

National Cancer Institute

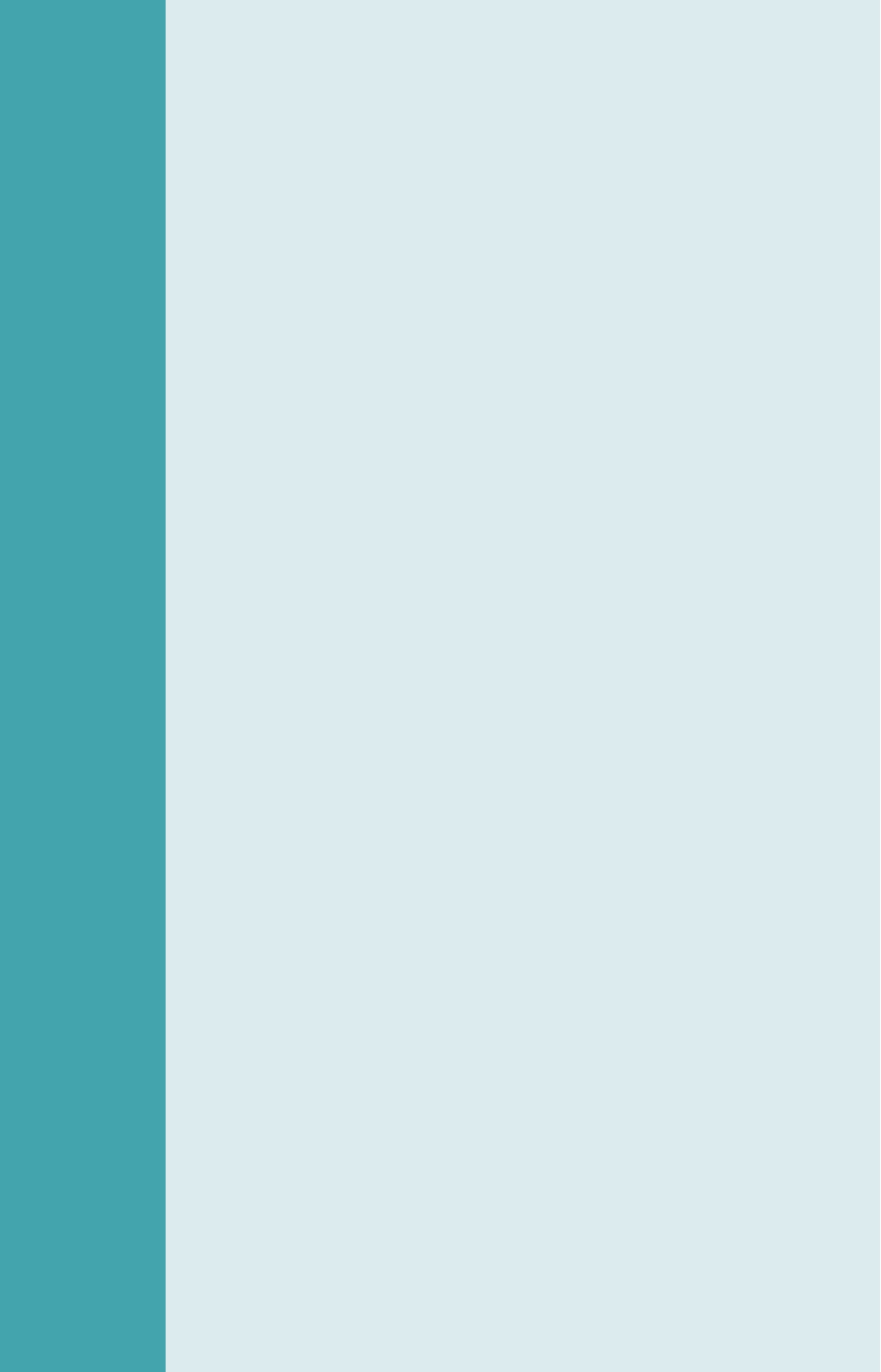
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What You Need  
To Know About™

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# Cancer of the Colon and Rectum

U.S. DEPARTMENT OF  
HEALTH AND HUMAN SERVICES  
National Institutes of Health



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## About This Booklet

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This National Cancer Institute (NCI) booklet is about *cancer* of the colon and rectum. Cancer that begins in the colon is called colon cancer, and cancer that begins in the rectum is called rectal cancer. Cancer that starts in either of these organs may also be called *colorectal cancer*.

In the United States, colorectal cancer is the fourth most common cancer in men, after skin, prostate, and lung cancer. It is also the fourth most common cancer in women, after skin, breast, and lung cancer.

You will read about possible risk factors, screening, symptoms, diagnosis, and treatment. You will also find lists of questions to ask your doctor. It may help to take this booklet with you to your next appointment.

Important terms appear in *italics*. The Dictionary at the back of this booklet explains these terms. Most words in the Dictionary have a “sounds-like” spelling to show how to pronounce them. Also, definitions of more than 4,000 terms are on the NCI Web site in the NCI Dictionary of Cancer Terms. You can access it at **<http://www.cancer.gov/dictionary>**.

If you want more information about colorectal cancer, please visit our Web site at **<http://www.cancer.gov/cancertopics/types/colon-and-rectal>**. Or, contact our Cancer Information Service. We can answer your questions about cancer. We can send you NCI booklets, fact sheets, and other materials. You can call **1-800-4-CANCER** (1-800-422-6237) or instant message us through the **LiveHelp** service at **<http://www.cancer.gov/help>**.

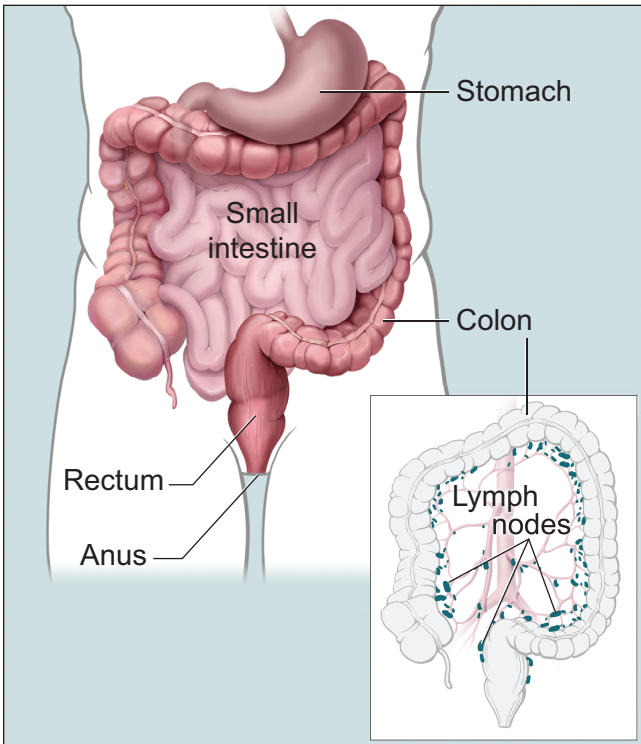
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## The Colon and Rectum

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The colon and rectum are parts of the *digestive system*. They form a long, muscular tube called the large intestine (also called the large bowel). The colon is the first 4 to 5 feet of the large intestine, and the rectum is the last several inches.

Partly digested food enters the colon from the small intestine. The colon removes water and nutrients from the food and turns the rest into waste (stool). The waste passes from the colon into the rectum and then out of the body through the anus.



This picture shows the colon and rectum.

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## Understanding Cancer

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Cancer begins in cells, the building blocks that make up tissues. Tissues make up the organs of the body.

Normally, cells grow and divide to form new cells as the body needs them. When cells grow old, they die, and new cells take their place.

Sometimes, this orderly process goes wrong. New cells form when the body does not need them, and old cells do not die when they should. These extra cells can form a mass of tissue called a growth or *tumor*.

Tumors can be *benign* or *malignant*:

- **Benign tumors** are not cancer:
  - Benign tumors are rarely life-threatening.
  - Most benign tumors can be removed. They usually do not grow back.
  - Benign tumors do not invade the tissues around them.
  - Cells from benign tumors do not spread to other parts of the body.
- **Malignant tumors** are cancer:
  - Malignant tumors are generally more serious than benign tumors. They may be life-threatening.
  - Malignant tumors often can be removed. But sometimes they grow back.
  - Malignant tumors can invade and damage nearby tissues and organs.
  - Cancer cells can break away from a malignant tumor and spread to other parts of the body. Cancer cells spread by entering the bloodstream or the *lymphatic system*. The cancer cells form new tumors that damage other organs. The spread of cancer is called *metastasis*.

When colorectal cancer spreads outside the colon or rectum, cancer cells are often found in nearby *lymph nodes*. If cancer cells have reached these nodes, they may also have spread to other lymph nodes or other organs. Colorectal cancer cells most often spread to the liver.

When cancer spreads from its original place to another part of the body, the new tumor has the same kind of abnormal cells and the same name as the original tumor. For example, if colorectal cancer spreads to the liver, the cancer cells in the liver are actually colorectal cancer cells. The disease is *metastatic* colorectal cancer, not liver cancer. For that reason, it is treated as colorectal cancer, not liver cancer. Doctors call the new tumor “distant” or metastatic disease.

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## Risk Factors

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No one knows the exact causes of colorectal cancer. Doctors often cannot explain why one person develops this disease and another does not. However, it is clear that colorectal cancer is not contagious. No one can catch this disease from another person.

Research has shown that people with certain *risk factors* are more likely than others to develop colorectal cancer. A risk factor is something that may increase the chance of developing a disease.

Studies have found the following risk factors for colorectal cancer:

- **Age over 50:** Colorectal cancer is more likely to occur as people get older. More than 90 percent of people with this disease are diagnosed after age 50. The average age at diagnosis is 72.

- **Colorectal polyps:** Polyps are growths on the inner wall of the colon or rectum. They are common in people over age 50. Most polyps are benign (not cancer), but some polyps (*adenomas*) can become cancer. Finding and removing polyps may reduce the risk of colorectal cancer.
- **Family history of colorectal cancer:** Close relatives (parents, brothers, sisters, or children) of a person with a history of colorectal cancer are somewhat more likely to develop this disease themselves, especially if the relative had the cancer at a young age. If many close relatives have a history of colorectal cancer, the risk is even greater.
- **Genetic alterations:** Changes in certain *genes* increase the risk of colorectal cancer.
  - *Hereditary nonpolyposis colon cancer (HNPCC)* is the most common type of inherited (genetic) colorectal cancer. It accounts for about 2 percent of all colorectal cancer cases. It is caused by changes in an HNPCC gene. Most people with an altered HNPCC gene develop colon cancer, and the average age at diagnosis of colon cancer is 44.
  - *Familial adenomatous polyposis (FAP)* is a rare, inherited condition in which hundreds of polyps form in the colon and rectum. It is caused by a change in a specific gene called APC. Unless FAP is treated, it usually leads to colorectal cancer by age 40. FAP accounts for less than 1 percent of all colorectal cancer cases.

Family members of people who have HNPCC or FAP can have *genetic testing* to check for specific genetic changes. For those who have changes in their genes, health care providers may suggest ways to try to reduce the risk of colorectal cancer, or to improve the detection of this disease. For adults with FAP, the doctor may recommend an operation to remove all or part of the colon and rectum.



- **Personal history of cancer:** A person who has already had colorectal cancer may develop colorectal cancer a second time. Also, women with a history of cancer of the ovary, uterus (endometrium), or breast are at a somewhat higher risk of developing colorectal cancer.
- **Ulcerative colitis or Crohn’s disease:** A person who has had a condition that causes *inflammation* of the colon (such as ulcerative colitis or Crohn’s disease) for many years is at increased risk of developing colorectal cancer.
- **Diet:** Studies suggest that diets high in fat (especially animal fat) and low in calcium, *folate*, and *fiber* may increase the risk of colorectal cancer. Also, some studies suggest that people who eat a diet very low in fruits and vegetables may have a higher risk of colorectal cancer. However, results from diet studies do not always agree, and more research is needed to better understand how diet affects the risk of colorectal cancer.
- **Cigarette smoking:** A person who smokes cigarettes may be at increased risk of developing polyps and colorectal cancer.

Because people who have colorectal cancer may develop colorectal cancer a second time, it is important to have checkups. If you have colorectal cancer, you also may be concerned that your family members may develop the disease. People who think they may be at risk should talk to their doctor. The doctor may be able to suggest ways to reduce the risk and can plan an appropriate schedule for checkups. See the “Screening” section on page 7 to learn more about tests that can find polyps or colorectal cancer.

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## Screening

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Screening tests help your doctor find polyps or cancer before you have symptoms. Finding and removing polyps may prevent colorectal cancer. Also, treatment for colorectal cancer is more likely to be effective when the disease is found early.

To find polyps or early colorectal cancer:

- People in their 50s and older should be screened.
- People who are at higher-than-average risk of colorectal cancer should talk with their doctor about whether to have screening tests before age 50, what tests to have, the benefits and risks of each test, and how often to schedule appointments.

The following screening tests can be used to detect polyps, cancer, or other abnormal areas. Your doctor can explain more about each test:

- ***Fecal occult blood test (FOBT)***: Sometimes cancers or polyps bleed, and the FOBT can detect tiny amounts of blood in your stool. If this test detects blood, other tests are needed to find the source of the blood. Benign conditions (such as *hemorrhoids*) also can cause blood in your stool.
- ***Sigmoidoscopy***: Your doctor checks inside your rectum and the lower part of the colon with a lighted tube called a *sigmoidoscope*. If polyps are found, your doctor removes them. The procedure to remove polyps is called a *polypectomy*.
- ***Colonoscopy***: Your doctor examines inside the rectum and entire colon using a long, lighted tube called a *colonoscope*. Your doctor removes polyps that may be found.

- **Double-contrast barium enema:** You are given an enema with a barium solution, and air is pumped into your rectum. Several *x-ray* pictures are taken of your colon and rectum. The barium and air help your colon and rectum show up on the pictures. Polyps or tumors may show up.
- **Digital rectal exam:** A rectal exam is often part of a routine physical examination. Your doctor inserts a lubricated, gloved finger into your rectum to feel for abnormal areas.
- **Virtual colonoscopy:** This method is under study. See the section on “The Promise of Cancer Research” on page 29.

You may find it helpful to read the NCI fact sheet “Colorectal Cancer Screening: Questions and Answers.” Page 43 tells how to get NCI fact sheets.

You may want to ask your doctor the following questions about screening:

- Which tests do you recommend for me? Why?
- How much do the tests cost? Will my health insurance plan help pay for screening tests?
- Are the tests painful?
- How soon after the tests will I learn the results?

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## Symptoms

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A common symptom of colorectal cancer is a change in bowel habits. Symptoms include:

- Having diarrhea or constipation
- Feeling that your bowel does not empty completely
- Finding blood (either bright red or very dark) in your stool
- Finding your stools are narrower than usual
- Frequently having gas pains or cramps, or feeling full or bloated
- Losing weight with no known reason
- Feeling very tired all the time
- Having nausea or vomiting

Most often, these symptoms are not due to cancer. Other health problems can cause the same symptoms. Anyone with these symptoms should see a doctor to be diagnosed and treated as early as possible.

Usually, early cancer does not cause pain. It is important not to wait to feel pain before seeing a doctor.

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## Diagnosis

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If you have screening test results that suggest cancer or you have symptoms, your doctor must find out whether they are due to cancer or some other cause. Your doctor asks about your personal and family medical history and gives you a physical exam. You may have one or more of the tests described in the “Screening” section on page 7.

If your physical exam and test results do not suggest cancer, your doctor may decide that no further tests are needed and no treatment is necessary. However, your doctor may recommend a schedule for checkups.

If tests show an abnormal area (such as a polyp), a *biopsy* to check for cancer cells may be necessary. Often, the abnormal tissue can be removed during colonoscopy or sigmoidoscopy. A *pathologist* checks the tissue for cancer cells using a microscope.



You may want to ask your doctor these questions before having a biopsy:

- How will the biopsy be done?
- Will I have to go to the hospital for the biopsy?
- How long will it take? Will I be awake? Will it hurt?
- Are there any risks? What are the chances of *infection* or bleeding after the biopsy?
- How long will it take me to recover? When can I resume a normal diet?
- How soon will I know the results?
- If I do have cancer, who will talk to me about the next steps? When?

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## Staging

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If the biopsy shows that cancer is present, your doctor needs to know the extent (stage) of the disease to plan the best treatment. The stage is based on whether the tumor has invaded nearby tissues, whether the cancer has spread and, if so, to what parts of the body.

Your doctor may order some of the following tests:

- **Blood tests:** Your doctor checks for *carcinoembryonic antigen* (CEA) and other substances in your blood. Some people who have colorectal cancer or other conditions have a high CEA level.
- **Colonoscopy:** If colonoscopy was not performed for diagnosis, your doctor checks for abnormal areas along the entire length of the colon and rectum with a colonoscope.

- **Endorectal ultrasound:** An ultrasound probe is inserted into your rectum. The probe sends out sound waves that people cannot hear. The waves bounce off your rectum and nearby tissues, and a computer uses the echoes to create a picture. The picture may show how deep a rectal tumor has grown or whether the cancer has spread to lymph nodes or other nearby tissues.
- **Chest x-ray:** X-rays of your chest may show whether cancer has spread to your lungs.
- **CT scan:** An x-ray machine linked to a computer takes a series of detailed pictures of areas inside your body. You may receive an injection of dye. A CT scan may show whether cancer has spread to the liver, lungs, or other organs.

Your doctor may also use other tests (such as *MRI*) to see whether the cancer has spread. Sometimes staging is not complete until after surgery to remove the tumor. (Surgery for colorectal cancer is described on page 18 of the “Treatment” section.)

Doctors describe colorectal cancer by the following stages:

- **Stage 0:** The cancer is found only in the innermost lining of the colon or rectum. *Carcinoma in situ* is another name for Stage 0 colorectal cancer.
- **Stage I:** The tumor has grown into the inner wall of the colon or rectum. The tumor has not grown through the wall.
- **Stage II:** The tumor extends more deeply into or through the wall of the colon or rectum. It may have invaded nearby tissue, but cancer cells have not spread to the lymph nodes.
- **Stage III:** The cancer has spread to nearby lymph nodes, but not to other parts of the body.

- **Stage IV:** The cancer has spread to other parts of the body, such as the liver or lungs.
- **Recurrence:** This is cancer that has been treated and has returned after a period of time when the cancer could not be detected. The disease may return in the colon or rectum, or in another part of the body.

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## Treatment

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Many people with colorectal cancer want to take an active part in making decisions about their medical care. It is natural to want to learn all you can about your disease and treatment choices. However, shock and stress after the diagnosis can make it hard to think of everything you want to ask your doctor. It often helps to make a list of questions before an appointment.

To help remember what your doctor says, you may take notes or ask whether you may use a tape recorder. You may also want to have a family member or friend with you when you talk to your doctor—to take part in the discussion, to take notes, or just to listen.

You do not need to ask all your questions at once. You will have other chances to ask your doctor or nurse to explain things that are not clear and to ask for more details.

Your doctor may refer you to a specialist who has experience treating colorectal cancer, or you may ask for a referral. Specialists who treat colorectal cancer include *gastroenterologists* (doctors who specialize in diseases of the digestive system), *surgeons*, *medical oncologists*, and *radiation oncologists*. You may have a team of doctors.



## Getting a Second Opinion

Before starting treatment, you might want a second opinion about your diagnosis and treatment plan. Many insurance companies cover a second opinion if you or your doctor requests it.

It may take some time and effort to gather medical records and arrange to see another doctor. Usually it is not a problem to take several weeks to get a second opinion. In most cases, the delay in starting treatment will not make treatment less effective. To make sure, you should discuss this delay with your doctor. Sometimes people with colorectal cancer need treatment right away.

There are a number of ways to find a doctor for a second opinion:

- Your doctor may refer you to one or more specialists.
- NCI's Cancer Information Service, at **1-800-4-CANCER**, can tell you about nearby treatment centers. Information Specialists also can assist you online through **LiveHelp** at **<http://www.cancer.gov/help>**.
- A local or state medical society, a nearby hospital, or a medical school can usually provide the names of specialists.
- The American Board of Medical Specialties (ABMS) has a list of doctors who have had training and passed exams in their specialty. You can find this list in the *Official ABMS Directory of Board Certified Medical Specialists*. The Directory is in most public libraries. Also, ABMS offers this information at **<http://www.abms.org>**. (Click on "Who's Certified.")

- NCI provides a helpful fact sheet called “How To Find a Doctor or Treatment Facility If You Have Cancer.” See page 43 to learn how to get NCI fact sheets.

## Treatment Methods

The choice of treatment depends mainly on the location of the tumor in the colon or rectum and the stage of the disease. Treatment for colorectal cancer may involve *surgery*, *chemotherapy*, *biological therapy*, or *radiation therapy*. Some people have a combination of treatments. These treatments are described on pages 18 through 24.

Colon cancer sometimes is treated differently from rectal cancer. Treatments for colon and rectal cancer are described separately on page 24.

Your doctor can describe your treatment choices and the expected results. You and your doctor can work together to develop a treatment plan that meets your needs.

Cancer treatment is either *local therapy* or *systemic therapy*:

- **Local therapy:** Surgery and radiation therapy are local therapies. They remove or destroy cancer in or near the colon or rectum. When colorectal cancer has spread to other parts of the body, local therapy may be used to control the disease in those specific areas.
- **Systemic therapy:** Chemotherapy and biological therapy are systemic therapies. The drugs enter the bloodstream and destroy or control cancer throughout the body.

Because cancer treatments often damage healthy cells and tissues, *side effects* are common. Side effects depend mainly on the type and extent of the treatment. Side effects may not be the same for each person, and they may change from one treatment session to the next. Before treatment starts, your health care team will explain possible side effects and suggest ways to help you manage them.

At any stage of disease, supportive care is available to relieve the side effects of treatment, to control pain and other symptoms, and to ease emotional concerns. Information about such care is available on NCI's Web site at **<http://www.cancer.gov/cancertopics/coping>**, and from Information Specialists at **1-800-4-CANCER** or **LiveHelp** (**<http://www.cancer.gov/help>**).

You may want to talk to your doctor about taking part in a *clinical trial*, a research study of new treatment methods. The section on “The Promise of Cancer Research” on page 29 has more information about clinical trials.

You may want to ask your doctor these questions before treatment begins:

- What is the stage of the disease? Has the cancer spread?
- What are my treatment choices? Which do you suggest for me? Will I have more than one kind of treatment?
- What are the expected benefits of each kind of treatment?
- What are the risks and possible side effects of each treatment? How can the side effects be managed?
- What can I do to prepare for treatment?
- How will treatment affect my normal activities? Am I likely to have urinary problems? What about bowel problems, such as diarrhea or rectal bleeding? Will treatment affect my sex life?
- What will the treatment cost? Is this treatment covered by my insurance plan?

## Surgery

Surgery is the most common treatment for colorectal cancer.

- **Colonoscopy:** A small malignant polyp may be removed from your colon or upper rectum with a colonoscope. Some small tumors in the lower rectum can be removed through your anus without a colonoscope.
- **Laparoscopy:** Early colon cancer may be removed with the aid of a thin, lighted tube (*laparoscope*). Three or four tiny cuts are made into your abdomen. The surgeon sees inside your abdomen with the laparoscope. The tumor and part of the healthy colon are removed. Nearby lymph nodes also may be removed. The surgeon checks the rest of your intestine and your liver to see if the cancer has spread.
- **Open surgery:** The surgeon makes a large cut into your abdomen to remove the tumor and part of the healthy colon or rectum. Some nearby lymph nodes are also removed. The surgeon checks the rest of your intestine and your liver to see if the cancer has spread.

When a section of your colon or rectum is removed, the surgeon can usually reconnect the healthy parts. However, sometimes reconnection is not possible. In this case, the surgeon creates a new path for waste to leave your body. The surgeon makes an opening (a *stoma*) in the wall of the abdomen, connects the upper end of the intestine to the stoma, and closes the other end. The operation to create the stoma is called a *colostomy*. A flat bag fits over the stoma to collect waste, and a special adhesive holds it in place.

For most people, the stoma is temporary. It is needed only until the colon or rectum heals from surgery. After healing takes place, the surgeon reconnects the parts of the intestine and closes the stoma. Some people, especially those with a tumor in the lower rectum, need a permanent stoma.

People who have a colostomy may have irritation of the skin around the stoma. Your doctor, your nurse, or an *enterostomal therapist* can teach you how to clean the area and prevent irritation and infection. The “Rehabilitation” section on page 26 has more information about how people learn to care for a stoma.

The time it takes to heal after surgery is different for each person. You may be uncomfortable for the first few days. Medicine can help control your pain. Before surgery, you should discuss the plan for pain relief with your doctor or nurse. After surgery, your doctor can adjust the plan if you need more pain relief.

It is common to feel tired or weak for a while. Also, surgery sometimes causes constipation or diarrhea. Your health care team monitors you for signs of bleeding, infection, or other problems requiring immediate treatment.

You may want to ask your doctor these questions before having surgery:

- What kind of operation do you recommend for me?
- Do I need any lymph nodes removed? Will other tissues be removed? Why?
- What are the risks of surgery? Will I have any lasting side effects?
- Will I need a colostomy? If so, will the stoma be permanent?
- How will I feel after the operation?
- If I have pain, how will it be controlled?
- How long will I be in the hospital?
- When can I get back to my normal activities?

## Chemotherapy

Chemotherapy uses anticancer drugs to kill cancer cells. The drugs enter the bloodstream and can affect cancer cells all over the body.

Anticancer drugs are usually given through a vein, but some may be given by mouth. You may be treated in an outpatient part of the hospital, at the doctor's office, or at home. Rarely, a hospital stay may be needed.

The side effects of chemotherapy depend mainly on the specific drugs and the dose. The drugs can harm normal cells that divide rapidly:

- **Blood cells:** These cells fight infection, help blood to clot, and carry oxygen to all parts of your body. When drugs affect your blood cells, you are more likely to get infections, bruise or bleed easily, and feel very weak and tired.

- **Cells in hair roots:** Chemotherapy drugs can cause hair loss. Your hair will grow back, but it may be somewhat different in color and texture.
- **Cells that line the digestive tract:** Chemotherapy can cause poor appetite, nausea and vomiting, diarrhea, or mouth and lip sores.

Chemotherapy for colorectal cancer can cause the skin on the palms of the hands and bottoms of the feet to become red and painful. The skin may peel off.

Your health care team can suggest ways to control many of these side effects. Most side effects usually go away after treatment ends.

You may find it helpful to read NCI's booklet *Chemotherapy and You: A Guide to Self-Help During Cancer Treatment*. Page 43 tells how to get NCI booklets.

## **Biological Therapy**

Some people with colorectal cancer that has spread receive a *monoclonal antibody*, a type of biological therapy. The monoclonal antibodies bind to colorectal cancer cells. They interfere with cancer cell growth and the spread of cancer. People receive monoclonal antibodies through a vein at the doctor's office, hospital, or clinic. Some people receive chemotherapy at the same time.

During treatment, your health care team will watch for signs of problems. Some people get medicine to prevent a possible allergic reaction. The side effects depend mainly on the monoclonal antibody used. Side effects may include rash, fever, abdominal pain, vomiting, diarrhea, blood pressure changes, bleeding, or breathing problems. Side effects usually become milder after the first treatment.



You may find it helpful to read NCI's booklet *Biological Therapy: Treatments That Use Your Immune System to Fight Cancer*. Page 43 tells how to get NCI booklets.

You may want to ask your doctor these questions before having chemotherapy or biological therapy:

- What drugs will I have? What will they do?
- When will treatment start? When will it end? How often will I have treatments?
- Where will I go for treatment? Will I be able to drive home afterward?
- What can I do to take care of myself during treatment?
- How will we know the treatment is working?
- Which side effects should I tell you about?
- Will there be long-term effects?

## **Radiation Therapy**

Radiation therapy (also called radiotherapy) uses high-energy rays to kill cancer cells. It affects cancer cells only in the treated area.

Doctors use different types of radiation therapy to treat cancer. Sometimes people receive two types:

- ***External radiation:*** The radiation comes from a machine. The most common type of machine used for radiation therapy is called a *linear accelerator*. Most patients go to the hospital or clinic for their treatment, generally 5 days a week for several weeks.

- **Internal radiation** (implant radiation or *brachytherapy*): The radiation comes from *radioactive* material placed in thin tubes put directly into or near the tumor. The patient stays in the hospital, and the implants generally remain in place for several days. Usually they are removed before the patient goes home.
- **Intraoperative radiation therapy** (IORT): In some cases, radiation is given during surgery.

Side effects depend mainly on the amount of radiation given and the part of your body that is treated. Radiation therapy to your abdomen and pelvis may cause nausea, vomiting, diarrhea, bloody stools, or urgent bowel movements. It also may cause urinary problems, such as being unable to stop the flow of urine from the bladder. In addition, your skin in the treated area may become red, dry, and tender. The skin near the anus is especially sensitive.

You are likely to become very tired during radiation therapy, especially in the later weeks of treatment. Resting is important, but doctors usually advise patients to try to stay as active as they can.

Although the side effects of radiation therapy can be distressing, your doctor can usually treat or control them. Also, side effects usually go away after treatment ends.

You may find it helpful to read NCI's booklet *Radiation Therapy and You: A Guide to Self-Help During Cancer Treatment*. Page 43 tells how to get NCI booklets.

You may want to ask your doctor these questions about radiation therapy:

- Why do I need this treatment?
- When will the treatments begin? When will they end?
- How will I feel during treatment?
- How will we know if the radiation treatment is working?
- What can I do to take care of myself during treatment?
- Can I continue my normal activities?
- Are there any lasting effects?

## **Treatment for Colon Cancer**

Most patients with colon cancer are treated with surgery. Some people have both surgery and chemotherapy. Some with advanced disease get biological therapy.

A colostomy is seldom needed for people with colon cancer.

Although radiation therapy is rarely used to treat colon cancer, sometimes it is used to relieve pain and other symptoms.

## **Treatment for Rectal Cancer**

For all stages of rectal cancer, surgery is the most common treatment. Some patients receive surgery, radiation therapy, and chemotherapy. Some with advanced disease get biological therapy.

About 1 out of 8 people with rectal cancer needs a permanent colostomy.

Radiation therapy may be used before and after surgery. Some people have radiation therapy before surgery to shrink the tumor, and some have it after surgery to kill cancer cells that may remain in the area. At some hospitals, patients may have radiation therapy during surgery. People also may have radiation therapy to relieve pain and other problems caused by the cancer.

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## Nutrition and Physical Activity

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It is important to eat well and stay as active as you can.

You need the right amount of calories to maintain a good weight during and after cancer treatment. You also need enough protein, vitamins, and minerals. Eating well may help you feel better and have more energy.

Eating well can be hard. Sometimes, especially during or soon after treatment, you may not feel like eating. You may be uncomfortable or tired. You may find that foods do not taste as good as they used to. You also may have nausea, vomiting, diarrhea, or mouth sores.

Your doctor, dietitian, or other health care provider can suggest ways to deal with these problems. The NCI booklet *Eating Hints for Cancer Patients* has many useful ideas and recipes. See page 43 to learn how to get this booklet.

Many people find they feel better when they stay active. Walking, yoga, swimming, and other activities can keep you strong and increase your energy. Whatever physical activity you choose, be sure to talk to your doctor before you start. Also, if your activity causes you pain or other problems, be sure to let your doctor or nurse know about it.

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## Rehabilitation

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Rehabilitation is an important part of cancer care. Your health care team makes every effort to help you return to normal activities as soon as possible.

If you have a stoma, you need to learn to care for it. Doctors, nurses, and enterostomal therapists can help. Often, enterostomal therapists visit you before surgery to discuss what to expect. They teach you how to care for the stoma after surgery. They talk about lifestyle issues, including emotional, physical, and sexual concerns. Often they can provide information about resources and support groups.

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## Follow-up Care

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Follow-up care after treatment for colorectal cancer is important. Even when the cancer seems to have been completely removed or destroyed, the disease sometimes returns because undetected cancer cells remained somewhere in the body after treatment. Your doctor monitors your recovery and checks for recurrence of the cancer. Checkups help ensure that any changes in health are noted and treated if needed.

Checkups may include a physical exam (including a digital rectal exam), lab tests (including fecal occult blood test and CEA test), colonoscopy, x-rays, CT scans, or other tests.

If you have any health problems between checkups, you should contact your doctor.

You may wish to get the NCI booklet *Facing Forward Series: Life After Cancer Treatment*. It answers questions about follow-up care and other concerns. It also describes how to talk with your doctor

about making a plan of action for recovery and future health. Page 43 tells how to get NCI booklets.

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## Complementary Medicine

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It's natural to want to help yourself feel better. Some people with cancer say that complementary medicine helps them feel better. An approach is called complementary medicine when it is used along with standard treatment. *Acupuncture*, massage therapy, herbal products, vitamins or special diets, and meditation are examples of such approaches.

Talk with your doctor if you're thinking about trying anything new. Things that seem safe, such as certain herbal teas, may change the way standard treatment works. These changes could be harmful. And some approaches could be harmful even if used alone.

You may find it helpful to read the NCI booklet *Thinking About Complementary & Alternative Medicine: A guide for people with cancer*. Page 43 tells how to get NCI booklets.

You also may request materials from the National Center for Complementary and Alternative Medicine, which is part of the National Institutes of Health. You can reach their clearinghouse at 1-888-644-6226 (voice) and 1-866-464-3615 (TTY). In addition, you can visit their Web site at <http://www.nccam.nih.gov>.

You may want to ask your doctor these questions before you decide to try complementary medicine:

- What benefits can I expect from this approach?
- What are its risks?
- Do the expected benefits outweigh the risks?
- What side effects should I watch for?
- Will this approach change the way my cancer treatment works? Could this be harmful?
- Is this approach under study in a clinical trial?
- How much will it cost? Will my health insurance pay for this approach?
- Can you refer me to a complementary medicine practitioner?

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## Sources of Support

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Living with a serious disease such as colorectal cancer is not easy. You may worry about caring for your family, keeping your job, or continuing daily activities. Concerns about treatments and managing side effects, hospital stays, and medical bills are also common. Doctors, nurses, and other members of your health care team can answer questions about treatment, working, or other activities. Meeting with a social worker, counselor, or member of the clergy also can be helpful if you want to talk about your feelings or concerns. Often, a social worker can suggest resources for financial aid, transportation, home care, or emotional support.

Support groups also can help. In these groups, patients or their family members meet with other patients or their families to share what they have learned about coping with the disease and the effects of treatment. Groups may offer support in person, over the telephone, or on the Internet. You may want to talk with a member of your health care team about finding a support group.

Information Specialists at **1-800-4-CANCER** and at **LiveHelp** (<http://www.cancer.gov/help>) can help you locate programs, services, and publications. For a list of organizations offering support, you may want to get the NCI fact sheet “National Organizations That Offer Services to People With Cancer and Their Families.”

For tips on coping, you may want to read the NCI booklet *Taking Time: Support for People With Cancer and the People Who Care About Them*. Page 43 tells how to get NCI publications.

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## The Promise of Cancer Research

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Doctors all over the country are conducting many types of clinical trials (research studies in which people volunteer to take part). Doctors are studying new ways to prevent, detect, and treat colorectal cancer.

Clinical trials are designed to answer important questions and to find out whether new approaches are safe and effective. Research already has led to advances, and researchers continue to search for more effective approaches.



People who join clinical trials may be among the first to benefit if a new approach is shown to be effective. And if participants do not benefit directly, they may still make an important contribution to medicine by helping doctors learn more about the disease and how to control it. Although clinical trials may pose some risks, researchers do all they can to protect their patients.

If you are interested in being part of a clinical trial, talk with your doctor. You may want to read the NCI booklets *Taking Part in Clinical Trials: What Cancer Patients Need To Know* or *Taking Part in Clinical Trials: Cancer Prevention Studies*. The NCI also offers an easy-to-read brochure called *If You Have Cancer...What You Should Know About Clinical Trials*. These NCI publications describe how clinical trials are carried out and explain their possible benefits and risks.

NCI's Web site includes a section on clinical trials at <http://www.cancer.gov/clinicaltrials>. It has general information about clinical trials as well as detailed information about specific ongoing studies of colorectal cancer. The Cancer Information Service at 1-800-4-CANCER or through LiveHelp at <http://www.cancer.gov/help> can answer questions and provide information about clinical trials.

## **Research on Prevention**

Research is being done to test whether certain dietary supplements or drugs may help prevent colorectal cancer. For example, researchers across the country are studying vitamin D and calcium supplements, *selenium* supplements, and the drug *celecoxib* in people with polyps.

## **Research on Screening and Diagnosis**

Scientists are testing new ways to check for polyps and colorectal cancer. NCI-supported researchers are studying *virtual colonoscopy*. This is a CT scan of the colon. It makes x-ray pictures of the inside of the colon.

## **Research on Treatment**

Researchers are studying chemotherapy and biological therapy. They are studying new drugs, new combinations, and different doses. In addition, researchers are looking at ways to lessen the side effects of treatment.

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## Dictionary

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A dictionary of more than 4,000 terms is on the NCI Web site at <http://www.cancer.gov/dictionary>.

**Acupuncture** (AK-yoo-PUNK-chur): The technique of inserting thin needles through the skin at specific points on the body to control pain and other symptoms. It is a type of complementary and alternative medicine.

**Adenoma** (ad-in-OH-ma): A noncancerous tumor.

**Benign** (beh-NINE): Not cancerous. Benign tumors may grow larger but do not spread to other parts of the body.

**Biological therapy** (by-oh-LAH-jih-kul THAYR-uh-pee): Treatment to stimulate or restore the ability of the immune system to fight cancer, infections, and other diseases. Also used to lessen side effects that may be caused by some cancer treatments. Also called immunotherapy, biotherapy, or biological response modifier (BRM) therapy.

**Biopsy** (BY-op-see): The removal of cells or tissues for examination by a pathologist. The pathologist may study the tissue under a microscope or perform other tests on the cells or tissue.

**Brachytherapy** (BRA-kee-THAYR-uh-pee): A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor. Also called internal radiation, implant radiation, or interstitial radiation therapy.

**Cancer**: A term for diseases in which abnormal cells divide without control. Cancer cells can invade nearby tissues and can spread through the bloodstream and lymphatic system to other parts of the body.

***Carcinoembryonic antigen*** (KAR-sin-oh-EM-bree-ON-ik ANT-ih-jen): CEA. A substance that is sometimes found in an increased amount in the blood of people who have certain cancers, other diseases, or who smoke. It is used as a tumor marker for colorectal cancer.

***Carcinoma in situ*** (KAR-sih-NOH-ma in SYE-too): Cancer that involves only the cells in which it began and that has not spread to nearby tissues.

***Celecoxib*** (sel-uh-KOX-ib): A drug that reduces pain. Celecoxib belongs to the family of drugs called nonsteroidal anti-inflammatory agents. It is being studied in the prevention of cancer.

***Chemotherapy*** (kee-moh-THAYR-uh-pee): Treatment with drugs that kill cancer cells.

***Clinical trial***: A type of research study that tests how well new medical approaches work in people. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease. Also called a clinical study.

***Colonoscope*** (koh-LAHN-oh-skope): A thin, lighted tube used to examine the inside of the colon.

***Colonoscopy*** (koh-luh-NAHS-kuh-pee): An examination of the inside of the colon using a thin, lighted tube (called a colonoscope) inserted into the rectum. Samples of tissue may be collected for examination under a microscope.

***Colorectal cancer*** (KOH-loh-REK-tul KAN-ser): Cancer that develops in the colon (large intestine) and/or the rectum (the last several inches of the large intestine before the anus).

***Colostomy*** (koh-LAHS-toh-mee): An opening into the colon from the outside of the body. A colostomy provides a new path for waste material to leave the body after part of the colon has been removed.

***Crohn's disease*** (kronze): Chronic inflammation of the gastrointestinal tract, most commonly the small intestine and colon. Crohn's disease increases the risk of colon cancer.

***CT scan***: Computed tomography scan. A series of detailed pictures of areas inside the body taken from different angles; the pictures are created by a computer linked to an x-ray machine. Also called computerized tomography and computerized axial tomography (CAT) scan.

***Digestive system*** (dye-JES-tiv): The organs that take in food and turn it into products that the body can use to stay healthy. Waste products the body cannot use leave the body through bowel movements. The digestive system includes the salivary glands, mouth, esophagus, stomach, liver, pancreas, gallbladder, small and large intestines, and rectum.

***Digital rectal examination*** (DIH-jih-tul REK-tul eg-zam-ih-NAY-shun): DRE. An examination in which a doctor inserts a lubricated, gloved finger into the rectum to feel for abnormalities.

***Double-contrast barium enema***: A procedure in which x-rays of the colon and rectum are taken after a liquid containing barium is put into the rectum. Barium is a silver-white metallic compound that outlines the colon and rectum on an x-ray and helps show abnormalities. Air is put into the rectum and colon to further enhance the x-ray.

***Endorectal ultrasound*** (en-doh-REK-tul): ERUS. A procedure in which a probe that sends out high-energy sound waves is inserted into the rectum. The sound waves are bounced off internal tissues or organs and make echoes. The echoes form a picture of body tissue called a sonogram. ERUS is used to look for abnormalities in the rectum and nearby structures, including the prostate. Also called transrectal ultrasound.

**Enterostomal therapist** (en-ter-oh-STOH-mul): A health professional trained in the care of persons with stomas, such as colostomies or urostomies.

**External radiation** (ray-dee-AY-shun): Radiation therapy that uses a machine to aim high-energy rays at the cancer. Also called external-beam radiation.

**Familial adenomatous polyposis** (fuh-MIH-lee-ul ad-in-OH-mut-us pah-lee-POH-sis): FAP. An inherited condition in which numerous polyps (growths that protrude from mucous membranes) form on the inside walls of the colon and rectum. It increases the risk of colon cancer. Also called familial polyposis.

**Fecal occult blood test** (FEE-kul oh-KULT): FOBT. A test to check for blood in stool. Small samples of stool are placed on special cards and sent to a doctor or laboratory for testing. Blood in the stool may be a sign of colorectal cancer.

**Fiber** (FY-ber): The parts of fruits, vegetables, legumes, and whole grains that cannot be digested. Fiber may help prevent cancer.

**Folate**: A B-complex vitamin that is being studied as a cancer prevention agent. Also called folic acid.

**Gastroenterologist** (GAS-troh-en-ter-AHL-oh-jist): A doctor who specializes in diagnosing and treating disorders of the digestive system.

**Gene**: The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein.

**Genetic testing**: Analyzing DNA to look for a genetic alteration that may indicate an increased risk for developing a specific disease or disorder.

**Hemorrhoid** (HEM-uh-royd): An enlarged or swollen blood vessel, usually located near the anus or the rectum.

***Hereditary nonpolyposis colon cancer*** (heh-REH-dih-tair-ee nahn-pah-lee-POH-sis): HNPCC. An inherited disorder in which affected individuals have a higher-than-normal chance of developing colon cancer and certain other types of cancer, often before the age of 50. Also called Lynch syndrome.

***Infection***: Invasion and multiplication of germs in the body. Infections can occur in any part of the body and can spread throughout the body. The germs may be bacteria, viruses, yeast, or fungi. They can cause a fever and other problems, depending on where the infection occurs. When the body's natural defense system is strong, it can often fight the germs and prevent infection. Some cancer treatments can weaken the natural defense system.

***Inflammation*** (in-fluh-MAY-shun): Redness, swelling, pain, and/or a feeling of heat in an area of the body. This is a protective reaction to injury, disease, or irritation of the tissues.

***Internal radiation*** (ray-dee-AY-shun): A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor. Also called brachytherapy, implant radiation, or interstitial radiation therapy.

***Intraoperative radiation therapy*** (in-truh-AH-puh-ruh-tiv ray-dee-AY-shun THAYR-uh-pee): IORT. Radiation treatment aimed directly at a tumor during surgery.

***Laparoscope*** (LAP-uh-ruh-skope): A thin, lighted tube used to look at tissues and organs inside the abdomen.

***Laparoscopy*** (lap-uh-RAHS-koh-pee): The insertion of a thin, lighted tube (called a laparoscope) through the abdominal wall to inspect the inside of the abdomen and remove tissue samples.

**Linear accelerator:** A machine that uses electricity to form a stream of fast-moving subatomic particles. This creates high-energy radiation that may be used to treat cancer. Also called linac and MeV linear accelerator (mega-voltage linear accelerator).

**Local therapy:** Treatment that affects cells in the tumor and the area close to it.

**Lymph node** (limf node): A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes filter lymph (lymphatic fluid), and they store lymphocytes (white blood cells). They are located along lymphatic vessels. Also called a lymph gland.

**Lymphatic system** (lim-FAT-ik SIS-tem): The tissues and organs that produce, store, and carry white blood cells that fight infections and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes, and lymphatic vessels (a network of thin tubes that carry lymph and white blood cells). Lymphatic vessels branch, like blood vessels, into all the tissues of the body.

**Malignant** (muh-LIG-nant): Cancerous. Malignant tumors can invade and destroy nearby tissue and spread to other parts of the body.

**Medical oncologist** (MEH-dih-kul on-KOL-oh-jist): A doctor who specializes in diagnosing and treating cancer using chemotherapy, hormonal therapy, and biological therapy. A medical oncologist often is the main health care provider for someone who has cancer. A medical oncologist also gives supportive care and may coordinate treatment given by other specialists.



**Metastasis** (meh-TAS-tuh-sis): The spread of cancer from one part of the body to another. A tumor formed by cells that have spread is called a “metastatic tumor” or a “metastasis.” The metastatic tumor contains cells that are like those in the original (primary) tumor. The plural form of metastasis is metastases (meh-TAS-tuh-seez).

**Metastatic** (MET-uh-STAT-ik): Having to do with metastasis, which is the spread of cancer from one part of the body to another.

**Monoclonal antibody** (MAH-noh-KLOH-nul AN-tih-BAH-dee): A laboratory-produced substance that can locate and bind to cancer cells wherever they are in the body. Many monoclonal antibodies are used in cancer detection or therapy; each one recognizes a different protein on certain cancer cells. Monoclonal antibodies can be used alone, or they can be used to deliver drugs, toxins, or radioactive material directly to a tumor.

**MRI**: Magnetic resonance imaging (mag-NET-ik REZ-oh-nans IM-uh-jing). A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. These pictures can show the difference between normal and diseased tissue. MRI makes better images of organs and soft tissue than other scanning techniques, such as CT or x-ray. MRI is especially useful for imaging the brain, spine, the soft tissue of joints, and the inside of bones. Also called nuclear magnetic resonance imaging.

**Pathologist** (puh-THOL-oh-jist): A doctor who identifies diseases by studying cells and tissues under a microscope.

**Polyp** (POL-ip): A growth that protrudes from a mucous membrane.

**Polypectomy** (POL-i-PEK-toe-mee): Surgery to remove a polyp.

**Radiation oncologist** (ray-dee-AY-shun on-KOL-oh-jist): A doctor who specializes in using radiation to treat cancer.

**Radiation therapy** (ray-dee-AY-shun THAYR-uh-pee): The use of high-energy radiation from x-rays, gamma rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body near cancer cells (internal radiation therapy, implant radiation, or brachytherapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. Also called radiotherapy.

**Radioactive** (RAY-dee-oh-AK-tiv): Giving off radiation.

**Recurrence:** Cancer that has returned after a period of time during which the cancer could not be detected. The cancer may come back to the same place as the original (primary) tumor or to another place in the body. Also called recurrent cancer.

**Risk factor:** Anything that increases a person's chance of developing a disease. Some examples of risk factors for cancer include a family history of cancer, use of tobacco products, certain foods, being exposed to radiation or other cancer-causing agents, and certain genetic changes.

**Selenium:** An essential dietary mineral.

**Side effect:** A problem that occurs when treatment affects healthy tissues or organs. Some common side effects of cancer treatment are fatigue, pain, nausea, vomiting, decreased blood cell counts, hair loss, and mouth sores.

**Sigmoidoscope** (sig-MOY-duh-skope): A thin, lighted tube used to view the inside of the colon.

**Sigmoidoscopy** (sig-MOY-DAHS-kuh-pee): Inspection of the lower colon using a thin, lighted tube called a sigmoidoscope. Samples of tissue or cells may be collected for examination under a microscope. Also called proctosigmoidoscopy.

**Stoma** (STOH-mah): A surgically created opening from an area inside the body to the outside.

**Surgeon**: A doctor who removes or repairs a part of the body by operating on the patient.

**Surgery** (SER-juh-ree): A procedure to remove or repair a part of the body or to find out whether disease is present. An operation.

**Systemic therapy** (sis-TEM-ik THAYR-uh-pee): Treatment using substances that travel through the bloodstream, reaching and affecting cells all over the body.

**Tumor** (TOO-mer): An abnormal mass of tissue that results when cells divide more than they should or do not die when they should. Tumors may be benign (not cancerous), or malignant (cancerous). Also called neoplasm.

**Ulcerative colitis**: Chronic inflammation of the colon that produces ulcers in its lining. This condition is marked by abdominal pain, cramps, and discharges of pus, blood, and mucus from the bowel.

**Virtual colonoscopy** (koh-lun-AHS-koh-pee): A method under study to examine the colon by taking a series of x-rays (called a CT scan) and using a high-powered computer to reconstruct two-dimensional and three-dimensional pictures of the interior surfaces of the colon from these x-rays. The pictures can be saved,

manipulated to better viewing angles, and reviewed after the procedure, even years later. Also called computed tomography colography.

***X-ray***: A type of high-energy radiation. In low doses, x-rays are used to diagnose diseases by making pictures of the inside of the body. In high doses, x-rays are used to treat cancer.

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## National Cancer Institute Information Resources

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You may want more information for yourself, your family, and your doctor. The following NCI services are available to help you.

### **Telephone**

The NCI's Cancer Information Service (CIS) provides accurate, up-to-date information on cancer to patients and their families, health professionals, and the general public. Information Specialists explain the latest scientific information in plain language and respond in English, Spanish, or on TTY equipment. Calls to the CIS are free.

Telephone: **1-800-4-CANCER** (1-800-422-6237)

TTY: 1-800-332-8615

### **Internet**

The NCI's Web site (<http://www.cancer.gov>) provides information from many NCI sources. It offers current information on cancer prevention, screening, diagnosis, treatment, genetics, supportive care, and ongoing clinical trials. It has information about NCI's research programs and funding opportunities, cancer statistics, and the Institute itself. Information Specialists provide live, online assistance through **LiveHelp** at <http://www.cancer.gov/help>.

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## National Cancer Institute Publications

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The NCI provides information about cancer, including the publications mentioned in this booklet. You can order these materials by telephone, on the Internet, or by mail. You can also read them online and print your own copy.

- **By telephone:** People in the United States and its territories may order these and other NCI publications by calling the NCI's Cancer Information Service at **1-800-4-CANCER**.
- **On the Internet:** Many NCI publications can be viewed, downloaded, and ordered from **<http://www.cancer.gov/publications>**. People in the United States and its territories may use this Web site to order printed copies. This Web site also explains how people outside the United States can mail or fax their requests for NCI booklets.
- **By mail:** NCI publications can be ordered by writing to the address below:

Publications Ordering Service  
National Cancer Institute  
Suite 3035A  
6116 Executive Boulevard, MSC 8322  
Bethesda, MD 20892-8322

### **Cancer of the Colon and Rectum**

- *What You Need To Know About™ Cancer of the Colon and Rectum* (also available in Spanish: *Lo que usted necesita saber sobre™ el cáncer de colon y recto*)

## **Screening**

- “Colorectal Cancer Screening: Questions and Answers” (also available in Spanish: “Exámenes selectivos de detección de cáncer colorrectal: preguntas y respuestas”)

## **Treatment and Supportive Care**

- *Biological Therapy: Treatments That Use Your Immune System to Fight Cancer*
- *Chemotherapy and You: A Guide to Self-Help During Cancer Treatment* (also available in Spanish: *La quimioterapia y usted: una guía de autoayuda durante el tratamiento del cáncer*)
- *Helping Yourself During Chemotherapy: 4 Steps for Patients*
- *Radiation Therapy and You: A Guide to Self-Help During Cancer Treatment* (also available in Spanish: *La radioterapia y usted: una guía de autoayuda durante el tratamiento del cáncer*)
- *Eating Hints for Cancer Patients: Before, During & After Treatment* (also available in Spanish: *Consejos de alimentación para pacientes con cáncer: antes, durante y después del tratamiento*)
- *Understanding Cancer Pain* (also available in Spanish: *El dolor relacionado con el cáncer*)
- *Pain Control: A Guide for People with Cancer and Their Families* (also available in Spanish: *Control del dolor: guía para las personas con cáncer y sus familias*)
- *Get Relief from Cancer Pain*
- “Biological Therapies for Cancer: Questions and Answers” (also available in Spanish: “Terapias biológicas: preguntas y respuestas”)

- “How To Find a Doctor or Treatment Facility If You Have Cancer” (also available in Spanish: “Cómo encontrar a un doctor o un establecimiento de tratamiento si usted tiene cáncer”)

## **Living With Cancer**

- *Facing Forward Series: Life After Cancer Treatment* (also available in Spanish: *Siga adelante: la vida después del tratamiento del cáncer*)
- *Facing Forward Series: Ways You Can Make a Difference in Cancer*
- *Taking Time: Support for People with Cancer*
- *Coping with Advanced Cancer*
- *When Cancer Returns*
- “National Organizations That Offer Services to People With Cancer and Their Families” (also available in Spanish: “Organizaciones nacionales que brindan servicios a las personas con cáncer y a sus familias”)

## **Clinical Trials**

- *Taking Part in Clinical Trials: What Cancer Patients Need To Know* (also available in Spanish: *La participación en los estudios clínicos: lo que los pacientes de cáncer deben saber*)
- *If You Have Cancer: What You Should Know About Clinical Trials* (also available in Spanish: *Si tiene cáncer...lo que debería saber sobre estudios clínicos*)
- *Taking Part in Clinical Trials: Cancer Prevention Studies: What Participants Need To Know* (also available in Spanish: *La participación en los estudios clínicos: estudios para la prevención del cáncer*)



## **Complementary Medicine**

- *Thinking About Complementary and Alternative Medicine: A Guide for People with Cancer*
- “Complementary and Alternative Medicine in Cancer Treatment: Questions and Answers” (also available in Spanish: “La medicina complementaria y alternativa en el tratamiento del cáncer: preguntas y respuestas”)

## **Caregivers**

- *When Someone You Love Is Being Treated for Cancer: Support for Caregivers*
- *When Someone You Love Has Advanced Cancer: Support for Caregivers*
- *Facing Forward: When Someone You Love Has Completed Cancer Treatment*

## **¿Necesita información en español?**

Llame al Servicio de Información sobre el Cáncer y hable en español con un especialista en información. El número es **1-800-422-6237**.

### **The National Cancer Institute**

The National Cancer Institute (NCI) is part of the National Institutes of Health. NCI conducts and supports basic and clinical research in the search for better ways to prevent, diagnose, and treat cancer. NCI also supports the training of scientists and is responsible for communicating its research findings to the medical community and the public.

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