

# Ovarian Cancer



**Ovarian cancer is a type of cancer that begins in the ovaries. The female reproductive system contains two ovaries, one on each side of the uterus. The ovaries — each about the size of an almond — produce eggs (ova) as well as the hormones estrogen and progesterone.**

**Ovarian cancer often goes undetected until it has spread within the pelvis and abdomen. At this late stage, ovarian cancer is more difficult to treat. Early-stage ovarian cancer, in which the disease is confined to the ovary, is more likely to be treated successfully.**

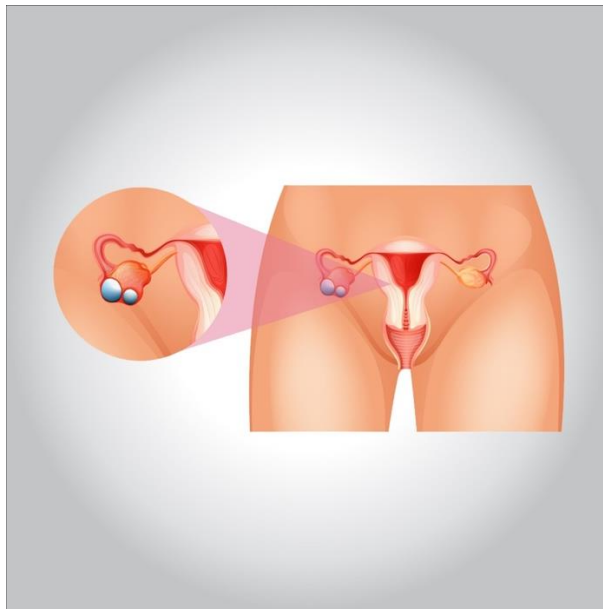
**Surgery and chemotherapy are generally used to treat ovarian cancer.**

# Symptoms

**Early-stage ovarian cancer rarely causes any symptoms. Advanced-stage ovarian cancer may cause few and nonspecific symptoms that are often mistaken for more common benign conditions.**

**Signs and symptoms of ovarian cancer may include:**

- **Abdominal bloating or swelling**
- **Quickly feeling full when eating**
- **Weight loss**
- **Discomfort in the pelvis area**
- **Changes in bowel habits, such as constipation**
- **A frequent need to urinate**



## **When to see a doctor?**

**Make an appointment with your doctor if you have any signs or symptoms that worry you.**

**If you have a family history of ovarian cancer or breast cancer, talk to your doctor about your risk of ovarian cancer. Your doctor may refer you to a genetic counselor to discuss testing for certain gene mutations that increase your risk of breast and ovarian cancers**

## **Causes**

**It's not clear what causes ovarian cancer, though doctors have identified factors that can increase the risk of the disease.**

**In general, cancer begins when a cell develops errors (mutations) in its DNA. The mutations tell the cell to grow and multiply quickly, creating a mass (tumor) of abnormal cells. The abnormal cells continue living when healthy cells would die. They can invade nearby tissues and break off from an initial tumor to spread elsewhere in the body (metastasize).**

## **Types of ovarian cancer**

**The type of cell where the cancer begins determines the type of ovarian cancer you have. Ovarian cancer types include:**

- **Epithelial tumors, which begin in the thin layer of tissue that covers the outside of the ovaries. About 90 percent of ovarian cancers are epithelial tumors.**
- **Stromal tumors, which begin in the ovarian tissue that contains hormone-producing cells. These tumors are usually diagnosed at an earlier stage than other ovarian tumors. About 7 percent of ovarian tumors are stromal.**
- **Germ cell tumors, which begin in the egg-producing cells. These rare ovarian cancers tend to occur in younger women.**

## **Risk factors**

**Factors that can increase your risk of ovarian cancer include:**

- **Older age. Ovarian cancer can occur at any age but is most common in women ages 50 to 60 years.**
- **Inherited gene mutations. A small percentage of ovarian cancers are caused by gene mutations you inherit from your parents. The genes known to increase the risk of ovarian cancer are called breast cancer gene 1 (BRCA1)**

**and breast cancer gene 2 (BRCA2). These genes also increase the risk of breast cancer.**

**Other gene mutations, including those associated with Lynch syndrome, are known to increase the risk of ovarian cancer.**

- Family history of ovarian cancer. People with two or more close relatives with ovarian cancer have an increased risk of the disease.**
- Estrogen hormone replacement therapy, especially with long-term use and in large doses.**
- Age when menstruation started and ended. Beginning menstruation at an early age or starting menopause at a later age, or both, may increase the risk of ovarian cancer.**

## **Prevention**

**There's no sure way to prevent ovarian cancer. But there may be ways to reduce your risk:**

- Consider taking birth control pills. Ask your doctor whether birth control pills may be right for you. Women who use oral contraceptives may have a reduced risk of ovarian cancer. But oral contraceptives do have risks, so discuss whether the benefits outweigh those risks based on your situation.**

- **Discuss your risk factors with your doctor. If you have a family history of breast and ovarian cancers, bring this up with your doctor. Your doctor can determine what this may mean for your own risk of cancer. In some cases, your doctor may refer you to a genetic counselor who can help you decide whether genetic testing may be right for you. If you're found to have a gene mutation that increases your risk of ovarian cancer, you may consider surgery to remove your ovaries to prevent cancer.**

## **Diagnosis**

**Tests and procedures used to diagnose ovarian cancer include:**

- **Pelvic exam. During a pelvic exam, your doctor inserts gloved fingers into your vagina and simultaneously presses a hand on your abdomen in order to feel (palpate) your pelvic organs. The doctor also visually examines your external genitalia, vagina and cervix.**
- **Imaging tests. Tests, such as ultrasound or CT scans of your abdomen and pelvis, may help determine the size, shape and structure of your ovaries.**
- **Blood tests. Blood tests might include organ function tests that can help determine your overall health.**

- **Your doctor might also test your blood for tumor markers that indicate ovarian cancer. For example, a cancer antigen (CA) 125 test can detect a protein that's often found on the surface of ovarian cancer cells. These tests can't tell your doctor whether you have cancer, but may give clues about your diagnosis and prognosis.**
- **Surgery. Sometimes your doctor can't be certain of your diagnosis until you undergo surgery to remove an ovary and have it tested for signs of cancer.**

**Once it's confirmed that you have ovarian cancer, your doctor will use information from your tests and procedures to assign your cancer a stage. The stages of ovarian cancer are indicated using Roman numerals ranging from I to IV, with the lowest stage indicating that the cancer is confined to the ovaries. By stage IV, the cancer has spread to distant areas of the body.**

## **Treatment**

**Treatment of ovarian cancer usually involves a combination of surgery and chemotherapy.**

# **Surgery**

## **Operations to remove ovarian cancer include:**

- **Surgery to remove one ovary.** For very early-stage cancer that hasn't spread beyond one ovary, surgery may involve removing the affected ovary and its fallopian tube. This procedure may preserve your ability to have children.
- **Surgery to remove both ovaries.** If cancer is present in both your ovaries, but there are no signs of additional cancer, your surgeon may remove both ovaries and both fallopian tubes. This procedure leaves your uterus intact, so you may still be able to become pregnant using your own frozen embryos or eggs or with eggs from a donor.
- **Surgery to remove both ovaries and the uterus.** If your cancer is more extensive or if you don't wish to preserve your ability to have children, your surgeon will remove the ovaries, the fallopian tubes, the uterus, nearby lymph nodes and a fold of fatty abdominal tissue (omentum).
- **Surgery for advanced cancer.** If your cancer is advanced, your doctor may recommend chemotherapy followed by surgery to remove as much of the cancer as possible.



## **Chemotherapy**

**Chemotherapy is a drug treatment that uses chemicals to kill fast-growing cells in the body, including cancer cells. Chemotherapy drugs can be injected into a vein or taken by mouth. Sometimes the drugs are injected directly into the abdomen (intraperitoneal chemotherapy).**

**Chemotherapy is often used after surgery to kill any cancer cells that might remain. It can also be used before surgery.**

## **Targeted therapy**

**Targeted therapy uses medications that target the specific vulnerabilities present within your cancer cells. Targeted therapy drugs are usually reserved for treating ovarian cancer that returns after initial treatment or cancer that resists other treatments. Your doctor may test your cancer cells to determine which targeted therapy is most likely to have an effect on your cancer.**

**Targeted therapy is an active area of cancer research. Many clinical trials are testing new targeted therapist.**