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How Surgery Is Used for Cancer

Surgery is used to prevent, diagnose, stage, and treat cancer. Surgery can also relieve (palliate) discomfort or problems related to cancer. Sometimes, one surgery can take care of more than one of these goals. In other cases, different operations may be needed over time. You will find specific cancer operations discussed in treatment information for each cancer type.

Surgery to diagnose cancer

Surgery is one way to help diagnose cancer. In most cases, the only way to know if a person has cancer and what kind of cancer it is, is by taking out a small piece of tissue (called a *sample*) and testing it. The diagnosis is made by looking at cells from the sample with a microscope or by doing other lab tests on it.

This procedure is called a *biopsy*. Biopsies taken during surgery are often referred to as *surgical biopsies*.

How a sample is taken depends on where the tumor is and what type of cancer is suspected. For example, the method used for prostate biopsies is different from those used for lung biopsies.

Learn more about different types of biopsies in [Testing Biopsy and Cytology Specimens for Cancer](#)¹.

Surgery to stage cancer

Staging surgery is done to find out how much cancer there is and how far it has spread. During this surgery, the area around the cancer including lymph nodes and nearby organs is examined. This is important because it provides information to guide future

treatment decisions and predict how people will respond to treatment. To learn more about this, see [Cancer Staging](#)².

Curative surgery

Curative or primary surgery is usually done when cancer is found in only one part of the body, and it's likely that all of the cancer can be removed. It is called "curative" because the purpose of the surgery is to remove all of the cancer completely. In this case, surgery can be the main treatment. It may be used along with other treatments like [chemotherapy](#)³ or [radiation therapy](#)⁴ given before or after the operation, but surgery can also be used alone.

Surgery to debulk cancer

Debulking surgery is used to remove some, but not all, of the cancer. It's called "debulking" because the tumor being treated is a large, bulky object and might be located very close to important organs or tissues. So, "de-bulking" the tumor can help make it smaller. This surgery is sometimes done when taking out the entire tumor would cause too much damage to nearby organs or tissues. For example, it may be used for advanced [cancer of the ovary](#)⁵ and some [lymphomas](#)⁶. In these cases, the doctor may take out as much of the tumor as possible and then treat what's left with radiation, chemotherapy, or other treatments.

Palliative surgery

This type of surgery is used to treat problems caused by [advanced cancer](#)⁷. Palliative surgery can be used with other treatments to correct a problem that's causing discomfort or disability. For example, some cancers in the belly (abdomen) may grow large enough to block (obstruct) the intestine. If this happens, surgery can be used to remove the blockage. Palliative surgery may also be used to treat [pain](#)⁸ when the pain is hard to control with medicine. Palliative surgery helps ease problems caused by cancer and helps people feel better, but because the cancer is usually in an advanced stage, it's not done to treat or cure the cancer itself.

Supportive surgery

Supportive surgery is done to help make it easier for people to get other types of treatment. For example, a [vascular access device](#)⁹ such as a Port-A-Cath[®] or Infusaport[®] is a thin, flexible tube that can be surgically placed into a large vein and connected to a small drum-like device that's placed just under the skin. A needle is put

into the drum of the port to give treatments and draw blood, instead of putting needles in the hands and arms each time IV fluids, blood transfusions, or treatments are given.

Restorative (reconstructive) surgery

Reconstructive surgery is used to improve the way a person looks after major cancer surgery. It's also used to restore the function of an organ or body part after surgery. Examples include [breast reconstruction after mastectomy](#)¹⁰ or the use of tissue flaps, bone grafts, or prosthetic (metal or plastic) materials after [surgery for head and neck cancers](#)¹¹.

Preventive (prophylactic) surgery

Preventive or prophylactic surgery is done to remove body tissue that's likely to become cancer – even though there are no signs of cancer at the time of the surgery.

Sometimes an entire organ is removed when a person has a condition that puts them at very high risk for having cancer there. The surgery is done to reduce cancer risk and help prevent the chance of cancer, but it doesn't guarantee cancer prevention.

For example, some women with a strong family history of breast cancer have an inherited change in a breast cancer gene (called *BRCA1* or *BRCA2*). Because the risk of breast cancer is very high, removing the breasts ([prophylactic mastectomy](#)¹²) may be considered. This means the breasts are removed before cancer is found.

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