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GUIDELINES  
FOR PATIENTS®

2025

# Colon Cancer



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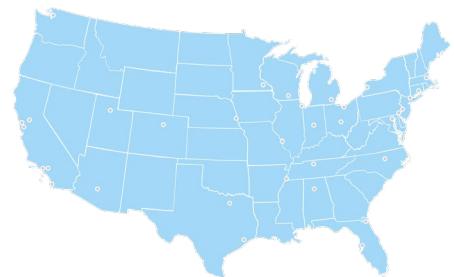


# About the NCCN Guidelines for Patients®



National Comprehensive  
Cancer Network®

Did you know that top cancer centers across the United States work together to improve cancer care? This alliance of leading cancer centers is called the National Comprehensive Cancer Network® (NCCN®).



Cancer care is always changing. NCCN develops evidence-based cancer care recommendations used by health care providers worldwide. These frequently updated recommendations are the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®). The NCCN Guidelines for Patients plainly explain these expert recommendations for people with cancer and caregivers.

**These NCCN Guidelines for Patients are based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)  
for Colon Cancer,  
Version 4.2025 — June 27, 2025.**

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Fight Colorectal Cancer (Fight CRC) is a leading patient-empowerment and advocacy organization providing balanced and objective information on colon and rectal cancer research, treatment, and policy. We are relentless champions of hope, focused on funding promising, high-impact research endeavors while equipping advocates to influence legislation and policy for the collective good. Get fast answers from ChatCRC, the first and only AI chatbot for colorectal cancer by texting (318) 242-8272 or visiting [chatbot.fightcrc.org](http://chatbot.fightcrc.org). For ways to join the fight, visit [FightCRC.org](http://FightCRC.org).

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National Comprehensive Cancer Network (NCCN) and NCCN Foundation  
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# 1

## About colon cancer

- 5 What is the colon?
- 6 What are polyps?
- 7 What can you do to get the best care?

**Colon cancer is common and treatable. Many cancers that start in the colon can be cured, especially when found early.**

## What is the colon?

The colon makes up most of the large intestine, also called the large bowel. In the colon water is absorbed from eaten food, turning the food into feces or stool.

After leaving the colon, stool moves into the rectum. The rectum is the last 6 inches or so of the large bowel. Stool is held here until it

leaves the body through an opening called the anus.

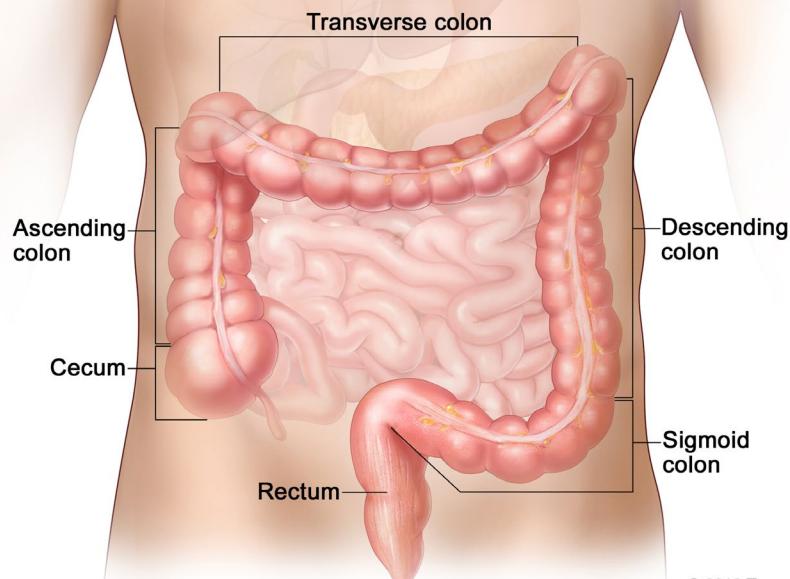
The term colorectal cancer is used to describe cancers that form in either the colon or rectum. While these cancers are similar, their treatment is different. The focus of this guide is colon cancer.

For information on rectal cancer treatment, see the *NCCN Guidelines for Patients: Rectal Cancer* at [NCCN.org/patientguidelines](https://www.NCCN.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](#) app.



### The colon

**The start of the colon is a pouch called the cecum. The appendix is about the size of a finger and sticks out from the cecum. The rest of the colon has 4 main sections: the ascending, transverse, descending, and sigmoid colon.**



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## What are polyps?

Polyps are non-cancerous growths that form on the inner lining of the colon and rectum. The most common type is called an adenoma. While it may take many years, adenomas can become invasive colon cancer. Cancer that forms in an adenoma is called an adenocarcinoma. This is the most common type of colon cancer.

Polyps that rarely turn into cancer include hyperplastic and inflammatory polyps. While most polyps don't become cancer, almost all colon cancers start in a polyp.

Removing polyps can prevent cancer before it starts. Most polyps can be removed during a colonoscopy using a minor endoscopic procedure called a polypectomy. Polyps can also be tested to make sure that cancer hasn't already started to develop.

For more information on screening for polyps, see the *NCCN Guidelines for Patients*: *Colorectal Cancer Screening* at [NCCN.org/patientguidelines](https://www.NCCN.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](#) app.



## What's in this resource?



Testing the tumor for an important feature called mismatch repair deficiency (dMMR)



Developing a care plan based on the cancer's mismatch repair (MMR) status



Treatment for polyps with cancer and all stages of colon cancer



Survivorship

## What can you do to get the best care?

Advocate for yourself. You're more likely to get the care you want by asking questions and making shared decisions with your care team.

The NCCN Guidelines for Patients will help you understand cancer care. With better understanding, you'll be more prepared to discuss your care with your team and share your concerns. Many people feel more satisfied when they play an active role in their care.

You may not know what to ask your care team. That's common. Each chapter in this book ends with an important section called *Questions to ask*. These suggested questions will help you get more information on all aspects of your care.

### Why you should read this book

Making decisions about cancer care can be stressful. You may need to make tough decisions under pressure about complex choices.

The NCCN Guidelines for Patients are trusted by patients and providers. They clearly explain current care recommendations made by respected experts in the field. Recommendations are based on the latest research and practices at leading cancer centers.

Cancer care is not the same for everyone. By following expert recommendations for your situation, you are more likely to improve your care and have better outcomes as a result. Use this book as your guide to find the information you need to make important decisions.

# 2

## Testing for colon cancer

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- 11 *DPYD* testing
- 12 Blood tests
- 13 Imaging
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This chapter describes the testing and care needed to create your treatment plan. All colon cancers should be tested for mutations (changes) in genes that fix damaged DNA, called mismatch repair (MMR) genes.

## Colonoscopy

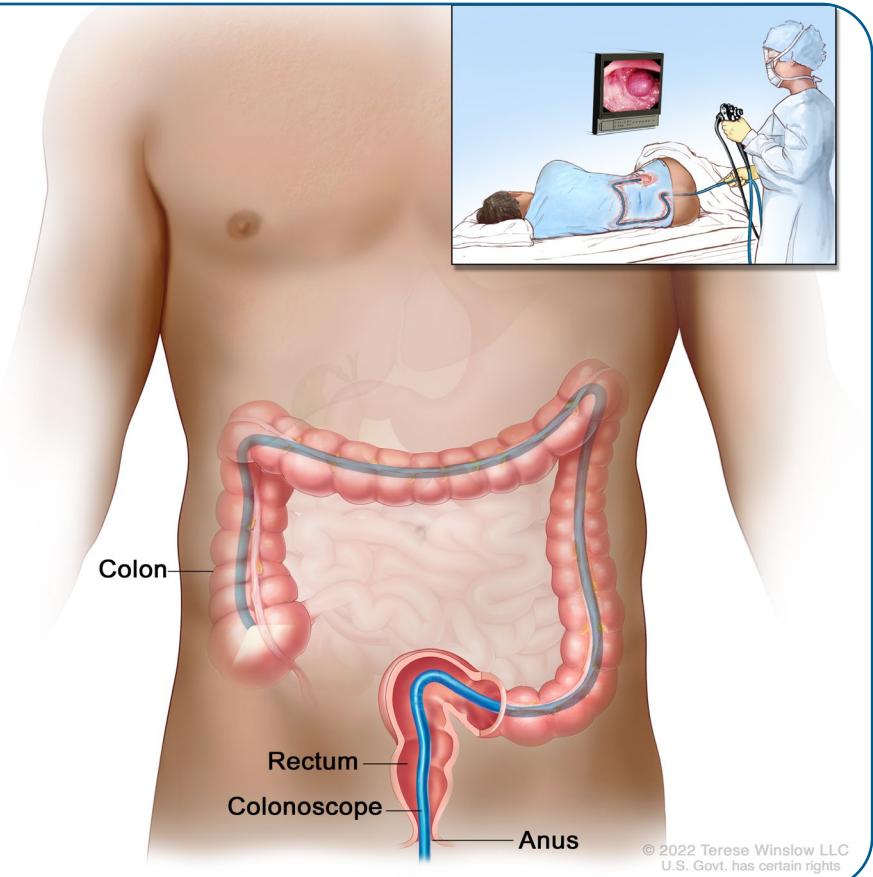
Most colon cancers are found during colonoscopy. This procedure allows a health care provider, usually a gastroenterologist, to examine the entire large bowel.

If they see any polyps or lesions, they will remove them during the procedure using a cutting tool. This is called a polypectomy. An expert called a pathologist will look for cancer cells in the polyp(s) using a microscope. If any are found, they will make a cancer diagnosis.

The diagnosis and other findings will be included in a document called a pathology report. Ask your provider for a copy.

### Colonoscopy

A colonoscopy is a procedure that allows your doctor to see and remove any abnormal tissue from the colon. A thin device is inserted through the anus, up the rectum, and into the colon. The device has a light, a camera, and a cutting tool.



It's common to have another colonoscopy after colon cancer is diagnosed to thoroughly examine the colon and look for other possible areas of cancer. This is called a diagnostic colonoscopy.

For more information on screening colonoscopy and what to expect, see the *NCCN Guidelines for Patients:*

*Colorectal Cancer Screening* at [NCCN.org/patientguidelines](https://www.nccn.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](https://www.nccn.org/patient-guides/cancer) app.



## Mismatch repair testing

Mismatch repair (MMR) or microsatellite instability (MSI) testing is recommended for **everyone diagnosed with colon cancer**.

About 1 in 6 colon cancers have one of these biomarkers. Biomarkers are features of a cancer that can help guide your treatment.

Testing involves analyzing a piece of the colon tumor in a lab. Depending on the method used, an abnormal result is called either mismatch repair deficiency (dMMR) or microsatellite instability-high (MSI-H).

Tumors that don't have either of these changes are called mismatch repair proficient (pMMR) or microsatellite stable (MSS).

### Guide 1 Testing and care for colon cancer

|                        |   |
|------------------------|---|
| <b>Necessary tests</b> | <ul style="list-style-type: none"><li>• Colonoscopy</li><li>• Biopsy</li><li>• Testing the tumor for mismatch repair deficiency (dMMR)</li><li>• CT of your chest, abdomen, and pelvis</li><li>• Blood tests: Complete blood count, chemistry profile, carcinoembryonic antigen (CEA)</li></ul> |
|------------------------|---|

|  |   |
|--|---|
| <b>Other tests or care you may receive if needed</b> | <ul style="list-style-type: none"><li>• MRI</li><li>• PIK3CA testing</li><li>• DPYD testing</li><li>• Help to quit smoking</li><li>• Family planning and options for preserving fertility</li></ul> |
|--|---|

## Family health history

Your provider will ask about the health history of your biological (related by blood) family members. Those with a first-degree relative with colorectal cancer are more likely to have this cancer compared to those without a family history of colorectal cancer.

Most colon cancers occur for unknown reasons. While rare, some people are born with a disorder that makes them more likely to get colon and other cancers. These are called inherited cancer syndromes. Two such conditions include Lynch syndrome and familial adenomatous polyposis (FAP).

People born with Lynch syndrome are at high risk of developing colon, endometrial, and ovarian cancers. Lynch syndrome is caused by inherited mutations of the MMR genes. For cancers found to have the dMMR or MSI-H biomarker, testing for Lynch syndrome is recommended.

FAP causes many polyps to form in the colon and rectum. The polyps start as benign growths, but can become invasive colon cancer over time. Cancer often develops by age 50 in people with classic FAP.

### Genetic testing for hereditary cancers

If an inherited cancer or cancer syndrome is suspected, your provider will refer you to a genetic counselor. This expert can speak with you and your family about testing for syndromes related to colon cancer.

To be tested, you must provide a sample of blood or saliva. A pathologist tests the

sample for gene mutations that cause these syndromes. It's important to meet with a genetic counselor before having any genetic testing.

## *PIK3CA* testing

*PIK3CA* is a gene involved in normal cell growth. At some point after being conceived, a mutation (change) can occur in this gene that increases your risk of colorectal and other cancers. Gene changes that happen after conception are called somatic mutations. Gene differences you are born with are called germline variants.

Cancers with a *PIK3CA* mutation tend to grow quickly and return after treatment. If the cancer is thought to be **stage 2 or 3** before surgery, your provider may order *PIK3CA* testing. The results can help guide decisions about taking aspirin after treatment. Aspirin may work better at preventing recurrence (the return of cancer) in cancers with this biomarker.

## *DPYD* testing

Capecitabine and fluorouracil (5-FU) are chemotherapy medicines called fluoropyrimidines. They are often used to treat colorectal cancer. Your body uses a special enzyme (protein) called DPD to break down these medicines so they can work properly and safely.

Around 1 in 15 people inherit a difference in the gene involved in making DPD, the *DPYD* gene. This is called DPD deficiency. In these people, fluoropyrimidines can build up and

cause severe and sometimes life-threatening side effects, referred to as fluoropyrimidine toxicity.

Signs and symptoms include mouth sores, abdominal pain, blood in the stool, nausea, vomiting, and diarrhea. The skin on the palms of your hands and soles of your feet may start peeling and become red, swollen, or numb. Other possible side effects include shortness of breath and hair loss.

If you develop any of the symptoms mentioned above in the days after receiving capecitabine or 5-FU, contact your care team right away. There is an FDA-approved treatment for this uncommon side effect of fluoropyrimidines.

If treatment with a fluoropyrimidine is planned, talk to your provider about your risk for fluoropyrimidine toxicity. After understanding your risk, you may choose to have genetic testing to learn if you have the gene variant that causes DPD deficiency.

## Blood tests

### CEA blood test

Carcinoembryonic antigen (CEA) is a protein found in blood. The level of CEA is often higher than normal in people with colon cancer. This is especially true if the cancer has spread beyond the colon to other organs.

Monitoring CEA can also be helpful for cancers limited to the colon. If the CEA level is normal to start and the cancer later spreads to other organs, the CEA level will rise.

### ctDNA Testing

Also called a liquid biopsy, circulating tumor DNA (ctDNA) testing looks for small pieces of DNA released by tumor cells into the blood. It can detect microscopic disease that may remain in the body after colon surgery.

**At this time, ctDNA testing is not recommended as part of standard care for colorectal cancer.**

However, monitoring CEA isn't helpful for everyone, even if the cancer has spread. People who are pregnant and who use tobacco may have higher CEA levels.

### Complete blood count

Cancer and other health problems can cause low or high blood cell counts. A complete blood count (CBC) measures the number of white blood cells, red blood cells, and platelets in a blood sample. White blood cells help the body to fight infection. Red blood cells carry oxygen throughout the body. Platelets help wounds heal by forming blood clots.

### Chemistry profile

Also known as a comprehensive metabolic panel, this group of tests provides information about how well your kidneys, liver, and other organs are working.

## Imaging

Imaging tests can show areas of cancer inside the body. A radiologist interprets the images and conveys the results to your oncologist.

Your care team will tell you how to prepare for your scans. If you get nervous in tight spaces, let them know. You may be offered a type of medicine called a sedative to help you relax.

### CT

Computed tomography (CT) is good at showing lymph nodes and other areas of possible cancer spread. During the scan you will lie face-up on a table that moves through a tunnel-like machine. You will be able to hear and speak with a technician at all times.

A substance called contrast is used to make the pictures clearer. It is injected into your vein and mixed with a liquid to drink. You may feel

#### CT scan

**CT is good at showing lymph nodes and other areas of possible cancer spread. During the scan you will lie face-up on a table that moves through a tunnel-like machine. You will be able to hear and speak with a technician at all times.**

flushed or get a metallic taste in your mouth. Some people develop hives, which is a sign of an allergic reaction. Tell your provider if you've had problems with contrast in the past.

### MRI

Magnetic resonance imaging (MRI) isn't often used to plan treatment for colon cancer. Your provider may order an MRI to get a better look at the liver or rectum, or if the CT scan results are unclear.

Getting an MRI is much like getting a CT scan, but doesn't involve x-rays. It also takes longer to complete and may cause your body to feel warm. Some imaging centers use a medication to slow the movement of your bowels. If MRI is planned, ask your care team what to expect.



## Fertility and family planning

For unknown reasons, colon cancer is being diagnosed more often in young adults. Some cancer treatments make it hard or impossible to have children. If you are interested in potentially having children in the future, tell your care team before treatment begins. They will discuss any fertility-related risks of your treatment plan with you.

Some methods for preserving (keeping) fertility before cancer treatment are described below. Your provider may refer you for counseling about fertility preservation options.

### Sperm banking

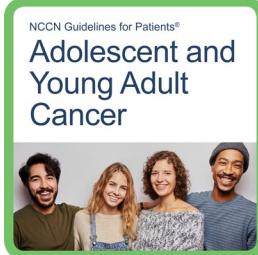
Sperm banking stores semen for later use by freezing it in liquid nitrogen. Another name for sperm banking is semen cryopreservation.

### Egg freezing

Unfertilized eggs can be removed, frozen, and stored for later use. This is called egg freezing or oocyte cryopreservation.

### Ovarian tissue banking

This method involves removing part or all of an ovary and freezing the part that contains the eggs. The frozen tissue that contains the eggs can later be unfrozen and put back in the body.



**For more information on fertility and family planning, see the *NCCN Guidelines for Patients for Adolescent and Young Adult Cancer* at [NCCN.org/patientguidelines](https://www.nccn.org/patientguidelines) and on the [NCCN Patient Guides for Cancer app](#).**

## Clinical trials

A clinical trial is a type of medical research study. After being developed and tested in a lab, potential new ways of fighting cancer need to be studied in people.

If found to be safe and effective in a clinical trial, a drug, device, or treatment approach may be approved by the U.S. Food and Drug Administration (FDA).

Everyone with cancer should carefully consider all of the treatment options available for their cancer type, including standard treatments and clinical trials. Talk to your doctor about whether a clinical trial may make sense for you.

## Phases

Most cancer clinical trials focus on treatment and are done in phases.

- **Phase 1** trials study the safety and side effects of an investigational drug or treatment approach.
- **Phase 2** trials study how well the drug or approach works against a specific type of cancer.
- **Phase 3** trials test the drug or approach against a standard treatment. If the results are good, it may be approved by the FDA.
- **Phase 4** trials study the safety and benefit of an FDA-approved treatment.

## Who can enroll?

It depends on the clinical trial's rules, called eligibility criteria. The rules may be about age, cancer type and stage, treatment history, or general health. They ensure that participants are alike in specific ways and that the trial is as safe as possible for the participants.

## Informed consent

Clinical trials are managed by a research team. This group of experts will review the study with you in detail, including its purpose and the risks and benefits of joining. All of this information is also provided in an informed consent form. Read the form carefully and ask questions before signing it. Take time to discuss it with people you trust. Keep in mind that you can leave and seek treatment outside of the clinical trial at any time.



## Finding a clinical trial

### In the United States

#### NCCN Cancer Centers

[NCCN.org/cancercenters](https://www.NCCN.org/cancercenters)

The National Cancer Institute (NCI)  
[cancer.gov/about-cancer/treatment/clinical-trials/search](https://cancer.gov/about-cancer/treatment/clinical-trials/search)

### Worldwide

The U.S. National Library of Medicine (NLM)  
[clinicaltrials.gov](https://clinicaltrials.gov)

## Need help finding a clinical trial?

NCI's Cancer Information Service (CIS)  
 1.800.4.CANCER (1.800.422.6237)  
[cancer.gov/contact](https://cancer.gov/contact)

## Will I get a placebo?

Placebos (inactive versions of real medicines) are almost never used alone in cancer clinical trials. It is common to receive either a placebo with a standard treatment, or a new drug with a standard treatment. You will be informed, verbally and in writing, if a placebo is part of a clinical trial before you enroll.

## Are clinical trials free?

There is no fee to enroll in a clinical trial. The study sponsor pays for research-related costs, including the study drug. But you may need to pay for other services, like transportation or childcare, due to extra appointments. During the trial, you will continue to receive standard cancer care. This care is often covered by insurance.

## Key points

- All colon tumors should be tested in a lab for mismatch repair deficiency (dMMR) or microsatellite instability-high (MSI-H). Cancers that don't have these biomarkers are called microsatellite stable (MSS) or mismatch repair proficient (pMMR).
- Inherited syndromes related to colon cancer include Lynch syndrome and familial adenomatous polyposis. Everyone with colon cancer should be asked about their family health history.
- A complete blood count (CBC), chemistry profile, and carcinoembryonic antigen (CEA) test are recommended as part of initial testing.
- Computed tomography (CT) is good at showing lymph nodes and other areas of possible cancer spread beyond the colon.

- If you want the option of starting or growing a family, talk to your care team about any fertility-related risks of your treatment plan and options for preserving your fertility.
- Clinical trials provide access to investigational treatments that may, in time, be approved by the FDA.

## Questions to ask

- How bad is my cancer?
- Is the cancer mismatch repair deficient or microsatellite instability-high?
- What imaging has been ordered to assess if the cancer has spread in my body?
- Can you give me a copy of my pathology report and other test results?
- Is it worth it to go through treatment?

# 3

## Treatment for non-metastatic cancer

- 18 Polyps with cancer
- 19 Invasive cancer
- 21 Staging
- 23 Chemotherapy after surgery
- 24 Surveillance
- 25 Key points
- 25 Questions to ask

**Colon cancer often forms in polyps on the lining of the colon, but can also form as flat areas of abnormal cells (a lesion). This chapter explains treatment for cancer that hasn't spread to areas far from the colon.**

polyp in which cancer has just started to grow is called a malignant (cancerous) polyp.

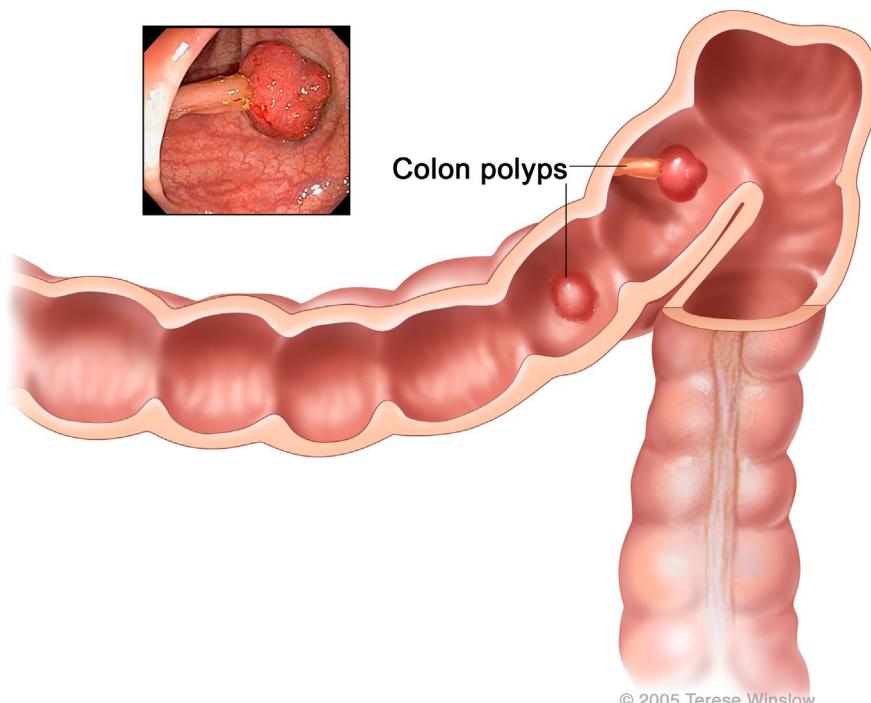
Most polyps can be removed during a colonoscopy, using a minor endoscopic procedure called a polypectomy. Often, no further treatment is needed. In other cases, surgery (resection) of a bigger piece of the colon is needed. This depends on:

- The size and shape of the polyp (pedunculated or sessile),
- The polypectomy results, and
- The results of testing the removed tissue.

Before deciding whether resection is needed after a polypectomy, your provider will review the results of testing with you and discuss your options.

### Colon polyps

**Polyps are growths on the inner lining of the bowel wall. Pedunculated polyps stick out from the colon wall on a stalk. Sessile polyps are flatter and don't have a stalk.**



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## Invasive cancer

For cancers not found early enough to be removed by polypectomy, colectomy (colon surgery) is often needed. Surgery is only an option if the colon tumor can be completely removed. If you can't have surgery first, see page 22.

### Colectomy

A colectomy is a surgery that removes the cancerous part of the colon. At the time of surgery, the mesentery should be completely removed. The mesentery is the fatty tissue that supports the colon and contains blood vessels and lymph nodes. If the cancer has grown into any neighboring structures, they will need to be removed together (en bloc) at the time of

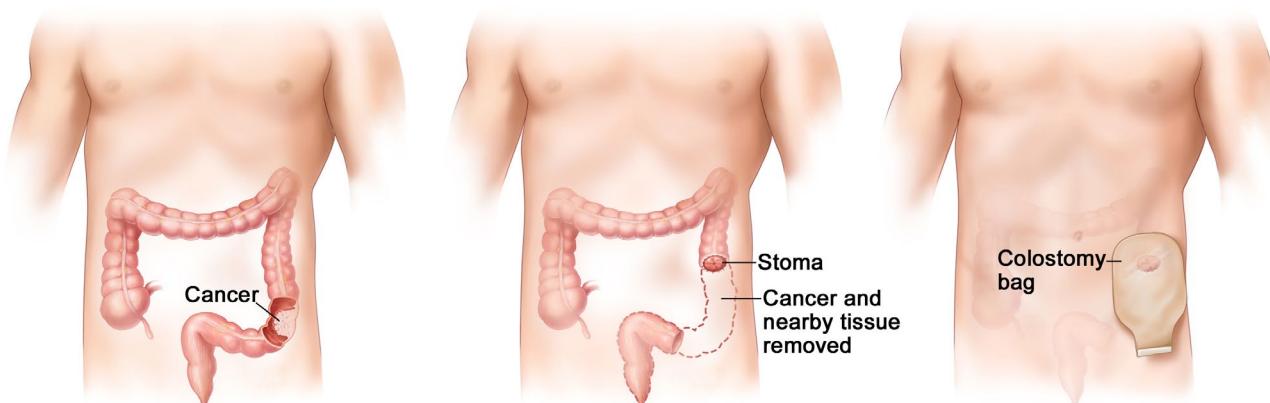
surgery. The two healthy ends of the remaining colon are then sewn or stapled together.

A colectomy can be done in 2 ways. The open method removes tumor tissue through a large cut in your abdomen. The minimally invasive method, either laparoscopic or robotic, involves making a few small cuts. Tools including a video camera are inserted through the cuts to see and remove part of your colon.

The tissue removed during surgery is sent to a pathologist. The pathologist determines how far the cancer has grown within the colon wall. They also test the removed lymph nodes for cancer. These results are used to assign the cancer a stage. The stage helps determine whether you need chemotherapy after surgery.

### Colostomy

**If the two healthy ends of the remaining colon can't be safely reconnected after the cancer is removed, a colostomy may be performed. A colostomy connects a part of the colon to an opening in the abdomen (a stoma) that allows stool to pass through. For colon cancer surgery, a colostomy is often reversed with another operation. This depends on several factors and may require a long wait time to allow the colon to heal.**



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At the time of colectomy, some people may also have a procedure called a colostomy. This is done in cases where it may not be safe to reconnect the remaining sections of colon. In a colostomy, the remaining upper part of the colon is attached to an opening on the surface of the abdomen. This opening is called a stoma.

Stool exits the body through the stoma and enters a bag attached to the skin. This is typically only needed for a short time. For colon cancer surgery, the colostomy can often be reversed with another operation. Colostomy is also known as diversion because it diverts (redirects) the flow of stool.

### Bowel blockage

Tumors growing in or around the bowel can block stool from moving and leaving the body. The bowel can often be unblocked using one of several surgical techniques, or with a mesh metal tube called a stent.



### Your care team will give you information on:

- How to prepare for surgery
- What to expect during and after surgery
- Recovery
- Possible short- and long-term side effects of colectomy, including:
  - Leaking from the spot where the colon was reconnected (anastomotic leak)
  - Changes in bowel habits
  - Bowel blocked by scar tissue
  - Organs pushing through tissues or muscles weakened by surgery (hernia)

## Staging

The stage describes the extent of cancer in the body. The American Joint Committee on Cancer (AJCC) tumor, node, metastasis (TNM) system is used to stage colon cancer.

In the AJCC system, the following key pieces of information about the cancer are used to give it a stage:

- T: How far the tumor has grown into or through the colon wall
- N: Whether any lymph nodes have cancer
- M: Whether the cancer has spread to areas or organs outside the colon (metastasized)

The T, N, and M scores are combined to assign the cancer one of the following stages: 0, I (1), II (2), III (3), or IV (4).

### Stage 2

The cancer has grown into, or beyond, the fourth layer of the colon wall. There is no cancer in nearby lymph nodes or in areas outside the colon.

### Stage 3

The cancer has spread from the colon to nearby lymph nodes or there are tumor deposits. Tumor deposits are small tumors in the fat around the colon.

### Stage 4

The cancer has spread to areas outside the colon and nearby lymph nodes. Colon cancer spreads most often to the liver and/or lungs.

### Stage 0

There are abnormal cells on the innermost layer of the colon wall. These abnormal cells may become cancer and spread into deeper layers of the colon wall. Stage 0 colon cancer is also called carcinoma in situ of the colon.

### Stage 1

The cancer has grown into either the second or third layer of the colon wall. There is no cancer in nearby lymph nodes or in areas outside the colon.

## If you can't have surgery first

If you can't have surgery first, because of where the tumor is located or other reasons, systemic therapy (chemotherapy or immunotherapy) is given first. Systemic therapy may also be given first for advanced cancers, or cancer that has spread to lymph nodes.

If this approach is planned, chemotherapy is recommended for pMMR/MSS cancers. Immunotherapy with a checkpoint inhibitor is preferred for dMMR/MSI-H cancers. Immunotherapy increases the activity of your immune system, improving your body's ability to find and destroy cancer cells.

Checkpoint inhibitors recommended for use before colectomy in dMMR/MSI-H cancers are listed in **Guide 2**.

Sometimes radiation therapy (alone or with chemotherapy) is given along with systemic therapy for unresectable cancers.

For more information on the side effects of checkpoint inhibitors, see the *NCCN Guidelines for Patients: Immunotherapy Side Effects: Immune Checkpoint Inhibitors* at [NCCN.org/patientguidelines](https://NCCN.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](#) app.

### Guide 2

#### Options for immunotherapy before colectomy for dMMR/MSI-H cancers

| Generic name                         | Brand name     |
|--------------------------------------|----------------|
| Nivolumab with or without ipilimumab | Opdivo, Yervoy |
| Pembrolizumab                        | Keytruda       |
| Cemiplimab-rwlc                      | Libtayo        |
| Dostarlimab-gxly                     | Jemperli       |
| Retifanlimab-dlwr                    | Zynzy          |
| Toripalimab-pzi                      | Loqtorzi       |
| Tislelizumab-jsgr                    | Tevimbra       |

# Chemotherapy after surgery

Depending on the cancer stage, you may have chemotherapy after surgery to kill any cancer cells left in the body. This is called adjuvant chemotherapy. After chemotherapy (if needed), surveillance begins.

## Stage 1

You don't need chemotherapy. Observation is recommended.

## Stage 2

Either observation or treatment with adjuvant therapy may be recommended for stage 2 cancers. The decision is based on the features of the cancer, including the sub-stage, mismatch repair status, and any risk factors.

## Stage 3

Systemic therapy is recommended after colectomy for **all** stage 3 cancers, regardless of mismatch repair status.

Preferred regimens for all stage 3 cancers are FOLFOX and CAPEOX. For **dMMR/MSI-H** tumors, an immunotherapy drug called atezolizumab (Tecentriq) may be given with chemotherapy. If you are eligible for this approach, it is also a preferred regimen for stage 3 cancers. Adding immunotherapy is a recommended, but not preferred, option for stage 2C cancers.

Other recommended regimens for all stage 3 cancers include capecitabine and 5-FU. Chemotherapy is typically given for 3 to 6 months. The length of treatment depends on the regimen and whether the cancer is at high risk of recurrence.

If immunotherapy is planned, see the *NCCN Guidelines for Patients for Immunotherapy Side Effects: Immune Checkpoint Inhibitors* at [NCCN.org/patientguidelines](https://www.NCCN.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](#) app.



## Does the cancer have a PIK3CA mutation?

In cancers with this biomarker, aspirin may work better at preventing recurrence than in cancers without it.

Taking aspirin for 3 years after treatment is recommended for **all** pMMR/MSS cancers with a *PIK3CA* mutation.

For dMMR/MSI-H or *POLE*-mutated cancers with a *PIK3CA* mutation, taking aspirin for 3 years is recommended only for stage 2 and stage 3 cancers.

## Surveillance

Follow-up testing is started when there are no signs of cancer after treatment. It can help find new cancer growth early.

### Stage 1

A colonoscopy is recommended 1 year after surgery for stage 1 cancers. If the results are normal, your next colonoscopy should be in 3 years, and then every 5 years. If a concerning or high-risk adenoma is found, your next colonoscopy will be needed within 1 year.

If you don't have any symptoms, you don't need testing on a regular basis. Imaging tests may be ordered if your provider suspects recurrence or spread.

### Stages 2 and 3

In addition to colonoscopy, surveillance for stages 2 and 3 colon cancer includes physical exams, carcinoembryonic antigen (CEA) blood tests, and CT scans. The recommended surveillance schedule is shown in **Guide 3**.

In addition to surveillance testing, a range of other care is important for cancer survivors. For more information, see *Chapter 5: Survivorship*.

### Guide 3

#### Stages 2 and 3 – Surveillance after treatment

|   |  |
|---|--|
| • Physical exam                         | <b>First 2 years:</b> Every 3 to 6 months  |
| • CEA blood test                        | <b>Next 3 years:</b> Every 6 months  |
| <b>CT of chest, abdomen, and pelvis</b> | Every 6 to 12 months for 5 years   |
| <b>Colonoscopy</b>                      | <p><b>If you didn't have a complete colonoscopy at diagnosis:</b><br/>Colonoscopy is recommended 3 to 6 months after surgery.</p> <p><b>If you had a complete colonoscopy at diagnosis:</b><br/>Colonoscopy is recommended 1 year after surgery. If no advanced adenomas are found, repeat in 3 years. After that, repeat every 5 years.</p> |

## Key points

- No further treatment is needed for a malignant pedunculated polyp that was removed in one piece and found to be low risk.
- Malignant sessile polyps are more likely to return after polypectomy than pedunculated polyps. Surgery and observation are options for sessile polyps.
- Colectomy is needed for cancer that isn't found early enough to be removed by polypectomy. If the cancer is advanced or has spread to lymph nodes, chemotherapy or immunotherapy may be given before surgery.
- If surgery isn't possible, treatment with systemic therapy is recommended.
- Observation is recommended after surgery for stage 1 cancers. You don't need chemotherapy.
- Chemotherapy is recommended after surgery for stage 2 mismatch repair proficient (pMMR)/microsatellite stable (MSS) cancers that are at high risk of recurrence.
- Chemotherapy is recommended after surgery for all stage 3 cancers.
- Surveillance to check for recurrence is recommended for 5 years after treatment. Depending on the stage, testing may include colonoscopies, physical exams, carcinoembryonic antigen (CEA) blood tests, and computed tomography (CT) scans.

## Questions to ask

- Am I a candidate for surgery (colectomy)?
- Will I need chemotherapy or immunotherapy before surgery? For how long? What is the benefit?
- What is treatment really going to do to me? Will I lose my hair?
- How likely is the cancer to return after treatment with surgery?



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# 4

## Treatment for metastatic cancer

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- 37 Questions to ask

**Colon cancer spreads most often to the liver, sometimes to the lungs, and less often to the abdomen or other areas. Cancer that has metastasized by the time it is diagnosed is stage 4.**

## Biomarker testing

Biomarkers are targetable features of a cancer. They are often mutations (changes) in particular genes. When possible, biomarker testing is performed on a piece of tumor tissue removed during a biopsy or surgery. If this isn't possible, a sample of your blood can be tested instead.

All metastatic colon cancers should be tested for the following biomarkers:

- Mismatch repair deficiency/microsatellite instability-high (dMMR/MSI-H) (if not already performed)
- *RAS* (*KRAS* and *NRAS*) mutations
- *BRAF* mutations
- *HER2* amplification

Testing for many biomarkers at one time is called next-generation sequencing (NGS). NGS can find other, rare biomarkers for which targeted treatments may be available, such as *POLE/POLD1* mutations, *RET* fusions, and *NTRK* fusions.

## Local therapies

Your treatment options may include local therapies. These are treatments that target liver and lung tumors directly.

Some are interventional oncology/radiology techniques, also known as image-guided therapies. These techniques use imaging, such as ultrasound or computed tomography (CT), to deliver minimally invasive cancer treatments. Using imaging during the procedure allows your doctor to precisely target the tumor(s).

A team of experts can determine the best local therapy for your metastatic tumor(s). To learn if surgery or treatment with other local therapies is an option, your case should be evaluated by a multidisciplinary team of experts. The team should include a surgeon experienced in removing liver and lung tumors and an interventional oncologist/radiologist.

### Resection

Surgery to remove liver or lung tumors is called resection. If surgery isn't expected to completely remove the tumors, image-guided thermal ablation (described next) may be paired with surgery. And, if the tumors are small and can be completely destroyed, ablation can be used in place of surgery.

If a liver resection is needed, your liver may need to be enlarged first. This is done using a minimally invasive procedure called portal vein embolization. An interventional radiologist inserts a catheter into certain veins in the liver. This blocks the blood vessel to the liver tumor, causing the healthy part of the liver to grow.

## Ablation

Image-guided thermal ablation is the use of energy to destroy small liver or lung tumors. A special needle, called a probe, is placed into or next to the tumor. The probe delivers energy to the tumor while minimizing damage to surrounding normal tissue.

Radiofrequency ablation and microwave ablation are commonly used methods that kill cancer cells using heat. Cold energy (cryoablation) is sometimes used, mostly for lung tumors. Less commonly, your provider may recommend ablation that uses electrical pulses (irreversible electroporation) or light from a laser (laser ablation).

Ablation may be used with surgery, or alone for small tumors that can be fully removed. It will only be used if all visible areas of cancer can be destroyed. Ablation may be performed by either an interventional radiologist or a surgeon. Sometimes it can be done in a single session in the interventional radiology department.

## Liver-directed therapies

### Embolization

If the cancer has spread only (or mainly) to the liver, treatment with intra-arterial liver-directed therapies may be an option. These therapies may be considered for liver tumors that:

- Didn't improve (or stopped improving) with chemotherapy, and
- Can't be resected or ablated.

Intra-arterial therapies treat liver tumors with chemotherapy beads (chemoembolization) or radioactive spheres (radioembolization).

If radiation spheres are used, it is known as selective internal radiation therapy (SIRT) or transarterial hepatic radioembolization (TARE). These procedures are performed by interventional oncologists/radiologists.

A catheter is inserted into an artery in your leg or wrist and guided to the liver tumor(s). Once in place, the spheres or beads are injected into the blood vessel leading to the tumor. They collect inside the tumor and deliver radiation or chemotherapy, causing the cancer cells to die.

The chemotherapy beads can also work to starve the tumor by stopping its blood supply. The chemotherapy or radiation further damage the cancer cells and cause the tumor to shrink. When embolization with chemotherapy isn't an option, small beads may be used to physically block blood supply to the tumor. This is called bland embolization.

### HAIC

Hepatic arterial infusion chemotherapy (HAIC) is chemotherapy given directly to the liver. It is often given in addition to standard intravenous chemotherapy. Using a port or pump that is usually placed during surgery to remove liver tumors, the drugs are funneled directly into the artery leading to the liver.

HAIC should only be performed by medical oncologists at treatment centers with experience in this method.

## Stereotactic body radiation therapy

Stereotactic body radiation therapy (SBRT) is a highly specialized type of external beam radiation therapy (EBRT). It may be used to treat colon cancer that has spread to the liver, lungs, or bone.

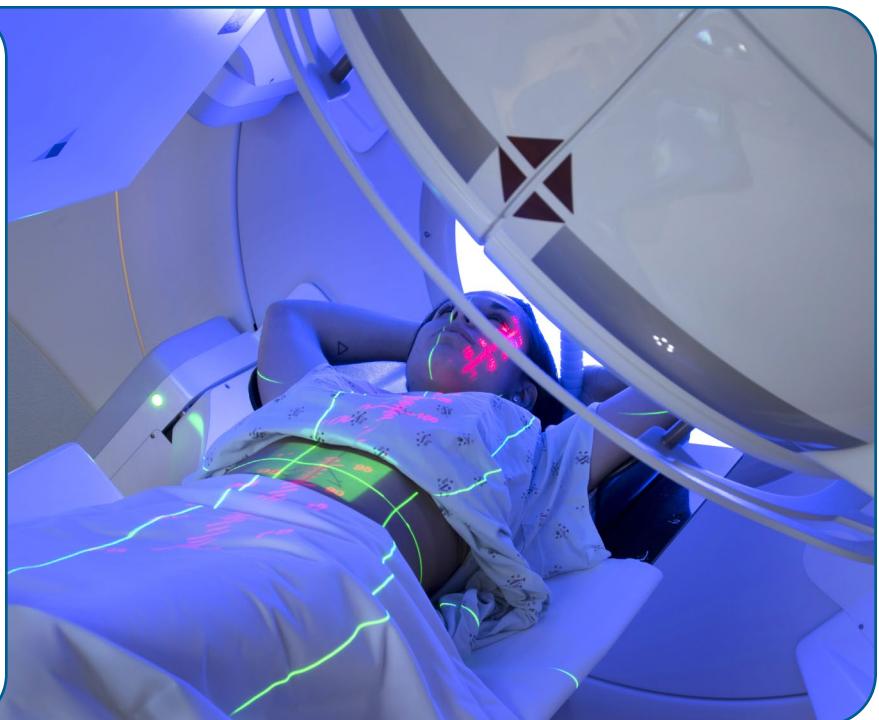
In SBRT, high doses of radiation are delivered to metastatic tumor(s) using very precise beams. The radiation comes from a large machine outside the body. The radiation passes through skin and other tissue to reach the tumor(s). Treatment with SBRT is typically completed in 5 or fewer sessions, called fractions.

“

I am a stage III colon cancer survivor. I would recommend taking it one day at a time, 1 hour if necessary. Get a second opinion to feel confident in your treatment plan. Lastly, connect with others who have been where you are. Peer support (whether patient or caregiver) as you navigate your cancer journey is invaluable.”

### SBRT for metastatic tumors

A highly specialized type of radiation therapy called SBRT may be used to treat colon cancer that has spread to the liver, lungs, or bone. Treatment typically takes 5 or fewer sessions.



## Stage 4 cancer in the liver or lungs

When possible, surgery and systemic therapy is the recommended treatment approach for these cancers. The choice of systemic therapy (chemotherapy or immunotherapy) depends on the mismatch repair (MMR) status of the cancer.

Surgery involves colectomy to remove the colon tumor. The liver or lung tumors are resected when the colectomy is performed, or later as a separate surgery. If the metastatic tumors are small, removing or destroying them with local therapies may be an option—alone or with surgery.

### pMMR/MSS cancer

Your provider may recommend 2 to 3 months of chemotherapy before, after, or between surgeries. This is in addition to the chemotherapy that is recommended for everyone after surgery, called adjuvant chemotherapy.

The goal of adjuvant chemotherapy is to kill any cancer cells that may remain in the body. Either FOLFOX or CAPEOX is preferred. Capecitabine and 5-FU/leucovorin are also options if needed. After chemotherapy, surveillance begins.

If all areas of cancer **cannot be removed with surgery or local therapies**, stage 4 colon cancer is treated with systemic therapy. Systemic therapy given first is called first-line therapy.

Recommended first-line regimens are listed below. The targeted therapy bevacizumab (Avastin) may be added to any of these regimens:

- FOLFIRI
- FOLFOX
- CAPEOX
- FOLFIRINOX

For some tumors in the left side of the colon, there is another option for first-line therapy.

This option involves chemotherapy (either FOLFIRI or FOLFOX) along with a type of drug called an EGFR blocker. EGFR blockers include panitumumab (Vectibix) and cetuximab (Erbitux). This approach is only recommended for tumors without *KRAS* or *NRAS* mutations. It can be considered for some *BRAF* mutations, but not *BRAF* V600E. EGFR blockers aren't effective against cancers with this specific mutation unless a drug that blocks *BRAF* is also included.

While uncommon, systemic therapy may shrink the tumors enough to be removed with surgery and/or local therapies. After surgery, most people will have more systemic therapy. In some cases, observation or a short course of chemotherapy may be possible.

If the tumors don't become resectable during first-line therapy, systemic therapy is typically continued. The goal is to slow the growth and spread of the cancer.

If the cancer progresses, your provider may suggest changing regimens. The choice will depend on regimens you've already had and your general health. Another important factor is whether the tumor has any actionable biomarkers. Regimens targeting specific biomarkers are listed in **Guide 4**.

If the cancer progresses through all available regimens, recommended options if you are eligible include:

- Targeted therapy with fruquintinib (Fruzaqla)
- Chemotherapy with trifluridine and tipiracil (Lonsurf)
- Targeted therapy with regorafenib (Stivarga)

These targeted therapies are tablets that can be taken by mouth. The targeted therapy bevacizumab may be given with trifluridine and tipiracil.

#### Guide 4

#### Biomarker-based treatments for pMMR/MSS cancers

| Biomarker   | Targeted therapy options  |
|---|---|
| <i>BRAF V600E</i> mutation  | <ul style="list-style-type: none"> <li>• Encorafenib + (cetuximab or panitumumab)</li> <li>• Encorafenib + (cetuximab or panitumumab) + FOLFOX</li> </ul>     |
| <i>HER2</i> -amplified with normal <i>RAS</i> and <i>BRAF</i> genes | Trastuzumab (Herceptin) + pertuzumab, lapatinib, or tucatinib   |
| <i>HER2</i> -amplified  | Fam-trastuzumab deruxtecan-nxki (Enhertu)   |
| <i>KRAS G12C</i> mutation   | <ul style="list-style-type: none"> <li>• Sotorasib (Lumakras) + cetuximab or panitumumab</li> <li>• Adagrasib (Krasati) + cetuximab or panitumumab</li> </ul> |
| <i>NTRK</i> gene fusion   | <ul style="list-style-type: none"> <li>• Entrectinib (Rozlytrek)</li> <li>• Larotrectinib (Vitrakvi)</li> <li>• Repotrectinib (Augtyro)</li> </ul>            |
| <i>RET</i> gene fusion  | Selpercatinib (Retevmo)   |

## dMMR/MSI-H or POLE/POLD1-mutated cancer

The preferred treatment approach for resectable stage 4 dMMR/MSI-H or *POLE/POLD1*-mutated cancers is immunotherapy followed by surgery. Immunotherapy is only recommended if you haven't had treatment with a checkpoint inhibitor.

Recommended options for immunotherapy are shown in **Guide 5**.

Another recommended treatment approach for these cancers is surgery followed by chemotherapy. Either FOLFOX or CAPEOX is preferred. Capecitabine and 5-FU/leucovorin are also options if needed.

If all areas of cancer **cannot** be removed with surgery and/or local therapies, stage 4 colon cancer is treated with systemic therapy. If you are a candidate and haven't had immunotherapy, treatment with a checkpoint inhibitor is recommended. Your provider will check the extent of the cancer every 2 to 3 months. Surgery may become possible. Or, you may continue immunotherapy or switch to a different systemic therapy.

### Guide 5

#### Options for immunotherapy before surgery for dMMR/MSI-H cancers

| Generic name                         | Brand name     |
|--------------------------------------|----------------|
| Nivolumab with or without ipilimumab | Opdivo, Yervoy |
| Pembrolizumab                        | Keytruda       |
| Cemiplimab-rwlc                      | Libtayo        |
| Dostarlimab-gxly                     | Jemperli       |
| Retifanlimab-dlwr                    | Zynzy          |
| Toripalimab-pzi                      | Loqtorzi       |
| Tislelizumab-jsgr                    | Tevimbra       |

## Stage 4 cancer in the abdomen

Some people with metastatic colon cancer will also form tumors in the layer of tissue that lines the abdomen, called the peritoneum. The peritoneum covers most of the abdominal organs.

In most cases, systemic therapy is given with the goal of relieving or preventing symptoms. The regimen you receive will depend on whether the tumor has any biomarkers and how well you are expected to tolerate certain systemic therapies.

Tumors growing in or around the bowel can block stool from moving and leaving the body. In this case, the bowel needs to be unblocked before starting systemic therapy. If possible, this is done using one of several surgical techniques, or with a mesh metal tube called a stent.

## Supportive care

Supportive care helps improve your quality of life during and after cancer treatment. The goal is to prevent or manage side effects and symptoms, like pain and cancer-related fatigue. It also addresses the mental, social, and spiritual concerns faced by those with cancer.

Supportive care is available to everyone with cancer and their families, not just those at the end of life. It can also help with:

- Making treatment decisions
- Coordinating your care
- Paying for care
- Planning for advanced care and end of life
- Managing your symptoms

Palliative care specialists are part of supportive care. They help to ensure that your quality of life is always considered, regardless of where you are in the treatment process or afterward.

Palliative care isn't the same as hospice care. Palliative care seeks to ensure that you are as comfortable as possible while continuing to treat the cancer with an intent to cure you.

## Surveillance

Surveillance after treatment for stage 4 colon cancer includes:

- Colonoscopies
- Physical exams
- Carcinoembryonic antigen (CEA) blood tests
- Computed tomography (CT) scans

The recommended schedule for surveillance testing is shown in **Guide 6**.

In addition to surveillance testing, a range of other care is important for cancer survivors. For more information, see *Chapter 5: Survivorship*.

“

**As the care partner for my stage IV husband, I would share that you must advocate for them. However, be respectful of their feelings and ensure you're communicating your research/questions with them. I always reviewed my list of questions and concerns with my husband on the way to our appointments in case I had something on my list that he might not want asked or answered.”**

### Guide 6 Surveillance after treatment for stage 4 colon cancer

|   |  |
|---|--|
| <b>Physical exam and CEA blood test</b>           | <b>First 2 years:</b> Every 3 to 6 months<br><b>Next 3 years:</b> Every 6 months   |
| <b>CT scan of your chest, abdomen, and pelvis</b> | Every 6 to 12 months for 5 years   |
| <b>Colonoscopy</b>                                | <p><b>If you didn't have a complete colonoscopy at diagnosis:</b><br/>Colonoscopy recommended 3 to 6 months after surgery.</p> <p><b>If you had a total colonoscopy at diagnosis:</b><br/>Colonoscopy is recommended 1 year after surgery. If no advanced adenomas are found, repeat in 3 years. After that, repeat every 5 years.</p> |

## Distant recurrence

After treatment for non-metastatic colon cancer, the cancer may return and spread to the liver, lungs, or other areas. This is called a distant recurrence. Treatment with surgery and local therapies is recommended if all of the tumors can be totally removed. But, this is uncommon, and most distant recurrences are treated with systemic therapy.

Systemic therapy may shrink the tumors enough to be removed with surgery. If your provider thinks this might be possible, you will have imaging about every 2 months to check the size of the tumors. If the cancer doesn't become resectable, systemic therapy is typically continued. The goal is to slow the growth and spread of the cancer.

Recommendations are provided next according to the mismatch repair status of the cancer and whether resection is possible.

### Unresectable pMMR/MSS cancer

If you've had recent treatment with FOLFOX or CAPEOX, you shouldn't have more chemotherapy that includes oxaliplatin. Oxaliplatin can cause serious nerve damage.

Your options for systemic therapy will depend, in part, on whether the cancer has any biomarkers. Therapies targeting the biomarkers listed below are available:

- HER2 amplification
- KRAS G12C mutation
- BRAF mutations
- NTRK gene fusion
- RET gene fusion

For cancers without biomarkers, chemotherapy with FOLFIRI or irinotecan is a recommended first-line option. A biologic may be given with chemotherapy. Biologics include bevacizumab, ziv-aflibercept, ramucirumab, cetuximab, and panitumumab.

### Resectable pMMR/MSS cancer

If you've received chemotherapy, one recommended option is resection (and/or treatment with local therapies) first, followed by either chemotherapy or observation. Observation is preferred for those who have already had treatment with oxaliplatin.

A second option is 2 to 3 months of chemotherapy first, followed by resection (and/or treatment with local therapies). More chemotherapy may follow.

If you **haven't** received chemotherapy, resection (and/or treatment with local therapies) is often performed first, followed by chemotherapy. Either FOLFOX or CAPEOX is preferred for chemotherapy. Capecitabine and 5-FU/leucovorin are also options if needed.

A second option for those who haven't had any chemotherapy is 2 to 3 months of chemotherapy first, followed by resection and/or treatment with local therapies. More chemotherapy may follow.

### **Unresectable dMMR/MSI-H or POLE/POLD1-mutated cancer**

If you haven't had immunotherapy and are a candidate, treatment with a checkpoint inhibitor is recommended. Your provider will check the extent of the cancer every 2 to 3 months.

If immunotherapy works well, surgery may become possible. If the regimen doesn't work well, switching to combination immunotherapy with nivolumab and ipilimumab is one option. Switching to another type of systemic therapy is also an option. This may be oxaliplatin-based chemotherapy such as FOLFOX or CAPEOX. Or, if the cancer has any other biomarkers, targeted therapy may be an option.

### **Resectable dMMR/MSI-H or POLE/POLD1-mutated cancer**

There are 2 options for treating resectable, distant recurrences of dMMR/MSI-H cancer. Local therapies may be used together with resection, or used alone for very small tumors. If you haven't had immunotherapy, recommended options include:

- Immunotherapy, followed by observation or resection
- Resection followed by chemotherapy

If you **have received** checkpoint inhibitor immunotherapy, one recommended option is resection first, followed by either chemotherapy or observation. Observation is recommended for those who have already had treatment with oxaliplatin.

A second option is 2 to 3 months of chemotherapy first, followed by resection. More chemotherapy may follow.

## Key points

- If not already done, all metastatic cancers should be tested for biomarkers (features) including dMMR/MSI-H, *RAS* and *BRAF* mutations, and *HER2* amplification.
- Next-generation sequencing (NGS) can find other rare biomarkers for which targeted treatments may be available, including *POLE/POLD1* mutations, *RET* fusions, and *NTRK* fusions.
- Your treatment options may include thermal ablation and stereotactic body radiation therapy (SBRT). These local therapies may be used alone or with surgery, but only if all areas of cancer can be removed. To learn if surgery or treatment with other local therapies is an option, your case should be reviewed by a multidisciplinary team of experts.
- When possible, treatment with surgery and systemic therapy is recommended for stage 4 colon cancer. The choice of chemotherapy or immunotherapy depends on the mismatch repair (MMR) status of the cancer.
- Stage 4 cancer that can't be removed with surgery or local therapies is treated with systemic therapy.
- For colon cancer that has spread to the peritoneum, systemic therapy is usually given. The goal is to relieve or prevent symptoms.
- The return and spread of stage 1, 2, or 3 colon cancer to areas far from the colon is called a distant recurrence. Most distant recurrences are treated with systemic therapy.

## Questions to ask

- Am I a candidate for a clinical trial? Do you know of one I can join?
- Am I a candidate for surgery? If not, is it possible that I'll become a candidate?
- Does my cancer have any biomarkers? How does this affect my options?
- Did an interventional oncologist/radiologist review my case, along with a multidisciplinary team, to see if I am a candidate for local therapies?
- Which systemic therapy regimen do you recommend for me? Why?

# 5

## Survivorship

39 Help with side effects

41 Healthy habits

42 Paying for care

42 More information

42 Key points

**Survivorship begins on the day you learn you have colon cancer. It focuses on the physical, emotional, and financial issues unique to cancer survivors.**

After cancer treatment, your primary care provider and oncologist will work together to provide recommended follow-up care. Close communication between your providers is a key part of survivorship.

Ask your oncologist for a written survivorship care plan. Ideally, the plan will include:

- A summary of your cancer treatment history
- A description of possible short-term, late, and long-term side effects
- A schedule of follow-up cancer tests
- Clear roles and responsibilities for your providers
- General health and wellness recommendations

## Help with side effects

Colon cancer survivors may experience both short- and long-term health effects of cancer and its treatment. The effects depend in part on the specific treatment(s) you received.

You can learn a lot about managing side effects from other survivors. Consider joining a

colon cancer survivorship group or a colorectal cancer advocacy organization.

### Diarrhea or incontinence

Colon surgery can affect your bathroom habits. You may have more bowel movements than usual, and they may come on urgently.

Having frequent and watery bowel movements is called diarrhea. Incontinence is the inability to control urination (urinary incontinence) or bowel movements (fecal incontinence). The following may help with these side effects:

- Supplemental fiber
- Changing your diet
- Anti-diarrhea medicines
- Strengthening your pelvic floor
- Wearing protective undergarments

A cancer nutritionist can help you make changes to your diet after colon surgery.

### Nerve damage

Chemotherapy can damage the sensory nerves. This is known as neuropathy. The damage can result in pain, numbness, tingling, swelling, or muscle weakness in different parts of the body. It often begins in the hands or feet and gets worse over time.

Acupuncture and heat may relieve symptoms of neuropathy. If you have painful nerve damage, a drug called duloxetine (Cymbalta) may help. Neuropathic pain is often described as a shooting or burning pain.

## Healthy habits for cancer survivors



Follow your primary care provider's recommendations for screening for other cancers based on your age and risk level.



Get other recommended health care such as blood pressure checks, hepatitis C screening, and immunizations (like the flu shot).



Eat a diet rich in plant-based foods. Limit red meat and processed foods. Ask your provider for a referral to a cancer nutritionist.



Alcohol can increase the risk of some cancers. Drink little to no alcohol.



Move more, rest less. Try to exercise at a moderate intensity for at least 150 minutes per week.



Maintain a healthy weight. Tracking your weight, diet, calories, and activity levels may help you meet your goals.



Stop using tobacco. Ask your care team about options to help you quit. Counseling and medication are often options.

Ask your care team about your options for preventing or managing neuropathy.

### Ostomy care

If you have an ostomy, you may want to join an ostomy support group. Another option is to see a health care provider who specializes in ostomy care, such as an ostomy nurse. People with ostomies can still live active lifestyles. But talk to an ostomy provider before doing any intense physical activity.

## Healthy habits

It's important to keep up with other aspects of your health after cancer treatment. In addition to the recommendations on the previous page, ask your provider about the following.

### Low GL diet

A low glycemic load (GL) diet may help prevent the return of colon cancer. Low GL foods cause a slower and smaller rise in blood sugar levels compared to other carbohydrate-containing foods.

### Aspirin

Talk to your provider about the possible risks and benefits of long-term aspirin therapy to help prevent the return of colorectal cancers.

Experts recommend eating a diet that includes a lot of plant-based foods, such as vegetables, fruits, and whole grains.



## Paying for care

Cancer survivors face a unique financial burden. Paying for doctor visits, tests, and treatments can become unmanageable, especially for those with little or no health insurance. You may also have costs not directly related to treatment, such as travel expenses and the cost of childcare.

The term financial toxicity is used to describe the problems patients face related to the cost of medical care. Financial toxicity can affect your quality of life and access to needed health care.

If you need help paying for cancer care, financial assistance may be available. Talk with a patient navigator, your treatment team's social worker, and your hospital's financial services department.

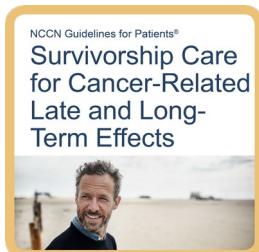
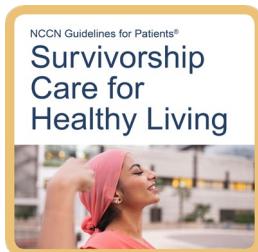
## Key points

- Survivorship focuses on the physical, emotional, and financial issues unique to cancer survivors.
- Ideally, your oncologist and primary care provider will work together to provide recommended follow-up care. Nurse navigators can also be helpful resources.
- A survivorship care plan is helpful in transitioning your care to your primary care provider.
- Healthy habits, including exercising and eating right, play an important role in helping to prevent other diseases and second cancers.

## More information

For more information on cancer survivorship, the following are available at [NCCN.org/patientguidelines](https://www.NCCN.org/patientguidelines) and on the [NCCN Patient Guides for Cancer](#) app:

- *Survivorship Care for Healthy Living*
- *Survivorship Care for Cancer-Related Late and Long-Term Effects*



# 6

## Other resources

44 What else to know

44 What else to do

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45 Questions to ask

**Want to learn more? Here's how you can get additional help.**

## What else to know

This book can help you improve your cancer care. It plainly explains expert recommendations and suggests questions to ask your care team. But it's not the only resource that you have.

You're welcome to receive as much information and help as you need. Many people are interested in learning more about:

- The details of their health and treatment
- Being a part of a care team
- Getting financial help
- Finding a care provider who is an expert in their field
- Coping with health problems

## What else to do

Your health care center can help you with next steps. They often have on-site resources to help meet your needs and find answers to your questions. Health care centers can also inform you of resources in your community.

In addition to help from your providers, the resources listed in the next section provide support for many people like yourself. Look through the list and visit the provided websites to learn more about these organizations.

## Where to get help

**Anal Cancer Foundation**  
[analcancerfoundation.org](http://analcancerfoundation.org)

**Bone Marrow and Cancer Foundation**  
[bonemarrow.org](http://bonemarrow.org)

**CancerCare**  
[Cancercare.org](http://Cancercare.org)

**Cancer Hope Network**  
[cancerhopenetwork.org](http://cancerhopenetwork.org)

**Cancer Survivor Care**  
[Cancersurvivorcare.org](http://Cancersurvivorcare.org)

**Colorectal Cancer Alliance**  
[ccalliance.org](http://ccalliance.org)

**Fight Colorectal Cancer**  
[fightcolorectalcancer.org](http://fightcolorectalcancer.org)

**FORCE: Facing Our Risk of Cancer Empowered**  
[facingourrisk.org](http://facingourrisk.org)

**Global Colon Cancer Association**  
[globalcca.org](http://globalcca.org)

**GRACE**  
[Cancergrace.org](http://Cancergrace.org)

**Imerman Angels**  
[Imermanangels.org](http://Imermanangels.org)

**Love Your Buns**  
[loveyourbuns.org](http://loveyourbuns.org)

**My Faulty Gene**  
[Myfaultygene.org](http://Myfaultygene.org)

**National Coalition for Cancer Survivorship**  
[canceradvocacy.org](http://canceradvocacy.org)

**Paltown Development Foundation**  
[paltown.org](http://paltown.org)

**PAN Foundation**  
[panfoundation.org](http://panfoundation.org)

**Triage Cancer**  
[Triagecancer.org](http://Triagecancer.org)



### **Let us know what you think!**

Please take a moment to complete an online survey about the NCCN Guidelines for Patients.  
[NCCN.org/patients/response](http://NCCN.org/patients/response)

## Questions to ask

- Who can I talk to about help with housing, food, and other basic needs?
- What help is available for transportation, childcare, and home care?
- Are there other services available to me and my caregivers?



# Words to know

## **ablation**

A type of local therapy used to destroy tumors in the liver or lungs. Also called image-guided thermal ablation.

## **adenocarcinoma**

The most common type of colon cancer. Starts in cells that line the bowel and make fluids or hormones.

## **adenoma**

The most common type of colon polyp and the most likely to form cancer cells. Also called adenomatous polyp.

## **biomarker**

A feature of a cancer that can be used to guide treatment. Biomarkers are often mutations (changes) in the DNA of the cancer cells.

## **CAPEOX**

A chemotherapy regimen that includes capecitabine and oxaliplatin.

## **carcinoembryonic antigen (CEA)**

A protein that gets released by some tumors and can be detected in blood.

## **colectomy**

Surgery to remove a part of the colon.

## **colon**

The first and longest section of the large bowel. Unused food is turned into stool in the colon.

## **colonoscopy**

Insertion of a thin tool into the colon to view or remove tissue.

## **colostomy**

An opening made during surgery to connect a part of the colon to the outside of the abdomen that allows stool to drain into a bag.

## **DPYD deficiency**

Some people are born with a difference in this gene that makes it unsafe to have the recommended doses of fluoropyrimidine chemotherapy medicines.

## **embolization**

The use of tiny beads to cut off the blood supply to a tumor, to deliver radiation or chemotherapy to a tumor, or both. If radiation and chemotherapy aren't used, it's called bland embolization.

## **external beam radiation therapy (EBRT)**

Treatment with high-energy rays received from a machine outside the body.

## **fluoropyrimidine**

A type of chemotherapy medicine. Examples include capecitabine and fluorouracil (5-FU).

## **FOLFIRI**

A chemotherapy regimen used for some advanced colon cancers. Includes leucovorin calcium, fluorouracil, and irinotecan.

## **FOLFIRINOX**

A chemotherapy regimen used for some advanced colon cancers. Includes leucovorin calcium (folinic acid), fluorouracil, irinotecan, and oxaliplatin.

## **FOLFOX**

A chemotherapy regimen that includes leucovorin calcium, fluorouracil, and oxaliplatin.

**interventional oncology/radiology**

A medical specialty that uses imaging techniques to deliver minimally invasive cancer treatments.

**large intestine (bowel)**

A long tube-shaped organ that forms the last part of the digestive system. Includes the colon, rectum, and anus.

**lymph**

A clear fluid containing white blood cells.

**lymphadenectomy**

Surgery to remove lymph nodes.

**lymph node**

Small groups of disease-fighting cells located throughout the body.

**metastasis**

The spread of cancer cells from the first (primary) tumor to a distant site.

**mismatch repair deficiency (dMMR)/  
microsatellite instability-high (MSI-H)**

A biomarker (feature) of some colon cancers that is used to guide treatment. All colon cancers should be tested for this biomarker.

**mismatch repair proficient (pMMR)/  
microsatellite stable (MSS)**

Describes cancers that do not have the mismatch repair deficiency (dMMR) biomarker.

**pathologist**

A doctor who specializes in testing cells and tissue to find disease.

**PIK3CA mutation**

A gene mutation (change) that increases the risk of colorectal and other cancers. Cancers with a PIK3CA mutation tend to grow quickly and return after treatment.

**POLE/POLD1 mutation**

A biomarker (feature) of some colon cancers. Recommended as part of comprehensive biomarker testing for metastatic colon cancer.

**polyp**

An overgrowth of cells on the inner lining of the colon wall. Pedunculated polyps are shaped like mushrooms with a stalk. Sessile polyps are flat.

**portal vein embolization**

A minimally invasive procedure to enlarge the healthy part of the liver before a liver resection.

**recurrence**

The return of cancer after a cancer-free period.

**stereotactic body radiation therapy (SBRT)**

A specialized type of radiation therapy used to treat colon cancer that has spread to the liver, lungs, or bone.

**supportive care**

A range of care available to everyone diagnosed with cancer that is intended to improve quality of life.

**unresectable**

Cancer that cannot be removed safely using surgery.

# NCCN Contributors

This patient guide is based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Colon Cancer, Version 4.2025 — June 27, 2025. It was adapted, reviewed, and published with help from the following people:

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# NCCN Cancer Centers

Abramson Cancer Center  
at the University of Pennsylvania  
*Philadelphia, Pennsylvania*  
800.789.7366 • [pennmedicine.org/cancer](http://pennmedicine.org/cancer)

Case Comprehensive Cancer Center/  
University Hospitals Seidman Cancer Center and  
Cleveland Clinic Taussig Cancer Institute  
*Cleveland, Ohio*  
UH Seidman Cancer Center  
800.641.2422 • [uhhospitals.org/services/cancer-services](http://uhhospitals.org/services/cancer-services)  
CC Taussig Cancer Institute  
866.223.8100 • [my.clevelandclinic.org/departments/cancer](http://my.clevelandclinic.org/departments/cancer)  
Case CCC  
216.844.8797 • [case.edu/cancer](http://case.edu/cancer)

City of Hope National Medical Center  
*Duarte, California*  
800.826.4673 • [cityofhope.org](http://cityofhope.org)

Dana-Farber/Brigham and Women's Cancer Center |  
Mass General Cancer Center  
*Boston, Massachusetts*  
877.442.3324 • [youhaveus.org](http://youhaveus.org)  
617.726.5130 • [massgeneral.org/cancer-center](http://massgeneral.org/cancer-center)

Duke Cancer Institute  
*Durham, North Carolina*  
888.275.3853 • [dukecancerinstitute.org](http://dukecancerinstitute.org)

Fox Chase Cancer Center  
*Philadelphia, Pennsylvania*  
888.369.2427 • [foxchase.org](http://foxchase.org)

Fred & Pamela Buffett Cancer Center  
*Omaha, Nebraska*  
402.559.5600 • [unmc.edu/cancercenter](http://unmc.edu/cancercenter)

Fred Hutchinson Cancer Center  
*Seattle, Washington*  
206.667.5000 • [fredhutch.org](http://fredhutch.org)

Huntsman Cancer Institute at the University of Utah  
*Salt Lake City, Utah*  
800.824.2073 • [healthcare.utah.edu/huntsmancancerinstitute](http://healthcare.utah.edu/huntsmancancerinstitute)

Indiana University Melvin and Bren Simon  
Comprehensive Cancer Center  
*Indianapolis, Indiana*  
888.600.4822 • [www.cancer.iu.edu](http://www.cancer.iu.edu)

Johns Hopkins Kimmel Cancer Center  
*Baltimore, Maryland*  
410.955.8964  
[www.hopkinskimmelcancercenter.org](http://hopkinskimmelcancercenter.org)

Mayo Clinic Comprehensive Cancer Center  
*Phoenix/Scottsdale, Arizona*  
*Jacksonville, Florida*  
*Rochester, Minnesota*  
480.301.8000 • *Arizona*  
904.953.0853 • *Florida*  
507.538.3270 • *Minnesota*  
[mayoclinic.org/cancercenter](http://mayoclinic.org/cancercenter)

Memorial Sloan Kettering Cancer Center  
*New York, New York*  
800.525.2225 • [mskcc.org](http://mskcc.org)

Moffitt Cancer Center  
*Tampa, Florida*  
888.663.3488 • [moffitt.org](http://moffitt.org)

O'Neal Comprehensive Cancer Center at UAB  
*Birmingham, Alabama*  
800.822.0933 • [uab.edu/onealcancercenter](http://uab.edu/onealcancercenter)

Robert H. Lurie Comprehensive Cancer Center  
of Northwestern University  
*Chicago, Illinois*  
866.587.4322 • [cancer.northwestern.edu](http://cancer.northwestern.edu)

Roswell Park Comprehensive Cancer Center  
*Buffalo, New York*  
877.275.7724 • [roswellpark.org](http://roswellpark.org)

Siteman Cancer Center at Barnes-Jewish Hospital  
and Washington University School of Medicine  
*St. Louis, Missouri*  
800.600.3606 • [siteman.wustl.edu](http://siteman.wustl.edu)

St. Jude Children's Research Hospital/  
The University of Tennessee Health Science Center  
*Memphis, Tennessee*  
866.278.5833 • [stjude.org](http://stjude.org)  
901.448.5500 • [uthsc.edu](http://uthsc.edu)

Stanford Cancer Institute  
*Stanford, California*  
877.668.7535 • [cancer.stanford.edu](http://cancer.stanford.edu)

The Ohio State University Comprehensive Cancer Center -  
James Cancer Hospital and Solove Research Institute  
*Columbus, Ohio*  
800.293.5066 • [cancer.osu.edu](http://cancer.osu.edu)

The UChicago Medicine Comprehensive Cancer Center  
*Chicago, Illinois*  
773.702.1000 • [uchicagomedicine.org/cancer](http://uchicagomedicine.org/cancer)

The University of Texas MD Anderson Cancer Center  
*Houston, Texas*  
844.269.5922 • [mdanderson.org](http://mdanderson.org)

UC Davis Comprehensive Cancer Center  
*Sacramento, California*  
916.734.5959 • 800.770.9261  
[health.ucdavis.edu/cancer](http://health.ucdavis.edu/cancer)

UC San Diego Moores Cancer Center  
*La Jolla, California*  
858.822.6100 • [cancer.ucsd.edu](http://cancer.ucsd.edu)

UCLA Jonsson Comprehensive Cancer Center  
*Los Angeles, California*  
310.825.5268 • [uclahealth.org/cancer](http://uclahealth.org/cancer)

UCSF Helen Diller Family  
Comprehensive Cancer Center  
*San Francisco, California*  
800.689.8273 • [cancer.ucsf.edu](http://cancer.ucsf.edu)

University of Colorado Cancer Center  
*Aurora, Colorado*  
720.848.0300 • [coloradocancercenter.org](http://coloradocancercenter.org)

University of Michigan Rogel Cancer Center  
*Ann Arbor, Michigan*  
800.865.1125 • [rogelcancercenter.org](http://rogelcancercenter.org)

University of Wisconsin Carbone Cancer Center  
*Madison, Wisconsin*  
608.265.1700 • [uwhealth.org/cancer](http://uwhealth.org/cancer)

UT Southwestern Simmons  
Comprehensive Cancer Center  
*Dallas, Texas*  
214.648.3111 • [utsouthwestern.edu/simmons](http://utsouthwestern.edu/simmons)

Vanderbilt-Ingram Cancer Center  
*Nashville, Tennessee*  
877.936.8422 • [vicc.org](http://vicc.org)

Yale Cancer Center/Smilow Cancer Hospital  
*New Haven, Connecticut*  
855.4.SMILOW • [yalecancercenter.org](http://yalecancercenter.org)



## We want your feedback!

Our goal is to provide helpful and easy-to-understand information on cancer.

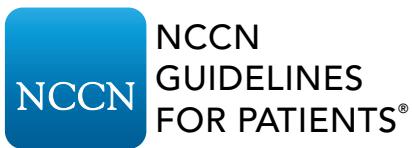
Take our survey to let us know what we got right and what we could do better.

[NCCN.org/patients/feedback](http://NCCN.org/patients/feedback)

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# Colon Cancer

## 2025

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