.

Flexible sigmoidoscopy every 4 years, but not within 10 years of a previous colonoscopy.

Colonoscopy

- Once every 2 years for those at high risk (regardless of age)
- Once every 10 years for those who are at average risk
- Four years after a flexible sigmoidoscopy for those who are at average risk

Double-contrast barium enema if a doctor determines that its screening value is equal to or better than flexible sigmoidoscopy or colonoscopy:

- Once every 2 years for those who are at high risk
- Once every 4 years for those who are at average risk

At this time, Medicare does not cover the cost of **virtual colonoscopy** (CT

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 1 72 re0 0 rg /GS883 gs (Da follow-on 91.e ist)Tjals 95.35 239 1 0 0 1 95.35 287the7

- 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
2. www.cancer.org/cancer/financial-insurance-matters/understanding-health-insurance/government-funded-programs/medicare-medicaid/medicare-coverage-for-cancer-prevention-and-early-detection.html

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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

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_2_ing sucides po

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:

whether it has reached nearby organs or lymph nodes.

Intraoperative ultrasound: This exam is done during surgery. The transducer is placed directly against the surface of the liver, making this test very useful for detecting the spread of colorectal cancer to the liver. This allows the surgeon to biopsy the tumor, if one is found, while the patient is asleep.

Magnetic resonance imaging (MRI) scan

Like CT scans, MRI scans[11] show detailed images of soft tissues in the body. But MRI scans use radio waves and strong magnets instead of x-rays. A contrast material called *gadolinium* may be injected into a vein before the scan to get clear pictures.

MRI can be used to look at abnormal areas in the liver or the brain and spinal cord that could be cancer spread.

Endorectal MRI: An MRI scan of the pelvis can be used in patients with rectal cancer to see if the tumor has spread into nearby structures. To improve the accuracy of the test, some doctors use an endorectal MRI. For this test, the doctor places a probe, called an *endorectal coil*, inside the rectum. This stays in place for 30 to 45 minutes during the test and might be uncomfortable. The endorectal MRI helps stage rectal cancer and guides decision-making in regard to surgery and treatment.

Chest x-ray

An x-ray[12] might be done after colorectal cancer has been diagnosed to see if cancer has spread to the lungs, but more often a CT scan of the lungs is done since it tends to give more detailed pictures.

Positron emission tomography (PET) scan

For a PET scan[13], a slightly radioactive form of sugar (known as FDG) is injected into the blood and collects mainly in cancer cells. PET scans are generally done to help see if the cancer has spread to other parts of the body, outside of the colon or rectum. However, they do not show if cancer has spread to the brain.

Angiography

Angiography is an x-ray test[14] for looking at blood vessels. A contrast dye is injected into an artery, and then x-rays are taken. The dye outlines the blood vessels on x-rays.

If your cancer has spread to the liver, this test can show the arteries that supply blood to those tumors. This can help surgeons decide if the liver tumors can be removed and if so, it can help plan the operation. Angiography can also help in planning other treatments for cancer spread to the liver, like embolization[15].

Hyperlinks

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Colorectal Cancer Stages

After someone is diagnosed with colorectal cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer

describes how much cancer is in the body. It helps determine how serious the cancer is and how best to treat it[1]. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage of colorectal cancers is called stage 0 (a very early cancer), and then range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage. Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

The staging system most often used for colorectal cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the **t**umor **(T):** How far has the cancer grown into the wall of the colon or rectum? These layers, from the inner to the outer, include: The inner lining (mucosa), which is the layer in which nearly all colorectal cancers start. This includes a thin muscle layer (muscularis mucosa).The fibrous tissue beneath this muscle layer (submucosa)A thick muscle layer (muscularis propria)The thin, outermost layers of connective tissue (subserosa and serosa) that cover most of the colon but not the rectum

- The spread to nearby lymph **n**odes **(N):** Has the cancer spread to nearby lymph nodes?
- The spread (**m**etastasis) 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.

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced. Once a person's T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more information, see Cancer Staging[2].

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

AJCC Stage	Stage grouping	Stage description*
0	Tis N0 M0	The cancer is in its earliest stage. This stage is also known as carcinoma in situ or intramucosal carcinoma (Tis). It has not grown beyond the inner layer (muscularis mucosa) of the colon or rectum.
I	T1 or T2 N0 M0	The cancer has grown through the muscularis mucosa into the submucosa (T1), and it may also have grown into the muscularis propria (T2). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIA	T3 N0 M0	The cancer has grown into the outermost layers of the colon or rectum but has not gone through them (T3). It has not reached nearby organs. It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIB	T4a N0 M0	The cancer has grown through the wall of the colon or rectum but has not grown into other nearby tissues or organs (T4a). It has not yet spread to nearby lymph nodes (N0) or to distant sites (M0).
IIC	T4b N0 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 not yet spread to nearby lymph nodes (N0) or to distant sites (M0).
	T1 or T2 N1/N1c	The cancer has grown through the muscularis mucosa into the submucosa (T1), and it may also have grown into the muscularis propria (T2). It has spread to 1 to 3 nearby lymph nodes (N1) or into

	M0	areas of fat near the lymph nodes but not the nodes themselves (N1c). It has not spread to distant sites (M0).
	OR	
IIIA	**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).
	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	
IIIB	**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).
	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	
IIIC	**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	
	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

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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
There5 gs (The SEER database tral ca 0 g 1 0 0 1 95.35 58 1 95.35 587.03 Tm S1678 gral ca 0 g

Distant	18%
All SEER stages combined	67%

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread, but your age and overall health, whether the cancer started on the left or right side of the colon, if the cancer cells have certain gene or protein changes, how well the cancer responds to treatment, and other factors can also affect your outlook.
- **People now being diagnosed with colon or rectal cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on people who were diagnosed and treated at least 5 years earlier.

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Questions to Ask About Colorectal Cancer

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

- When you’re told you have colorectal cancer
- When deciding on a treatment plan
- During treatment
- After treatment

When you’re told you have colorectal cancer

The cancer care team wants to answer all of your questions, so that you can make informed treatment and life decisions. For instance, consider these questions:

- Where is the cancer located?
- Has the cancer spread beyond where it started?
  What is the cancer’s

- 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
3. www.cancer.org/cancer/managing-cancer/finding-care/the-doctor-patient-relationship.html

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