

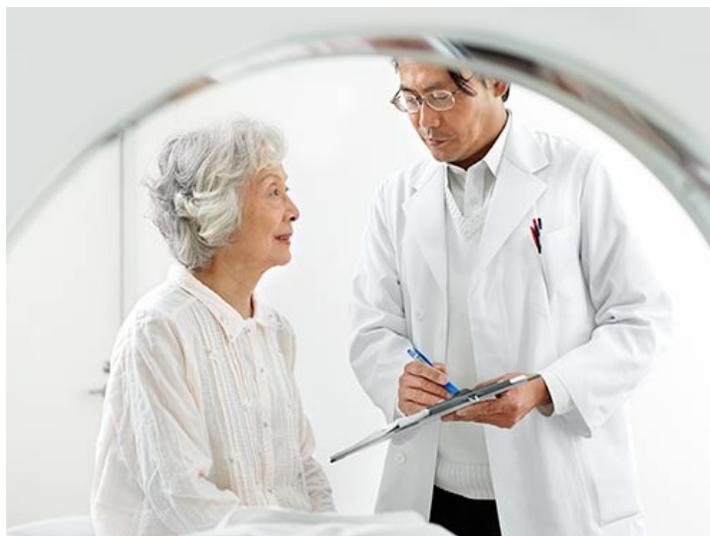


## Ovarian Cancer

Ovarian cancer begins in the ovary, one of a pair of female reproductive organs. It frequently does not cause obvious symptoms so it may not be detected until it is advanced. Symptoms include abdominal or pelvic pressure or pain, swelling or bloating, nausea, persistent fatigue, urinary urgency or frequency, and abnormal vaginal bleeding.

Your doctor will likely perform a pelvic exam and use blood tests to evaluate your condition. If your symptoms suggest ovarian cancer, pelvic ultrasound, abdominal and pelvic CT, exploratory laparotomy or laparoscopy may be performed to rule out cancer. If cancer is detected, your doctor may use body CT, body

MRI, PET/CT, or lower GI to determine the extent and size of the tumor and whether or not it has spread. Treatment depends on whether the cancer is confined to the ovary or if it has spread to other parts of the body. Options include surgery, chemotherapy and radiation therapy.



## What is ovarian cancer?

Ovarian cancer begins in the ovary, one of a pair of female reproductive organs located in the pelvis on either side of the uterus. The ovaries are where the ova, or egg cells, form.

Most cases of ovarian cancer occur in women older than age 55. Increasing age and a personal family history are the strongest risk factors. Women who have never been pregnant also face an increased risk. Women with a mutation in the genes BRCA 1 or BRCA 2 have an increased risk of ovarian cancer (in addition to their increased risk of breast cancer).

In its early stages, ovarian cancer frequently does not cause obvious symptoms. This is why ovarian cancer is frequently not detected until it has developed into an advanced stage. As the cancer grows, symptoms may include:

- pressure or pain in the abdomen or pelvis
- abdominal swelling or bloating

- nausea, indigestion, gas, constipation, or diarrhea
- persistent fatigue
- urinary urgency or frequency
- unusual vaginal bleeding, such as heavy periods or bleeding after menopause

## How is ovarian cancer diagnosed and evaluated?

Your primary doctor will begin by asking you about your medical history and symptoms. You will also undergo a physical exam, including a pelvic exam. Often, a blood test, called a CA-125, will be obtained.

If you have a symptom that suggests ovarian cancer, you may have one or more of the following tests:

- **Pelvic ultrasound:** uses sound waves to produce pictures of the structures and organs in the pelvis and can help identify ovarian or uterine cancers. In transvaginal ultrasound, a probe is inserted into the vagina for a better view of the uterus and ovaries.
- **Abdominal and pelvic CT:** takes images of the entire belly cavity and is used to help diagnose the cause of abdominal or pelvic pain and detect cancers of the ovaries. An injection of contrast material, as well as oral contrast, is commonly used to enhance the visibility of the lymph nodes and other tissues during the exam.
- **Exploratory laparotomy** requires an incision by a surgeon in the abdominal wall to examine the organs in the abdomen and pelvis for signs of cancer. If cancer is found, this surgery will generally include a removal of the ovaries, uterus and as much tumor tissue as possible from the abdomen.
- **Laparoscopy** is performed with the use of a thin, lighted tube called a laparoscope that is inserted through a small incision in the abdomen to look for signs of cancer.

If cancer has been detected, imaging is often useful to determine the extent of the tumor in the abdomen and if the cancer has spread. The following imaging tests may be performed to help stage the disease:

- **Body CT:** (if not already done previously) takes a series of detailed pictures of your pelvis, abdomen, or chest. An injection of contrast material, as well as oral contrast, may be used to enhance the visibility of the lymph nodes and other tissues during the exam. A CT scan can detect cancer in the lymph nodes, lungs, or elsewhere.
- **Less commonly, body MRI** can be used to produce detailed pictures of the uterus, lymph nodes and other tissues in the abdomen and pelvis. An injection of contrast material may also be used to enhance the visibility of the lymph nodes and other tissues during the exam. See the safety page for more information about contrast material.
- **PET/CT** is a nuclear medicine imaging exam that uses a small amount of radioactive material to help determine the extent of or treat a variety of diseases, including cancer. PET scans can be superimposed with CT or MRI to produce special views that can lead to more precise or accurate diagnoses. PET/CT may be used to evaluate the response of ovarian cancer to therapy, such as chemotherapy.

- Lower gastrointestinal (GI) tract radiography is an x-ray examination of the large intestine (colon). The lower gastrointestinal tract is filled with barium with the use of a flexible tube inserted in the rectum for better visualization of possible cancer spread in the digestive tract.

## How is ovarian cancer treated?

Treatment is based on whether the cancer is contained in the ovary or if it has spread to nearby tissues or other parts of the abdomen or body. Common treatment options include:

- Oophorectomy, the surgical removal of one or both ovaries. Women who have only one ovary removed may still become pregnant, but pregnancy is no longer possible if both ovaries are removed. If both the ovaries and fallopian tubes are removed, it is called bilateral salpingo-oophorectomy. Oophorectomy can be used in patients with very limited ovarian cancer that involves only one ovary and does not spread outside its capsule. Lymph nodes and other abdominal tissues are evaluated during surgery and biopsied to assure that the tumor is limited to the ovary.
- Hysterectomy (the surgical removal of the uterus and cervix) and removal of other tumor that may have spread outside the ovary, is done in more advanced ovarian cancer. Once the uterus is removed, a woman is no longer able to become pregnant.
- Chemotherapy, or drugs that kill cancer cells, is commonly used in more advanced ovarian cancer after surgery. In patients with ovarian cancer that cannot be removed surgically, chemotherapy is given as initial treatment. Chemotherapy is usually given over time and alternated with periods of no treatment.
- Radiation therapy is rarely used in ovarian cancer, mostly to treat limited areas of tumor involvement in the pelvis and or lymph node regions that cause pain and other symptoms.

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