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What is Cancer Surgery? [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 09/2014



Watch the [Cancer.Net Video: Basics of Cancer Surgery with Robert Sticca, MD](#)[3], adapted from this content.

Key Messages:

- Surgery is commonly used for cancer as a treatment and to diagnose or learn more about the cancer.
- Different types of surgery are used depending on the type of cancer, where it is located, and the goals of surgery. Some types are also less invasive and have a shorter recovery time.
- Where you have surgery and if or how long you need to stay in the hospital afterwards depends on the type of surgery you will have and how much time it will take to recover.

Surgery is the removal of the tumor and surrounding tissue during an operation. A doctor who specializes in treating cancer using surgery is called a surgical oncologist. Surgery is the oldest type of cancer therapy and remains an effective treatment for many types of cancer today. The goals of surgery vary. It is often used to remove all or some of the cancerous tissue after diagnosis. However, it can also be used to diagnose cancer, find out where the cancer is located, whether it has spread, and whether it is affecting the functions of other organs in the body. In addition, surgery can be helpful to restore the body's appearance or function or to relieve side effects.

The location where you have surgery depends on the extent of the surgery and how much recovery is needed. Surgery may be performed in a doctor's office, clinic, surgery center, or hospital. Outpatient surgery means that you do not need to stay overnight in the hospital before or after surgery. Inpatient surgery means that you do need to stay in the hospital overnight or longer to recover after the surgery.

Types of conventional surgery

Diagnostic. For most types of cancer, a biopsy is the only way to make a definitive diagnosis. During a surgical biopsy, the surgeon makes a cut in the skin and removes some or all of the suspicious tissue. There are two main types of surgical biopsies. An incisional biopsy is the removal of a piece of the suspicious area for examination. An excisional biopsy is the removal of the entire suspicious area, such as an unusual mole or a lump. [Learn more about types of biopsies and what to expect during the procedure](#)

[4].

After a biopsy, the tissue removed is examined under a microscope by a pathologist. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. The pathologist provides a pathology report [5] to the surgeon or oncologist, who makes the diagnosis.

Staging. Staging surgery is performed to find out the size of the tumor and if or where it has spread. This often includes removing some lymph nodes, which are tiny, bean-shaped organs that help fight infection, near the cancer to find out if it has spread there. Together with the physical examination, biopsy, and results of laboratory and imaging tests, this surgery helps the doctor decide which kind of treatment is best and predict the patient's prognosis, which is the chance of recovery.

Tumor removal, also called curative or primary surgery. The most common type of cancer surgery is the removal of the tumor and some of the tissue surrounding the tumor. The tissue surrounding the tumor is called the margin. Tumor removal may be the only treatment, or it may be combined with chemotherapy [6], radiation therapy [7], or other treatments, which may be given before or after surgery.

Conventional surgery requires large cuts, called incisions, through skin, muscle, and sometimes bone. However, in some situations, surgeons can use surgical techniques that are less invasive, which may speed recovery and reduce pain afterwards. Learn more about types of minimally invasive surgery below.

Debulking. When the complete removal of a tumor is not possible or might cause excessive damage to the body, surgery is used to remove as much of the tumor as possible. Other treatments, such as radiation therapy or chemotherapy, may sometimes also be used to shrink the remaining cancer.

Palliation. Palliative surgery is used to relieve side effects caused by a tumor. It plays an important role in improving quality of life for patients with advanced cancer or widespread disease. Examples include the following:

- Surgery may be used to help relieve pain or restore physical function if a tumor presses on a nerve or the spinal cord, blocks the bowel or intestines, or creates pressure or blockage elsewhere in the body.
- Surgery may be used to help stop bleeding. Certain cancers are more likely to cause bleeding because they occur in areas with a high concentration of blood vessels, such as the uterus, or organs in which the tumors are fragile and can easily bleed when food and waste products pass through, such as the esophagus, stomach, and bowel. In addition, bleeding may be a side effect of some drugs used to treat cancer. When surgery is needed to stop bleeding, a common technique is suture ligation, which involves tying blood vessels using surgical thread.
- Surgery may be used to insert a feeding tube or tubes that deliver medications. If the cancer or cancer treatment has made it difficult to eat, a feeding tube may be inserted directly into the stomach or intestine through the abdominal wall. Or a tube may be inserted into a vein to deliver pain medication or chemotherapy [8].

- Surgery may be used to prevent broken bones. Bones weakened by cancer or cancer treatment can break easily and often heal slowly. Inserting a metal rod may help prevent fractures of weak bones and relieve pain during healing.

Reconstruction. After primary cancer surgery, surgery may be an option to restore the body's appearance or function. This is called reconstructive or plastic surgery. Reconstructive surgery may be done at the same time as surgery to remove the tumor. Or, it may be done later after a person has healed or received additional treatment. Examples of reconstructive surgery include [breast reconstruction after a mastectomy](#) [9] and surgery to restore a person's appearance and function after surgery to the [head and neck area](#) [10].

Prevention. Some surgery is performed to reduce the risk of developing cancer. For example, doctors often recommend the removal of precancerous polyps in the colon to prevent colon cancer. In addition, women with a strong [family history of breast or ovarian cancers](#) [11] or known mutations to the *BRCA1* and *BRCA2* breast and ovarian cancer genes may decide to have a mastectomy, which is the removal of the breast, or an oophorectomy, which is the removal of the ovaries, to lower the risk of developing breast or ovarian cancer in the future.

Learn more about types of surgery that are commonly used for [specific cancer types](#) [12].

Types of minimally invasive surgery

As mentioned above, conventional surgery often requires large incisions. However, in some situations, surgery can be performed through one or more small incisions, which typically results in shorter recovery times and less pain afterwards. Below are some examples of minimally invasive procedures and surgeries:

Laparoscopic surgery. The doctor performs surgery through small incisions in the skin using a thin, lighted tube with a camera. For example, a laparoscopy refers to a minimally invasive surgery of the abdomen, and mediastinoscopy and thoracoscopy are terms used when the same type of procedure is performed in the chest.

Laser surgery. The doctor uses a narrow beam of high-intensity light to remove cancerous tissue.

Cryosurgery. The doctor uses liquid nitrogen to freeze and kill abnormal cells.

Mohs micrographic surgery, also called microscopically controlled surgery. The dermatologist shaves off a skin cancer, one layer at a time, until all cells in a layer appear to be normal cells when viewed under a microscope.

Endoscopy. The doctor inserts a thin, flexible tube with a light and camera on the tip, called an endoscope, into an opening of the body (such as the mouth, rectum, or vagina) to examine the internal organs. During an endoscopic procedure, it is possible to remove samples of potentially abnormal tissue for further examination. Learn more about [types of endoscopy](#) [13].

More Information

How Cancer is Treated [14]

What to Expect When Having Surgery [15]

Side Effects of Surgery [16]

Additional Resource

American College of Surgeons: Surgical Patient Education for a Better Recovery [17]

Links:

[1] <http://www.cancer.net/navigating-cancer-care/how-cancer-treated/surgery/what-cancer-surgery>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/27096>

[4] <http://www.cancer.net/node/24406>

[5] <http://www.cancer.net/node/24715>

[6] <http://www.cancer.net/node/24723>

[7] <http://www.cancer.net/node/24728>

[8] <http://www.cancer.net/node/24463>

[9] <http://www.cancer.net/node/18626>

[10] <http://www.cancer.net/node/18915>

[11] <http://www.cancer.net/node/18922>

[12] <http://www.cancer.net/cancer-types>

[13] <http://www.cancer.net/node/24511>

[14] <http://www.cancer.net/node/25071>

[15] <http://www.cancer.net/node/24462>

[16] <http://www.cancer.net/node/24675>

[17] <http://www.facs.org/patienteducation/index.html>