

National Cancer Institute

at the National Institutes of Health

Small Intestine Cancer Treatment (PDQ®)

Patient Version

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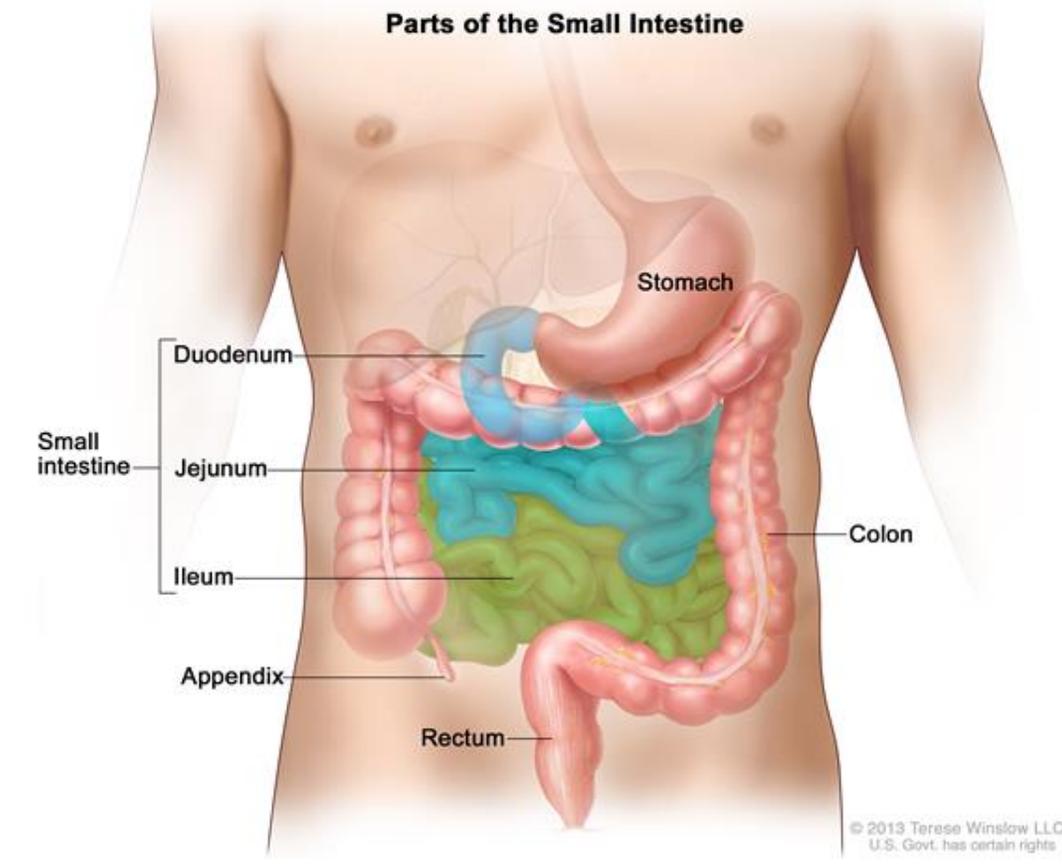


Key Points for This Section

- Small intestine cancer is a rare disease in which malignant (cancer) cells form in the tissues of the small intestine.
- There are five types of small intestine cancer.
- Diet and health history can affect the risk of developing small intestine cancer.
- Signs and symptoms of small intestine cancer include unexplained weight loss and abdominal pain.
- Tests that examine the small intestine are used to detect (find), diagnose, and stage small intestine cancer.
- Certain factors affect prognosis (chance of recovery) and treatment options.

Small intestine cancer is a rare disease in which malignant (cancer) cells form in the tissues of the small intestine.

The small intestine is part of the body's digestive system, which also includes the esophagus, stomach, and large intestine. 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 small intestine is a long tube that connects the stomach to the large intestine. It folds many times to fit inside the abdomen.



The small intestine connects the stomach and the colon. It includes the duodenum, jejunum, and ileum.

There are five types of small intestine cancer.

The types of cancer found in the small intestine are adenocarcinoma, sarcoma, carcinoid tumors, gastrointestinal stromal tumor, and lymphoma. This summary discusses adenocarcinoma and leiomyosarcoma (a type of sarcoma).

Adenocarcinoma starts in glandular cells in the lining of the small intestine and is the most common type of small intestine cancer. Most of these tumors occur in the part of the small intestine near the stomach. They may grow and block the intestine.

Leiomyosarcoma starts in the smooth muscle cells of the small intestine. Most of these tumors occur in the part of the small intestine near the large intestine.

See the following PDQ summaries for more information on small intestine cancer:

- Adult Soft Tissue Sarcoma Treatment
- Childhood Soft Tissue Sarcoma Treatment
- Adult Non-Hodgkin Lymphoma Treatment
- Childhood Non-Hodgkin Lymphoma Treatment
- Gastrointestinal Carcinoid Tumors Treatment

- Gastrointestinal Stromal Tumors Treatment

Diet and health history can affect the risk of developing small intestine cancer.

Anything that increases your risk 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. Risk factors for small intestine cancer include the following:

- Eating a high-fat diet.
- Having Crohn disease.
- Having celiac disease.
- Having familial adenomatous polyposis (FAP).

Signs and symptoms of small intestine cancer include unexplained weight loss and abdominal pain.

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

- Pain or cramps in the middle of the abdomen.
- Weight loss with no known reason.
- A lump in the abdomen.
- Blood in the stool.

Tests that examine the small intestine are used to detect (find), diagnose, and stage small intestine cancer.

Procedures that make pictures of the small intestine and the area around it help diagnose small intestine cancer and show how far the cancer has spread. The process used to find out if cancer cells have spread within and around the small intestine is called staging.

In order to plan treatment, it is important to know the type of small intestine cancer and whether the tumor can be removed by surgery. Tests and procedures to detect, diagnose, and stage small intestine cancer are usually done at the same time. The following tests and procedures may be used:

- **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.
- **Blood chemistry studies** : A procedure in which a blood sample is checked to measure the amounts of certain substances released into the blood by organs and tissues in the body. An unusual (higher or lower than normal) amount of a substance can be a sign of disease in the organ or tissue that produces it.
- **Liver function tests** : A procedure in which a blood sample is checked to measure the amounts of certain substances released into the blood by the liver. A higher than normal amount of a substance can be a sign of liver disease that may be caused by small intestine cancer.

- **Endoscopy** : A procedure to look at organs and tissues inside the body to check for abnormal areas. There are different types of endoscopy:
 - **Upper endoscopy** : A procedure to look at the inside of the esophagus, stomach, and duodenum (first part of the small intestine, near the stomach). An endoscope is inserted through the mouth and into the esophagus, stomach, and duodenum. An endoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue samples, which are checked under a microscope for signs of cancer.
 - **Capsule endoscopy** : A procedure to look at the inside of the small intestine. A capsule that is about the size of a large pill and contains a light and a tiny wireless camera is swallowed by the patient. The capsule travels through the digestive tract, including the small intestine, and sends many pictures of the inside of the digestive tract to a recorder that is worn around the waist or over the shoulder. The pictures are sent from the recorder to a computer and viewed by the doctor who checks for signs of cancer. The capsule passes out of the body during a bowel movement.
 - **Double balloon endoscopy** : A procedure to look at the inside of the small intestine. A special instrument made up of two tubes (one inside the other) is inserted through the mouth or rectum and into the small intestine. The inside tube (an endoscope with a light and lens for viewing) is moved through part of the small intestine and a balloon at the end of it is inflated to keep the endoscope in place. Next, the outer tube is moved through the small intestine to reach the end of the endoscope, and a balloon at the end of the outer tube is inflated to keep it in place. Then, the balloon at the end of the endoscope is deflated and the endoscope is moved through the next part of the small intestine. These steps are repeated many times as the tubes move through the small intestine. The doctor is able to see the inside of the small intestine through the endoscope and use a tool to remove samples of abnormal tissue. The tissue samples are checked under a microscope for signs of cancer. This procedure may be done if the results of a capsule endoscopy are abnormal. This procedure is also called double balloon enteroscopy.
- **Laparotomy** : A surgical procedure in which an incision (cut) is made in the wall of the abdomen to check the inside of the abdomen for signs of disease. The size of the incision depends on the reason the laparotomy is being done. Sometimes organs or lymph nodes are removed or tissue samples are taken and checked under a microscope for signs of disease.
- **Biopsy** : The removal of cells or tissues so they can be viewed under a microscope to check for signs of cancer. This may be done during an endoscopy or laparotomy. The sample is checked by a pathologist to see if it contains cancer cells.
- **Upper GI series with small bowel follow-through**: A series of x-rays of the esophagus, stomach, and small bowel. The patient drinks a liquid that contains barium (a silver-white metallic compound). The liquid coats the esophagus, stomach, and small bowel. X-rays are taken at different times as the barium travels through the upper GI tract and small bowel.
- **CT scan (CAT scan)**: A procedure that makes a series of detailed pictures of areas inside the

body, 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).

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

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

- The type of small intestine cancer.
- Whether the cancer is in the inner lining of the small intestine only or has spread into or beyond the wall of the small intestine.
- Whether the cancer has spread to other places in the body, such as the lymph nodes, liver, or peritoneum (tissue that lines the wall of the abdomen and covers most of the organs in the abdomen).
- Whether the cancer can be completely removed by surgery.
- Whether the cancer is newly diagnosed or has recurred.

Stages of Small Intestine Cancer

Key Points for This Section

- Tests and procedures to stage small intestine cancer are usually done at the same time as diagnosis.
- There are three ways that cancer spreads in the body.
- Cancer may spread from where it began to other parts of the body.
- Small intestine cancer is grouped according to whether or not the tumor can be completely removed by surgery.

Tests and procedures to stage small intestine cancer are usually done at the same time as diagnosis.

Staging is used to find out how far the cancer has spread, but treatment decisions are not based on stage. See the General Information section for a description of tests and procedures used to detect, diagnose, and stage small intestine cancer.

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 small intestine cancer spreads to the liver, the cancer cells in the liver are actually small intestine cancer cells. The disease is metastatic small intestine cancer, not liver cancer.

Small intestine cancer is grouped according to whether or not the tumor can be completely removed by surgery.

Treatment depends on whether the tumor can be removed by surgery and if the cancer is being treated as a primary tumor or is metastatic cancer.

Recurrent Small Intestine Cancer

Recurrent small intestine cancer is cancer that has recurred (come back) after it has been treated. The cancer may come back in the small intestine or in other parts of the body.

Treatment Option Overview

Key Points for This Section

- There are different types of treatment for patients with small intestine cancer.
- Three types of standard treatment are used:
 - Surgery
 - Radiation therapy
 - Chemotherapy
- New types of treatment are being tested in clinical trials.
 - Biologic therapy
 - Radiation therapy with radiosensitizers
- 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 small intestine cancer.

Different types of treatments are available for patients with small intestine 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.

Three types of standard treatment are used:

Surgery

Surgery is the most common treatment of small intestine cancer. One of the following types of surgery may be done:

- **Resection:** Surgery to remove part or all of an organ that contains cancer. The resection may include the small intestine and nearby organs (if the cancer has spread). The doctor may remove the section of the small intestine that contains cancer and perform an anastomosis (joining the cut ends of the intestine together). The doctor will usually remove lymph nodes near the small intestine and examine them under a microscope to see whether they contain cancer.
- **Bypass:** Surgery to allow food in the small intestine to go around (bypass) a tumor that is blocking the intestine but cannot be removed.

Even if the doctor removes all the cancer that can be seen at the time of the surgery, some patients may be given radiation therapy 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 or keep them from growing. 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 them 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 into the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy). The way the chemotherapy is given depends on the type and stage of the cancer being treated.

New types of treatment are being tested in clinical trials.

This summary section describes treatments that are being studied in clinical trials. It may not mention every new treatment being studied. Information about clinical trials is available from the NCI Web site.

Biologic therapy

Biologic therapy is a treatment that uses the patient's immune system to fight cancer. Substances made by the body or made in a laboratory are used to boost, direct, or restore the body's natural defenses against cancer. This type of cancer treatment is also called biotherapy or immunotherapy.

Radiation therapy with radiosensitizers

Radiosensitizers are drugs that make tumor cells more sensitive to radiation therapy. Combining radiation therapy with radiosensitizers may kill more tumor cells.

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.

Treatment Options for Small Intestine Cancer

Small Intestine Adenocarcinoma

When possible, treatment of small intestine adenocarcinoma will be surgery to remove the tumor and some of the normal tissue around it.

Treatment of small intestine adenocarcinoma that cannot be removed by surgery may include the following:

- Surgery to bypass the tumor.
- Radiation therapy as palliative therapy to relieve symptoms and improve the patient's quality of life.
- A clinical trial of radiation therapy with radiosensitizers, with or without chemotherapy.
- A clinical trial of new anticancer drugs.
- A clinical trial of biologic therapy.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with small intestine adenocarcinoma. 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.

Small Intestine Leiomyosarcoma

When possible, treatment of small intestine leiomyosarcoma will be surgery to remove the tumor and some of the normal tissue around it.

Treatment of small intestine leiomyosarcoma that cannot be removed by surgery may include the following:

- Surgery (to bypass the tumor) and radiation therapy.
- Surgery, radiation therapy, or chemotherapy as palliative therapy to relieve symptoms and improve the patient's quality of life.
- A clinical trial of new anticancer drugs.
- A clinical trial of biologic therapy.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with small intestine leiomyosarcoma. 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.

Recurrent Small Intestine Cancer

Treatment of recurrent small intestine cancer that has spread to other parts of the body is usually a clinical trial of new anticancer drugs or biologic therapy.

Treatment of locally recurrent small intestine cancer may include the following:

- Surgery.
- Radiation therapy or chemotherapy as palliative therapy to relieve symptoms and improve the patient's quality of life.
- A clinical trial of radiation therapy with radiosensitizers, with or without chemotherapy.

Check for U.S. clinical trials from NCI's list of cancer clinical trials that are now accepting patients with recurrent small intestine 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 Small Intestine Cancer

For more information from the National Cancer Institute about small intestine cancer, see the Small Intestine Cancer Home Page.

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 (10/24/2013)

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 small intestine 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).

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The best way to cite this PDQ summary is:

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<http://cancer.gov/cancertopics/pdq/treatment/smallintestine/Patient>. Accessed <MM/DD/YYYY>.

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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
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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).