What is epithelial ovarian carcinoma?
Ovarian cancer is a cancer starting in the ovary. There are several types of ovarian cancer. The most common type is epithelial ovarian cancer, which develops from the surface of the ovary. This cancer type is rare in young women and is usually found in women after menopause.

The four kind of epithelial ovarian cancer most often seen are:

- **Serous carcinoma**: This is the most common kind of cancer found in 8 out of 10 women with epithelial ovarian cancers. It can be either a high-grade tumor or a low-grade tumor; low-grade tumors are seen in only 10% of serous carcinomas. They tend to happen in younger women and are more likely to be cured or less likely to spread.

- **Mucinous carcinoma**: This kind of cancer is seen in around 1 in 10 women with epithelial ovarian cancer. The chance of cure and survival for this kind of cancer is good if found at an early stage.

- **Endometrioid carcinoma**: This type of cancer happens in around 1 in 10 women with epithelial ovarian cancer. They are typically less dangerous and are diagnosed early.

- **Clear-cell carcinoma**: Around 1 in 20 women with epithelial ovarian cancer have this kind of cancer, although it varies depending on which part of the world you are from. The prognosis is quite good when it is diagnosed early.

What are the symptoms?
Ovarian cancer symptoms include stomach swelling or fullness, changes in bowel habits or bladder function, abnormal bleeding from the vagina, and loss of appetite. Signs of ovarian cancer rarely develop before the disease has spread outside of the ovary.

What causes epithelial ovarian cancer?
It is not known exactly what causes this kind of cancer of the ovary, but it is seen more often in certain situations listed below:

- **Older age**: Two-thirds of women diagnosed with ovarian cancer are 55 or older.

- **Family history**: Women who have a mother, daughter, or sister (also called first-degree relatives) with a history of ovarian cancer have an increased risk of ovarian cancer. This risk is higher in women who also have a grandmother or aunt with a history of ovarian cancer. This risk is even higher in women who have two or more first-degree relatives (mother, sister or daughter) with a history of ovarian cancer.

- **Genetic changes**: Some women who develop ovarian cancer have a change in their genetic material (their DNA) called breast cancer gene 1 (BRCA1) or breast cancer gene 2 (BRCA2). Women with the BRCA1 change have around 1 chance in 2 of having ovarian cancer in their lifetime. Women with the BRCA2 mutation have around 1 chance out of 5 of having ovarian cancer in their lifetime. However, the vast majority of women who are diagnosed with ovarian cancer do not have any of those changes. Another genetic change that increases the risk of ovarian cancer is called Lynch syndrome. Women who have this genetic problem have a higher risk of developing ovarian cancer. They also have a higher risk of cancer of other gynecological organs as well as cancer of the stomach and gut and also many other organs.

- **Breast cancer, bowel cancer and certain cancers of the uterus**: Women who have been diagnosed with breast cancer, bowel cancer or cancer in the lining of their uterus (called endometrial cancer) have a higher risk of developing cancer in their ovaries.

**Can epithelial ovarian cancer be prevented?**

There is no way to absolutely prevent ovarian cancer, but it is seen less often in the following situation:

- **Having had at least one child**: Women who have delivered at least one child, especially before the age of 30, are at a lower risk of developing this type of cancer. The more children a woman
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has, the lower her risk of ovarian cancer is. Women who breastfeed their babies further reduce their risk.

- Use of birth control pill: Women who have used the birth control pill for at least three months have a lower risk of ovarian cancer. The longer a woman takes birth control pill, the lower her risk of ovarian cancer is. The lower risk continues for many years after stopping taking the pill. The use of other forms of birth control containing a hormone called estrogen (birth control patch for example), is also associated with a lower risk of ovarian cancer, but this has been less studied.

- Gynecologic surgery: A tubal ligation (tying the fallopian tubes), a removal of the fallopian tubes for permanent birth control or a hysterectomy (removing the uterus but not the ovaries) reduce the risk of developing ovarian cancer.

Is a screening test available for ovarian cancer?
A screening test is a test that is done when no symptoms are present to try to detect a disease early. Currently, no screening method has been shown to be effective or decrease the risk of dying from ovarian cancer.

How is it diagnosed?
Since early ovarian cancer has no specific symptoms, most women are diagnosed when the cancer has spread. Physical exam and ultrasound scan (either on the abdomen or internally) are performed at first. Ultrasound is an accurate method to describe and define the area around the ovaries. A blood test to measure levels of tumor markers (proteins that are sometimes increased in women with ovarian cancer) may be performed (such as CA 125, HE4). A computed tomography scan (CT scan) of the abdomen and pelvis may be offered to evaluate the spread of disease.

What are the treatment options?
Surgery
Most women require surgery. The type of surgery depends on how advanced the cancer is. Surgery usually includes removing both ovaries and the fallopian tubes (salpingo-oophorectomy), removing the womb and cervix (total hysterectomy) and removing the layer of fatty tissue in the abdomen known as the omentum (omentectomy). Samples of tissue and some lymph nodes may also be removed from the abdomen and pelvis. This helps to give an accurate idea of the spread of the cancer and to decide whether further treatment is necessary. If the cancer has spread to the pelvis or abdomen, the surgeon should remove all visible trace of tumour as this will greatly increase the chances of survival.

**Chemotherapy**

Ovarian cancer is usually very sensitive to chemotherapy. It is usually given after surgery. Sometimes it may be given before surgery, usually to help reduce the size of the cancer and to make it easier to remove all visible tumour at the time of surgery. When given before surgery, it is called neoadjuvant chemotherapy. There are a number of different anti-cancer drugs and different treatment plans. The choice of drug and the treatment plan depend on the spread of the cancer, how aggressive it is and the general health of the patient. The most frequent chemotherapy treatment consists of combining a platinum-containing drug (carboplatin) and another anti-cancer drug called paclitaxel.

**What is the follow up after treatment?**

Women treated for ovarian cancer need to have regular follow-up appointments. A checkup after cancer treatment usually includes many questions about your health and a physical exam. The checkup also may include blood samples (to monitor tumors markers such as CA 125- if they were seen in larger than expected amount in the blood before surgery) and imaging tests such as ultrasound scans, chest X-ray, **magnetic resonance imaging or MRI**, or **computed tomography (CT Scan)**. For the first couple of years, follow-up appointments will be scheduled more frequently, often every 2-3 months. Afterwards the visits will then become less frequent, usually once or twice a year for at least 5 years.
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Last updated September 2019