

Ovarian Cancer

The National Cancer Institute (<http://www.cancer.gov/>), lists ovarian cancer as one of 13 common causes of cancer and provides the following information.

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Understanding Cancer

Cancer begins in cells, the building blocks that make up *tissues*. Tissues make up the organs of the body. Normally, cells grow and divide to form new cells as the body needs them. When cells grow old, they die, and new cells take their place.

Sometimes this orderly process goes wrong. New cells form when the body does not need them, and old cells do not die when they should. These extra cells can form a mass of tissue called a growth or *tumor*.

Not all tumors are cancer. Tumors can be *benign* or *malignant*.

Benign tumors are not cancer:

- Benign tumors are rarely life-threatening.
- Usually, benign tumors can be removed, and they seldom grow back.
- Cells from benign tumors do not spread to tissues around them or to other parts of the body.

Malignant tumors are cancer:

- Malignant tumors generally are more serious than benign tumors. They may be life-threatening.
- Malignant tumors often can be removed, but they can grow back.
- Cells from malignant tumors can invade and damage nearby tissues and organs. Also, cancer cells can break away from a malignant tumor and enter the bloodstream or lymphatic system. That is how cancer cells spread from the original cancer (*primary tumor*) to form new tumors in other organs. The spread of cancer is called *metastasis*.

Ovarian Cancer

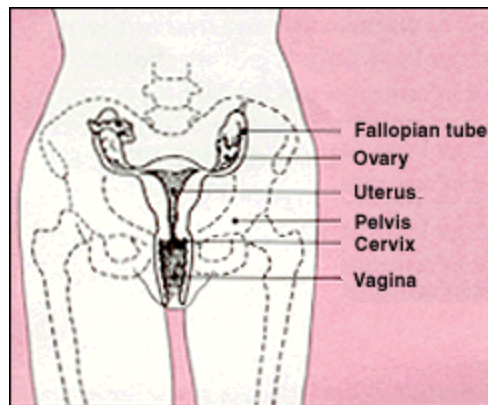
The diagnosis of ovarian *cancer* brings with it many questions and a need for clear, understandable answers. The [National Cancer Institute \(NCI\)](#) booklet (NIH Publication No. 00-1561) will help. It describes the symptoms, detection, diagnosis, and treatment of this disease. Having this important information can make it easier for women and their families to handle the challenges they face.

The Ovaries

The *ovaries* are a pair of organs in the female reproductive system. They are located in the *pelvis*, one on each side of the *uterus* (the hollow, pear-shaped organ where a baby grows). Each ovary is about the size and shape of an almond. The ovaries have two functions: they produce eggs and female *hormones* (chemicals that control the way certain cells or organs function).

Every month, during the *menstrual cycle*, an egg is released from one ovary in a process called *ovulation*. The egg travels from the ovary through the *fallopian tube* to the uterus.

The ovaries are also the main source of the female hormones estrogen and progesterone. These hormones influence the development of a woman's breasts, body shape, and body hair. They also regulate the menstrual cycle and pregnancy.



The ovaries and other female reproductive organs

Ovarian Cancer: Who's at Risk?

The exact causes of ovarian cancer are not known. However, studies show that the following factors may increase the chance of developing this disease:

- **Family history.** First-degree relatives (mother, daughter, sister) of a woman who has had ovarian cancer are at increased risk of developing this type of cancer themselves. The likelihood is especially high if two or more first-degree relatives have had the disease. The risk is somewhat less, but still above average, if other relatives (grandmother, aunt, cousin) have had ovarian cancer. A family history of breast or colon cancer is also associated with an increased risk of developing ovarian cancer.
- **Age.** The likelihood of developing ovarian cancer increases as a woman gets older. Most ovarian cancers occur in women over the age of 50, with the highest risk in women over 60.
- **Childbearing.** Women who have never had children are more likely to develop ovarian cancer than women who have had children. In fact, the more children a woman has had, the less likely she is to develop ovarian cancer.
- **Personal history.** Women who have had breast or colon cancer may have a greater chance of developing ovarian cancer than women who have not had breast or colon cancer.
- **Fertility drugs.** Drugs that cause a woman to ovulate may slightly increase a woman's chance of developing ovarian cancer. Researchers are studying this possible association.
- **Talc.** Some studies suggest that women who have used talc in the genital area for many years may be at increased risk of developing ovarian cancer.
- **Hormone replacement therapy (HRT).** Some evidence suggests that women who use HRT after menopause may have a slightly increased risk of developing ovarian cancer.

About 1 in every 57 women in the United States will develop ovarian cancer. Most cases occur in women over the age of 50, but this disease can also affect younger women.

As we learn more about what causes ovarian cancer, we may also learn how to reduce the chance of getting this disease. Some studies have shown that breast feeding and taking birth control pills (oral contraceptives) may decrease a woman's likelihood of developing ovarian cancer. These factors decrease the number of times a woman ovulates, and studies suggest that reducing the number of ovulations during a woman's lifetime may lower the risk of ovarian cancer.

Women who have had an operation that prevents pregnancy (tubal ligation) or have had their uterus and cervix removed (hysterectomy) also have a lower risk of developing ovarian cancer. In addition, some

evidence suggests that reducing the amount of fat in the diet may lower the risk of developing ovarian cancer.

Women who are at high risk for ovarian cancer due to a family history of the disease may consider having their ovaries removed before cancer develops (prophylactic oophorectomy). This procedure usually, but not always, protects women from developing ovarian cancer. The risks associated with this surgery and its side effects should be carefully considered. A woman should discuss the possible benefits and risks with her doctor based on her unique situation.

Having one or more of the risk factors mentioned here does not mean that a woman is sure to develop ovarian cancer, but the chance may be higher than average. Women who are concerned about ovarian cancer may want to talk with a doctor who specializes in treating women with cancer: a gynecologist, a gynecologic oncologist, or a medical oncologist. The doctor may be able to suggest ways to reduce the likelihood of developing ovarian cancer and can plan an appropriate schedule for checkups.

Detecting Ovarian Cancer

The sooner ovarian cancer is found and treated, the better a woman's chance for recovery. But ovarian cancer is hard to detect early. Many times, women with ovarian cancer have no symptoms or just mild symptoms until the disease is in an advanced stage. Scientists are studying ways to detect ovarian cancer before symptoms develop. They are exploring the usefulness of measuring the level of CA 125, a substance called a tumor marker, which is often found in higher-than-normal amounts in the blood of women with ovarian cancer. They also are evaluating transvaginal ultrasound, a test that may help detect the disease early. The [Cancer Information Service](#) can provide information about this research.

Recognizing Symptoms

Ovarian cancer often shows no obvious signs or symptoms until late in its development. Signs and symptoms of ovarian cancer may include:

- General abdominal discomfort and/or pain (gas, indigestion, pressure, swelling, bloating, cramps)
- Nausea, diarrhea, constipation, or frequent urination
- Loss of appetite
- Feeling of fullness even after a light meal
- Weight gain or loss with no known reason
- Abnormal bleeding from the vagina

These symptoms may be caused by ovarian cancer or by other, less serious conditions. It is important to check with a doctor about any of these symptoms.

To help find the cause of symptoms, a doctor evaluates a woman's medical history. The doctor also performs a physical exam and orders diagnostic tests. Some exams and tests that may be useful are described below:

- **Pelvic exam** includes feeling the uterus, vagina, ovaries, fallopian tubes, bladder, and rectum to find any abnormality in their shape or size. (A Pap test, a good test for cancer of the cervix, is often done along with the pelvic exam, but it is not a reliable way to find or diagnose ovarian cancer.)
- **Ultrasound** refers to the use of high-frequency sound waves. These waves, which cannot be heard by humans, are aimed at the ovaries. The pattern of the echoes they produce creates a picture called a sonogram. Healthy tissues, fluid-filled cysts, and tumors look different on this picture.
- **CA-125 assay** is a blood test used to measure the level of CA-125, a tumor marker that is often found in higher-than-normal amounts in the blood of women with ovarian cancer.
- **Lower GI series**, or **barium enema**, is a series of x-rays of the colon and rectum. The pictures are taken after the patient is given an enema with a white, chalky solution containing barium. The barium outlines the colon and rectum on the x-ray, making tumors or other abnormal areas easier to see.

- **CT (or CAT) scan** is a series of detailed pictures of areas inside the body created by a computer linked to an x-ray machine.
- **Biopsy** is the removal of tissue for examination under a microscope. A pathologist studies the tissue to make a diagnosis. To obtain the tissue, the surgeon performs a laparotomy (an operation to open the abdomen). If cancer is suspected, the surgeon performs an oophorectomy (removal of the entire ovary). This is important because, if cancer is present, removing just a sample of tissue by cutting through the outer layer of the ovary could allow cancer cells to escape and cause the disease to spread.

If the diagnosis is ovarian cancer, the doctor will want to learn the stage (or extent) of disease. Staging is a careful attempt to find out whether the cancer has spread and, if so, to what parts of the body. Staging may involve surgery, x-rays and other imaging procedures, and lab tests. Knowing the stage of the disease helps the doctor plan treatment.

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