Rectal Cancer Treatment (PDQ®)

Patient Version

Last Modified: 05/12/2014

Table of Contents

General Information About Rectal Cancer

Stages of Rectal Cancer

Recurrent Rectal Cancer

Treatment Option Overview

Treatment Options by Stage
  Stage 0 (Carcinoma in Situ)
  Stage I Rectal Cancer
  Stage II Rectal Cancer
  Stage III Rectal Cancer
  Stage IV and Recurrent Rectal Cancer

To Learn More About Rectal Cancer

Changes to This Summary (05/12/2014)

About This PDQ Summary
  About PDQ
  Purpose of This Summary
  Reviewers and Updates
  Clinical Trial Information
  Permission to Use This Summary
  Disclaimer
  Contact Us

Get More Information From NCI
General Information About Rectal Cancer

Key Points for This Section

- Rectal cancer is a disease in which malignant (cancer) cells form in the tissues of the rectum.
- Age and family history can affect the risk of rectal cancer.
- Signs of rectal cancer include a change in bowel habits or blood in the stool.
- Tests that examine the rectum and colon are used to detect (find) and diagnose rectal cancer.
- Certain factors affect prognosis (chance of recovery) and treatment options.

Rectal cancer is a disease in which malignant (cancer) cells form in the tissues of the rectum.

The rectum is part of the body’s digestive system. The digestive system removes and processes nutrients (vitamins, minerals, carbohydrates, fats, proteins, and water) from foods and helps pass waste material out of the body. The digestive system is made up of the esophagus, stomach, and the small and large intestines. The first 6 feet of the large intestine are called the large bowel or colon. The last 6 inches are the rectum and the anal canal. The anal canal ends at the anus (the opening of the large intestine to the outside of the body).
Age and family history can affect the risk of rectal cancer.

Anything that increases your chance of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors doesn't mean that you will not get cancer. Talk with your doctor if you think you may be at risk. The following are possible risk factors for rectal cancer:

- Being aged 40 or older.
- Having certain hereditary conditions, such as familial adenomatous polyposis (FAP) and hereditary nonpolyposis colon cancer (HNPCC or Lynch syndrome).
- Having a personal history of any of the following:
  - Colorectal cancer.
  - Polyps (small pieces of bulging tissue) in the colon or rectum.
- Cancer of the ovary, endometrium, or breast.
- Having a parent, brother, sister, or child with a history of colorectal cancer or polyps.

**Signs of rectal cancer include a change in bowel habits or blood in the stool.**

These and other signs and symptoms may be caused by rectal cancer or by other conditions. Check with your doctor if you have any of the following:

- A change in bowel habits.
  - Diarrhea.
  - Constipation.
  - Feeling that the bowel does not empty completely.
  - Stools that are narrower or have a different shape than usual.
- Blood (either bright red or very dark) in the stool.
- General abdominal discomfort (frequent gas pains, bloating, fullness, or cramps).
- Change in appetite.
- Weight loss for no known reason.
- Feeling very tired.

**Tests that examine the rectum and colon are used to detect (find) and diagnose rectal cancer.**

Tests used to diagnose rectal cancer include the following:

- **Physical exam and history**: An exam of the body to check general signs of health, including checking for signs of disease, such as lumps or anything else that seems unusual. A history of the patient’s health habits and past illnesses and treatments will also be taken.

- **Digital rectal exam (DRE)**: An exam of the rectum. The doctor or nurse inserts a lubricated, gloved finger into the lower part of the rectum to feel for lumps or anything else that seems unusual. In women, the vagina may also be examined.

- **Colonoscopy**: A procedure to look inside the rectum and colon for polyps (small pieces of bulging tissue), abnormal areas, or cancer. A colonoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove polyps or tissue samples, which are checked under a microscope for signs of cancer.
Colonoscopy. A thin, lighted tube is inserted through the anus and rectum and into the colon to look for abnormal areas.

- **Biopsy**: The removal of cells or tissues so they can be viewed under a microscope to check for signs of cancer. Tumor tissue that is removed during the biopsy may be checked to see if the patient is likely to have the gene mutation that causes HNPCC. This may help to plan treatment. The following tests may be used:
  - **Reverse-transcription polymerase chain reaction (RT-PCR) test**: A laboratory test in which cells in a sample of tissue are studied using chemicals to look for certain changes in the structure or function of genes.
  - **Immunohistochemistry**: A test that uses antibodies to check for certain antigens in a sample of tissue. The antibody is usually linked to a radioactive substance or a dye that causes the tissue to light up under a microscope. This type of test may be used to tell the difference between different types of cancer.
  - **Carcinoembryonic antigen (CEA) assay**: A test that measures the level of CEA in the blood. CEA is released into the bloodstream from both cancer cells and normal cells. When found in higher
than normal amounts, it can be a sign of rectal cancer or other conditions.

**Certain factors affect prognosis (chance of recovery) and treatment options.**

The prognosis (chance of recovery) and treatment options depend on the following:

- The stage of the cancer (whether it affects the inner lining of the rectum only, involves the whole rectum, or has spread to lymph nodes, nearby organs, or other places in the body).
- Whether the tumor has spread into or through the bowel wall.
- Where the cancer is found in the rectum.
- Whether the bowel is blocked or has a hole in it.
- Whether all of the tumor can be removed by surgery.
- The patient’s general health.
- Whether the cancer has just been diagnosed or has recurred (come back).

**Stages of Rectal Cancer**

**Key Points for This Section**

- After rectal cancer has been diagnosed, tests are done to find out if cancer cells have spread within the rectum or to other parts of the body.
- There are three ways that cancer spreads in the body.
- Cancer may spread from where it began to other parts of the body.
- The following stages are used for rectal cancer:
  - Stage 0 (Carcinoma in Situ)
  - Stage I
  - Stage II
  - Stage III
  - Stage IV

**After rectal cancer has been diagnosed, tests are done to find out if cancer cells have spread within the rectum or to other parts of the body.**

The process used to find out whether cancer has spread within the rectum or to other parts of the body is called staging. The information gathered from the staging process determines the stage of the disease. It is important to know the stage in order to plan treatment. The following tests and procedures may be used in the staging process:

- **Chest x-ray**: An x-ray of the organs and bones inside the chest. An x-ray is a type of energy beam that can go through the body and onto film, making a picture of areas inside the body.

- **CT scan (CAT scan)**: A procedure that makes a series of detailed pictures of areas inside the
body, such as the abdomen, pelvis, or chest, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.

- **MRI (magnetic resonance imaging):** A procedure that uses a magnet, radio waves, and a computer to make a series of detailed pictures of areas inside the body. This procedure is also called nuclear magnetic resonance imaging (NMRI).

- **PET scan (positron emission tomography scan):** A procedure to find malignant tumor cells in the body. A small amount of radioactive glucose (sugar) is injected into a vein. The PET scanner rotates around the body and makes a picture of where glucose is being used in the body. Malignant tumor cells show up brighter in the picture because they are more active and take up more glucose than normal cells do.

- **Endorectal ultrasound:** A procedure used to examine the rectum and nearby organs. An ultrasound transducer (probe) is inserted into the rectum and used to bounce high-energy sound waves (ultrasound) off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram. The doctor can identify tumors by looking at the sonogram. This procedure is also called transrectal ultrasound.

**There are three ways that cancer spreads in the body.**

Cancer can spread through tissue, the lymph system, and the blood:

- **Tissue.** The cancer spreads from where it began by growing into nearby areas.
- **Lymph system.** The cancer spreads from where it began by getting into the lymph system. The cancer travels through the lymph vessels to other parts of the body.
- **Blood.** The cancer spreads from where it began by getting into the blood. The cancer travels through the blood vessels to other parts of the body.

**Cancer may spread from where it began to other parts of the body.**

When cancer spreads to another part of the body, it is called metastasis. Cancer cells break away from where they began (the primary tumor) and travel through the lymph system or blood.

- **Lymph system.** The cancer gets into the lymph system, travels through the lymph vessels, and forms a tumor (metastatic tumor) in another part of the body.
- **Blood.** The cancer gets into the blood, travels through the blood vessels, and forms a tumor (metastatic tumor) in another part of the body.

The metastatic tumor is the same type of cancer as the primary tumor. For example, if rectal cancer spreads to the lung, the cancer cells in the lung are actually rectal cancer cells. The disease is metastatic rectal cancer, not lung cancer.

**The following stages are used for rectal cancer:**
Stage 0 (Carcinoma in Situ)

Stage 0 (rectal carcinoma in situ). Abnormal cells are shown in the mucosa of the rectum wall.

In stage 0, abnormal cells are found in the mucosa (innermost layer) of the rectum wall. These abnormal cells may become cancer and spread. Stage 0 is also called carcinoma in situ.

Stage I
Stage I rectal cancer. Cancer has spread from the mucosa of the rectum wall to the muscle layer.

In stage I, cancer has formed in the mucosa (innermost layer) of the rectum wall and has spread to the submucosa (layer of tissue under the mucosa). Cancer may have spread to the muscle layer of the rectum wall.

**Stage II**
Stage II rectal cancer. In stage IIA, cancer has spread through the muscle layer of the rectum wall to the serosa. In stage IIB, cancer has spread through the serosa but has not spread to nearby organs. In stage IIC, cancer has spread through the serosa to nearby organs.

Stage II rectal cancer is divided into stage IIA, stage IIB, and stage IIC.

- Stage IIA: Cancer has spread through the muscle layer of the rectum wall to the serosa (outermost layer) of the rectum wall.
- Stage IIB: Cancer has spread through the serosa (outermost layer) of the rectum wall but has not spread to nearby organs.
- Stage IIC: Cancer has spread through the serosa (outermost layer) of the rectum wall to nearby organs.

**Stage III**

Stage III rectal cancer is divided into stage IIIA, stage IIIB, and stage IIIC.
Stage IIIA rectal cancer. Cancer may have spread through the mucosa of the rectum wall to the submucosa and muscle layer, and has spread to one to three nearby lymph nodes or tissues near the lymph nodes. OR, cancer has spread through the mucosa to the submucosa and four to six nearby lymph nodes.

In stage IIIA:

- Cancer may have spread through the mucosa (innermost layer) of the rectum wall to the submucosa (layer of tissue under the mucosa) and may have spread to the muscle layer of the rectum wall. Cancer has spread to at least one but not more than 3 nearby lymph nodes or cancer cells have formed in tissues near the lymph nodes; or
- Cancer has spread through the mucosa (innermost layer) of the rectum wall to the submucosa (layer of tissue under the mucosa). Cancer has spread to at least 4 but not more than 6 nearby lymph nodes.
Stage IIIB rectal cancer. Cancer has spread through the muscle layer of the rectum wall to the serosa or has spread through the serosa but not to nearby organs; cancer has spread to one to three nearby lymph nodes or to tissues near the lymph nodes. OR, cancer has spread to the muscle layer or to the serosa, and to four to six nearby lymph nodes. OR, cancer has spread through the mucosa to the submucosa and may have spread to the muscle layer; cancer has spread to seven or more nearby lymph nodes.

In stage IIIB:

- Cancer has spread through the muscle layer of the rectum wall to the serosa (outermost layer) of the rectum wall or has spread through the serosa but not to nearby organs. Cancer has spread to at least one but not more than 3 nearby lymph nodes or cancer cells have formed in tissues near the lymph nodes; or
- Cancer has spread to the muscle layer of the rectum wall or to the serosa (outermost layer) of the rectum wall. Cancer has spread to at least 4 but not more than 6 nearby lymph nodes; or
- Cancer has spread through the mucosa (innermost layer) of the rectum wall to the submucosa (layer of tissue under the mucosa) and may have spread to the muscle layer of the rectum wall. Cancer has spread to 7 or more nearby lymph nodes.

Stage IIIC rectal cancer. Cancer has spread through the serosa of the rectum wall but not to nearby organs; cancer has spread to four to six nearby lymph nodes. OR, cancer has spread through the muscle layer to the serosa or has spread through the serosa but not to nearby organs; cancer has spread to seven or more nearby lymph nodes. OR, cancer has spread through the serosa to nearby organs and to one or more nearby lymph nodes or to tissues near the lymph nodes.

In stage IIIC:

- Cancer has spread through the serosa (outermost layer) of the rectum wall but has not spread to nearby organs. Cancer has spread to at least 4 but not more than 6 nearby lymph nodes; or
- Cancer has spread through the muscle layer of the rectum wall to the serosa (outermost layer) of the rectum wall or has spread through the serosa but has not spread to nearby organs. Cancer has spread to 7 or more nearby lymph nodes; or
Cancer has spread through the serosa (outermost layer) of the rectum wall and has spread to nearby organs. Cancer has spread to one or more nearby lymph nodes or cancer cells have formed in tissues near the lymph nodes.

**Stage IV**

Stage IV rectal cancer is divided into stage IVA and stage IVB.

- Stage IVA: Cancer may have spread through the rectum wall and may have spread to nearby organs or lymph nodes. Cancer has spread to one organ that is not near the rectum, such as the liver, lung, or ovary, or to a distant lymph node.
- Stage IVB: Cancer may have spread through the rectum wall and may have spread to nearby organs or lymph nodes. Cancer has spread to more than one organ that is not near the rectum or into the lining of the abdominal wall.
Recurrent Rectal Cancer

Recurrent rectal cancer is cancer that has recurred (come back) after it has been treated. The cancer may come back in the rectum or in other parts of the body, such as the colon, pelvis, liver, or lungs.

Treatment Option Overview

Key Points for This Section

- There are different types of treatment for patients with rectal cancer.
- Four types of standard treatment are used:
  - Surgery
  - Radiation therapy
  - Chemotherapy
  - Targeted therapy
- Other types of treatment are being tested in clinical trials.
- Patients may want to think about taking part in a clinical trial.
- Patients can enter clinical trials before, during, or after starting their cancer treatment.
- Follow-up tests may be needed.

There are different types of treatment for patients with rectal cancer.

Different types of treatment are available for patients with rectal cancer. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials. A treatment clinical trial is a research study meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the standard treatment, the new treatment may become the standard treatment. Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.

Four types of standard treatment are used:

Surgery

Surgery is the most common treatment for all stages of rectal cancer. The cancer is removed using one of the following types of surgery:

- Polypectomy: If the cancer is found in a polyp (a small piece of bulging tissue), the polyp is often removed during a colonoscopy.
- Cryosurgery: A treatment that uses an instrument to freeze and destroy abnormal tissue, such as carcinoma in situ. This type of treatment is also called cryotherapy.
- Local excision: If the cancer is found on the inside surface of the rectum and has not spread into the wall of the rectum, the cancer and a small amount of surrounding healthy tissue is removed.
• Resection: If the cancer has spread into the wall of the rectum, the section of the rectum with cancer and nearby healthy tissue is removed. Sometimes the tissue between the rectum and the abdominal wall is also removed. The lymph nodes near the rectum are removed and checked under a microscope for signs of cancer.

• Radiofrequency ablation: The use of a special probe with tiny electrodes that kill cancer cells. Sometimes the probe is inserted directly through the skin and only local anesthesia is needed. In other cases, the probe is inserted through an incision in the abdomen. This is done in the hospital with general anesthesia.

• Pelvic exenteration: If the cancer has spread to other organs near the rectum, the lower colon, rectum, and bladder are removed. In women, the cervix, vagina, ovaries, and nearby lymph nodes may be removed. In men, the prostate may be removed. Artificial openings (stoma) are made for urine and stool to flow from the body to a collection bag.

After the cancer is removed, the surgeon will either:

• do an anastomosis (sew the healthy parts of the rectum together, sew the remaining rectum to the colon, or sew the colon to the anus);

• make a stoma (an opening) from the rectum to the outside of the body for waste to pass through. This procedure is done if the cancer is too close to the anus and is called a colostomy. A bag is placed around the stoma to collect the waste. Sometimes the colostomy is needed only until the rectum has healed, and then it can be reversed. If the entire rectum is removed, however, the colostomy may be permanent.

Radiation therapy or chemotherapy may be given before surgery to shrink the tumor, make it easier to remove the cancer, and lessen problems with bowel control after surgery. Treatment given before surgery is called neoadjuvant therapy. Even if all the cancer that can be seen at the time of the operation is removed, some patients may be given radiation therapy or chemotherapy after surgery to kill any cancer cells that are left. Treatment given after the surgery, to lower the risk that the cancer will come back, is called adjuvant therapy.

**Radiation therapy**
Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells. There are two types of radiation therapy. External radiation therapy uses a machine outside the body to send radiation toward the cancer. Internal radiation therapy uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

**Chemotherapy**

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping the cells from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly in the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy).

Chemoembolization of the hepatic artery is a type of regional chemotherapy that may be used to treat cancer that has spread to the liver. This is done by blocking the hepatic artery (the main artery that supplies blood to the liver) and injecting anticancer drugs between the blockage and the liver. The liver's arteries then carry the drugs into the liver. Only a small amount of the drug reaches other parts of the body. The blockage may be temporary or permanent, depending on what is used to block the artery. The liver continues to receive some blood from the hepatic portal vein, which carries blood from the stomach and intestine.

The way the chemotherapy is given depends on the type and stage of the cancer being treated.

See Drugs Approved for Rectal Cancer for more information.

**Targeted therapy**

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells without harming normal cells. Monoclonal antibody therapy is a type of targeted therapy being used for the treatment of rectal cancer.

Monoclonal antibody therapy uses antibodies made in the laboratory from a single type of immune system cell. These antibodies can identify substances on cancer cells or normal substances that may help cancer cells grow. The antibodies attach to the substances and kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by infusion. They may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells.

See Drugs Approved for Rectal Cancer for more information.

**Other types of treatment are being tested in clinical trials.**

Information about clinical trials is available from the NCI Web site.

**Patients may want to think about taking part in a clinical trial.**

For some patients, taking part in a clinical trial may be the best treatment choice. Clinical trials are part of the cancer research process. Clinical trials are done to find out if new cancer treatments are safe and
effective or better than the standard treatment.

Many of today’s standard treatments for cancer are based on earlier clinical trials. Patients who take part in a clinical trial may receive the standard treatment or be among the first to receive a new treatment.

Patients who take part in clinical trials also help improve the way cancer will be treated in the future. Even when clinical trials do not lead to effective new treatments, they often answer important questions and help move research forward.

**Patients can enter clinical trials before, during, or after starting their cancer treatment.**

Some clinical trials only include patients who have not yet received treatment. Other trials test treatments for patients whose cancer has not gotten better. There are also clinical trials that test new ways to stop cancer from recurring (coming back) or reduce the side effects of cancer treatment.

Clinical trials are taking place in many parts of the country. See the Treatment Options section that follows for links to current treatment clinical trials. These have been retrieved from NCI’s listing of clinical trials.

**Follow-up tests may be needed.**

Some of the tests that were done to diagnose the cancer or to find out the stage of the cancer may be repeated. Some tests will be repeated in order to see how well the treatment is working. Decisions about whether to continue, change, or stop treatment may be based on the results of these tests. This is sometimes called re-staging.

Some of the tests will continue to be done from time to time after treatment has ended. The results of these tests can show if your condition has changed or if the cancer has recurred (come back). These tests are sometimes called follow-up tests or check-ups.

After treatment for rectal cancer, a blood test to measure amounts of carcinoembryonic antigen (a substance in the blood that may be increased when cancer is present) may be done to see if the cancer has come back.

**Treatment Options by Stage**

**Stage 0 (Carcinoma in Situ)**

Treatment of stage 0 may include the following:

- Simple polypectomy.
- Local excision.
- Resection (when the tumor is too large to remove by local excision).
- Internal or external radiation therapy.
Stage I Rectal Cancer

Treatment of stage I rectal cancer may include the following:

- Local excision.
- Resection.
- Resection with radiation therapy and chemotherapy before or after surgery.

Stage II Rectal Cancer

Treatment of stage II rectal cancer may include the following:

- Resection plus a combination of chemotherapy and radiation therapy before or after surgery.
- Resection with or without chemotherapy after surgery.

Stage III Rectal Cancer

Treatment of stage III rectal cancer may include the following:

- Resection plus a combination of chemotherapy and radiation therapy before or after surgery.
- Resection with or without chemotherapy after surgery.
Stage IV and Recurrent Rectal Cancer

Treatment of stage IV and recurrent rectal cancer may include the following:

- Resection with or without a combination of radiation therapy and chemotherapy before surgery.
- Resection or pelvic exenteration, as palliative therapy to relieve symptoms and improve the quality of life.
- Radiation therapy, chemotherapy, or a combination of both, as palliative therapy to relieve symptoms and improve the quality of life.
- Chemotherapy to control the growth of the tumor.
- Placement of a stent to help keep the rectum open if it is partly blocked by the tumor, as palliative therapy to relieve symptoms and improve the quality of life.
- Systemic chemotherapy with or without monoclonal antibody therapy, such as bevacizumab.
- A clinical trial of a new anticancer drug.

Treatment of rectal cancer that has spread to other organs depends on which organ the cancer has spread to.

- Treatment for areas of cancer that have spread to the liver includes the following:
  - Cryosurgery or radiofrequency ablation.
  - Chemoembolization or systemic chemotherapy.
  - Internal radiation therapy.
  - Surgery to remove the tumor. Chemotherapy may be given before surgery to shrink the tumor.
  - A clinical trial of chemoembolization combined with radiation therapy to the tumors in the liver.
- Treatment for areas of cancer that has spread to the lung or ovaries is surgery.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with stage IV rectal cancer and recurrent rectal cancer. For more specific results, refine the search by using other search features, such as the location of the trial, the type of treatment, or the name of the drug. Talk with your doctor about clinical trials that may be right for you. General information about clinical trials is available from the NCI Web site.

To Learn More About Rectal Cancer

For more information from the National Cancer Institute about rectal cancer, see the following:

- Colon and Rectal Cancer Home Page
- Colorectal Cancer Prevention
- Colorectal Cancer Screening
- Tests to Detect Colorectal Cancer and Polyps
- Unusual Cancers of Childhood
- Cryosurgery in Cancer Treatment: Questions and Answers
- Drugs Approved for Rectal Cancer
For general cancer information and other resources from the National Cancer Institute, see the following:

- Cancer Staging
- Chemotherapy and You: Support for People With Cancer
- Radiation Therapy and You: Support for People With Cancer
- Coping with Cancer: Supportive and Palliative Care
- Questions to Ask Your Doctor About Cancer
- Cancer Library
- Information For Survivors/Caregivers/Advocates

Changes to This Summary (05/12/2014)

The PDQ cancer information summaries are reviewed regularly and updated as new information becomes available. This section describes the latest changes made to this summary as of the date above.

Editorial changes were made to this summary.

About This PDQ Summary

About PDQ

Physician Data Query (PDQ) is the National Cancer Institute’s (NCI’s) comprehensive cancer information database. The PDQ database contains summaries of the latest published information on cancer prevention, detection, genetics, treatment, supportive care, and complementary and alternative medicine. Most summaries come in two versions. The health professional versions have detailed information written in technical language. The patient versions are written in easy-to-understand, nontechnical language. Both versions have cancer information that is accurate and up to date and most versions are also available in Spanish.

PDQ is a service of the NCI. The NCI is part of the National Institutes of Health (NIH). NIH is the federal government’s center of biomedical research. The PDQ summaries are based on an independent review of the medical literature. They are not policy statements of the NCI or the NIH.

Purpose of This Summary

This PDQ cancer information summary has current information about the treatment of rectal cancer. It is meant to inform and help patients, families, and caregivers. It does not give formal guidelines or recommendations for making decisions about health care.

Reviewers and Updates

Editorial Boards write the PDQ cancer information summaries and keep them up to date. These Boards are made up of experts in cancer treatment and other specialties related to cancer. The summaries are
reviewed regularly and changes are made when there is new information. The date on each summary ("Date Last Modified") is the date of the most recent change.

The information in this patient summary was taken from the health professional version, which is reviewed regularly and updated as needed, by the PDQ Adult Treatment Editorial Board.

Clinical Trial Information

A clinical trial is a study to answer a scientific question, such as whether one treatment is better than another. Trials are based on past studies and what has been learned in the laboratory. Each trial answers certain scientific questions in order to find new and better ways to help cancer patients. During treatment clinical trials, information is collected about the effects of a new treatment and how well it works. If a clinical trial shows that a new treatment is better than one currently being used, the new treatment may become "standard." Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment.

Clinical trials are listed in PDQ and can be found online at NCI's Web site. Many cancer doctors who take part in clinical trials are also listed in PDQ. For more information, call the Cancer Information Service 1-800-4-CANCER (1-800-422-6237).

Permission to Use This Summary

PDQ is a registered trademark. The content of PDQ documents can be used freely as text. It cannot be identified as an NCI PDQ cancer information summary unless the whole summary is shown and it is updated regularly. However, a user would be allowed to write a sentence such as “NCI’s PDQ cancer information summary about breast cancer prevention states the risks in the following way: [include excerpt from the summary].”

The best way to cite this PDQ summary is:


Images in this summary are used with permission of the author(s), artist, and/or publisher for use in the PDQ summaries only. If you want to use an image from a PDQ summary and you are not using the whole summary, you must get permission from the owner. It cannot be given by the National Cancer Institute. Information about using the images in this summary, along with many other images related to cancer can be found in Visuals Online. Visuals Online is a collection of more than 2,000 scientific images.

Disclaimer

The information in these summaries should not be used to make decisions about insurance reimbursement. More information on insurance coverage is available on Cancer.gov on the Coping with Cancer: Financial, Insurance, and Legal Information page.

Contact Us
More information about contacting us or receiving help with the Cancer.gov Web site can be found on our Contact Us for Help page. Questions can also be submitted to Cancer.gov through the Web site’s Contact Form.

**Get More Information From NCI**

**Call 1-800-4-CANCER**

For more information, U.S. residents may call the National Cancer Institute’s (NCI’s) Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237) Monday through Friday from 8:00 a.m. to 8:00 p.m., Eastern Time. A trained Cancer Information Specialist is available to answer your questions.

**Chat online**

The NCI's LiveHelp® online chat service provides Internet users with the ability to chat online with an Information Specialist. The service is available from 8:00 a.m. to 11:00 p.m. Eastern time, Monday through Friday. Information Specialists can help Internet users find information on NCI Web sites and answer questions about cancer.

**Write to us**

For more information from the NCI, please write to this address:

NCI Public Inquiries Office  
9609 Medical Center Dr.  
Room 2E532 MSC 9760  
Bethesda, MD 20892-9760

**Search the NCI Web site**

The NCI Web site provides online access to information on cancer, clinical trials, and other Web sites and organizations that offer support and resources for cancer patients and their families. For a quick search, use the search box in the upper right corner of each Web page. The results for a wide range of search terms will include a list of "Best Bets," editorially chosen Web pages that are most closely related to the search term entered.

There are also many other places to get materials and information about cancer treatment and services. Hospitals in your area may have information about local and regional agencies that have information on finances, getting to and from treatment, receiving care at home, and dealing with problems related to cancer treatment.

**Find Publications**

The NCI has booklets and other materials for patients, health professionals, and the public. These publications discuss types of cancer, methods of cancer treatment, coping with cancer, and clinical trials. Some publications provide information on tests for cancer, cancer causes and prevention, cancer statistics, and NCI research activities. NCI materials on these and other topics may be ordered online or printed directly from the NCI Publications Locator. These materials can also be ordered by telephone.
from the Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237).