



What is Ovarian Cancer?

Ovarian cancer begins in a woman's ovaries. The ovaries are part of a woman's reproductive system. There are two, located on each side of the uterus. They are almond-shaped and are about one-and-one-half inches long. Ovaries make eggs. Every month, during ovulation, an egg is released from an ovary and travels to the uterus via a fallopian tube.

Ovaries are the primary source of women's sex hormones, estrogen and progesterone, which influences female characteristics including breast growth, body shape and body hair. They also regulate the menstrual cycle and pregnancy.

There are three types of ovarian cancer:

1. Epithelial Carcinoma

Epithelial tumors make up 85% to 90% of ovarian cancers. They begin in cells on the outer surface of the ovary. Because it is difficult to diagnose, 70% of ovarian cancers are not found until the disease has reached an advanced stage and moved from the ovaries into another part of the body, most commonly the abdomen.

2. Germ Cell Tumors

This uncommon form of ovarian cancer develops in the egg-producing cells of the ovary.

3. Stromal Tumors

This rare form of ovarian cancer develops in the connective tissue cells that hold the ovaries together, as well as those that produce female hormones.

As we well know, there are many kinds of cancer; unfortunately they all come about because of the out-of-control growth of abnormal cells.

Ovarian epithelial cancer is a disease in which malignant (cancer) cells form in the tissue covering the ovary.

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 fetus grows). Each ovary is about the size and shape of an almond. The ovaries produce eggs

and female hormones (chemicals that control the way certain cells or organs function).

Ovarian epithelial cancer is one type of cancer that affects the ovary. (Refer to the PDQ treatment summaries on Ovarian Germ Cell Tumors and Ovarian Low Malignant Potential Tumors for information about other types of ovarian cancer.)

Women who have a family history of ovarian cancer are at an increased risk of developing ovarian cancer.

Women who have one first-degree relative (mother, daughter, or sister) with ovarian cancer are at an increased risk of developing ovarian cancer. This risk is higher in women who have one first-degree relative and one second-degree relative (grandmother or aunt) with ovarian cancer. This risk is even higher in women who have two or more first-degree relatives with ovarian cancer.

Some ovarian cancers are caused by inherited gene mutations (changes).

The genes in cells carry the hereditary information that is received from a person's parents. Hereditary ovarian cancer makes up approximately 5% to 10% of all cases of ovarian cancer. Three hereditary patterns have been identified: ovarian cancer alone, ovarian and breast cancers, and ovarian and colon cancers.

Tests that can detect altered genes have been developed. These genetic tests are sometimes done for members of families with a high risk of cancer. (Refer to the PDQ summaries on Screening for Ovarian Cancer, Prevention of Ovarian Cancer, and Genetics of Breast and Ovarian Cancer for more information.)

Women with an increased risk of ovarian cancer may consider surgery to prevent it.

Some women who have an increased risk of ovarian cancer may choose to have a prophylactic oophorectomy (the removal of healthy ovaries so that cancer cannot grow in them). It is not known if this procedure prevents ovarian cancer.

Ovarian cancer is hard to detect (find) early because usually there are no symptoms.

Some women who have early stage ovarian cancer may have symptoms such as vague gastrointestinal (GI) discomfort, pressure in the pelvis, pain, swelling of the abdomen, and shortness of breath. Most of the time, there are no symptoms or they are very mild. By the time symptoms do appear, the cancer is usually advanced. When found in its early stages, ovarian epithelial cancer can be cured in many patients. Women with any stage of ovarian epithelial cancer should consider taking part in a clinical trial.

Tests that examine the ovaries, pelvic area, blood, and ovarian tissue are used to detect (find) and diagnose ovarian cancer.

The following tests and procedures may be used:

- **Pelvic exam**: An exam of the vagina, cervix, uterus, fallopian tubes, ovaries, and rectum. The doctor or nurse inserts one or two lubricated, gloved fingers of one hand into the vagina and the other hand is placed over the lower abdomen to feel the size, shape, and position of the uterus and ovaries. A speculum is also inserted into the vagina and the doctor or nurse looks at the vagina and cervix for signs of disease. A Pap test or Pap smear of the cervix is usually done. The doctor or nurse also inserts a lubricated, gloved finger into the rectum to feel for lumps or abnormal areas.
- **Ultrasound**: A procedure in which high-energy sound waves (ultrasound) are bounced off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram.
- **CA 125 assay**: A test that measures the level of CA 125 in the blood. CA 125 is a substance released by cells into the bloodstream. An increased CA 125 level is sometimes a sign of cancer or other condition.
- **Barium enema (lower GI series)**: A series of x-rays of the lower gastrointestinal tract. A liquid that contains barium (a silver-white metallic compound) is put into the rectum. The barium coats the lower gastrointestinal tract and x-rays are taken. This procedure is also called a lower GI series.
- **Intravenous pyelogram (IVP)**: A series of x-rays of the kidneys, ureters, and bladder to find out if cancer is present in these organs. A contrast dye is injected into a vein. As the contrast dye moves through the kidneys, ureters, and bladder, x-rays are taken to see if there are any blockages.
- **CT scan (CAT scan)**: A procedure that makes a series of detailed pictures of areas inside the body, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.
- **Biopsy**: The removal of cells or tissues so they can be viewed under a microscope to check for signs of cancer. The tissue is removed in a procedure called a laparotomy (a surgical incision made in the wall of the abdomen).

Certain factors affect treatment options and prognosis (chance of recovery).

The prognosis (chance of recovery) and treatment options depend on the following:

- The stage of the cancer.
- The type and size of the tumor.
- The patient's age and general health.
- Whether the cancer has just been diagnosed or has recurred

Healthy Cells vs. Cancer Cells

Healthy cells are like a cat. They need structure to determine the size of bones and shape of the body, tail and whiskers. The DNA in genes and chromosomes determine

this. They need energy to play and prowl and sustain life. This is derived from chemicals in food. Cats need a system to deliver chemicals (food nutrients like amino acids, carbohydrates, fats, vitamins and minerals) to all parts of their body. These are the blood vessels. Growth factors take a kitten into a lazy old cat, all the while helping it to function normally.

The body and its cells are mostly made up of protein. The building blocks of proteins are substances called amino acids that in the form of enzymes and hormones literally control every chemical reaction within the cells. When these are modified, different messages are sent to a complex control system that can alter their function. There are twenty different kinds of amino acids that are essential to life. Twelve of these can be synthesized within the body however; eight must be supplied by the daily diet.

Structure	
Normal Cells	Cancer Cells
DNA in genes and chromosomes go about their business in a normal way.	Cancer cells develop a different DNA or gene structure or acquire abnormal numbers of chromosomes.
Cells divide in an orderly way to produce more cells only when the body needs them.	Cells continue to be created without control or order. If not needed, a mass of tissue is formed which is called a tumor.
Energy	
Normal Cells	Cancer Cells
Cells derive 70% of their energy from a system called the "Krebs Cycle."	Cells have a defective "Krebs Cycle" and derive little or no energy from it.
Cells derive only 20% of their energy from a system called "Glycolosis."	Cancer cells derive almost all their energy from "Glycolosis."
Cells derive most of their energy with the use of oxygen.	Cells derive most of their energy in the absence of oxygen.
Blood Vessels	
Normal Cells	Cancer Cells
Cells have a built-in blood vessel system.	Cells do not have a built-in blood vessel system. They require more of certain amino acids to grow.

Growth Factors	
Normal Cells	Cancer Cells
While similar to cancer cells, the amount of them is more in balance to produce a more normal level of activity.	These cells have over produced, require more chemicals (food) and are over active.
Functions	
Normal Cells	Cancer Cells
The enzymes and hormones go about business in a normal balanced manner.	The enzymes and hormones are either over active or under active.
Tumors are Different	
Benign	Malignant
Benign tumors are not cancerous. They	Malignant tumors are cancerous. They

do not invade nearby tissues nor spread to other parts of the body. They can be removed and are not a threat to life.	can invade and damage nearby tissues and organs and they can break away and enter the blood stream to form new tumors in other parts of the body. The spread of cancer is called metastasis.
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Prevention

Doctors can not always explain why one person gets cancer and another does not. However, scientists have studied general patterns of cancer in the population to learn what things around us and what things we do in our lives may increase our chance of developing cancer.

Anything that increases a person's chance of developing a disease is called a risk factor; anything that decreases a person's chance of developing a disease is called a protective factor. Some of the risk factors for cancer can be avoided, but many can not. For example, although you can choose to quit smoking, you can not choose which genes you have inherited from your parents. Both smoking and inheriting specific genes could be considered risk factors for certain kinds of cancer, but only smoking can be avoided. Prevention means avoiding the risk factors and increasing the protective factors that can be controlled so that the chance of developing cancer decreases.

Although many risk factors can be avoided, it is important to keep in mind that avoiding risk factors does not guarantee that you will not get cancer. Also, most people with a particular risk factor for cancer do not actually get the disease. Some people are more sensitive than others to factors that can cause cancer. Talk to your doctor about methods of preventing cancer that might be effective for you.

After ovarian epithelial cancer has been diagnosed, tests are done to find out if cancer cells have spread within the ovaries or to other parts of the body.

The process used to find out if cancer has spread within the ovary or to other parts of the body is called staging. The information gathered from the staging process determines the stage of the disease. It is important to know the stage in order to plan treatment.

An operation called a laparotomy is usually done to find out the stage of the disease. A doctor must cut into the abdomen and carefully look at all the organs to see if they contain cancer. The doctor will also perform a biopsy (cut out small pieces of tissue so they can be looked at under a microscope to see whether they contain cancer). Usually the doctor will remove the cancer and organs that contain cancer during the laparotomy.

The following stages are used for ovarian epithelial cancer:

Stage I

In stage I, cancer is found in one or both of the ovaries and has not spread. Stage I is divided into stage IA, stage IB, and stage IC.

- Stage IA: Cancer is found in a single ovary.
- Stage IB: Cancer is found in both ovaries.

- Stage IC: Cancer is found in one or both ovaries and one of the following is true:
 - cancer is found on the outside surface of one or both ovaries; or
 - the capsule (outer covering) of the tumor has ruptured (broken open); or
 - cancer cells are found in the fluid of the peritoneal cavity (the body cavity that contains most of the organs in the abdomen) or in washings of the peritoneum (tissue lining the peritoneal cavity).

Stage II

In stage II, cancer is found in one or both ovaries and has spread into other areas of the pelvis. Stage II is divided into stage IIA, stage IIB, and stage IIC.

- Stage IIA: Cancer has spread to the uterus and/or the fallopian tubes (the long slender tubes through which eggs pass from the ovaries to the uterus).
- Stage IIB: Cancer has spread to other tissue within the pelvis.
- Stage IIC: Cancer has spread to the uterus and/or fallopian tubes and/or other tissue within the pelvis and cancer cells are found in the fluid of the peritoneal cavity (the body cavity that contains most of the organs in the abdomen) or in washings of the peritoneum (tissue lining the peritoneal cavity).

Stage III

In stage III, cancer is found in one or both ovaries and has spread to other parts of the abdomen. Stage III is divided into stage IIIA, stage IIIB, and stage IIIC.

- Stage IIIA: The tumor is found only in the pelvis, but cancer cells have spread to the surface of the peritoneum (tissue that lines the abdominal wall and covers most of the organs in the abdomen).
- Stage IIIB: Cancer has spread to the peritoneum but is 2 centimeters or smaller in diameter.
- Stage IIIC: Cancer has spread to the peritoneum and is larger than 2 centimeters in diameter and/or has spread to lymph nodes in the abdomen.

Cancer that has spread to the surface of the liver is also considered stage III disease.

Stage IV

In stage IV, cancer is found in one or both ovaries and has metastasized (spread) beyond the abdomen to other parts of the body. Cancer is found in the tissues of the liver.

There are different types of treatment for patients with ovarian epithelial cancer.

Different types of treatment are available for patients with ovarian epithelial cancer. Some treatments are standard, and some are being tested in clinical trials. Before starting treatment, patients may want to think about taking part in a clinical trial. A treatment clinical trial is a research study meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the treatment currently used as standard treatment, the new treatment may become the standard treatment.

Types of standard treatment are used. These include the following:

1. Surgery

Most patients have surgery to remove as much of the tumor as possible. Different types of surgery may include:

- **Hysterectomy**: A surgical procedure to remove the uterus and cervix. If the uterus and cervix are taken out through the vagina, the operation is called a vaginal hysterectomy. If the uterus and cervix are taken out through a large incision (cut) in the abdomen, the operation is called a total abdominal hysterectomy. If the uterus and cervix are taken out through a small incision (cut) in the abdomen using a laparoscope, the operation is called a total laparoscopic hysterectomy.
- **Unilateral salpingo-oophorectomy**: A surgical procedure to remove one ovary and one fallopian tube.
- **Bilateral salpingo-oophorectomy**: A surgical procedure to remove both ovaries and both fallopian tubes.
- **Omentectomy**: A surgical procedure to remove the omentum (a piece of the tissue lining the abdominal wall).
- **Lymph node biopsy**: The removal of all or part of a lymph node. A pathologist views the tissue under a microscope to look for cancer cells.

2. Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells. There are two types of radiation therapy. External radiation therapy uses a machine outside the body to send radiation toward the cancer. Internal radiation therapy uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

Some women receive a treatment called intraoperative radiation therapy, in which radioactive liquid is put directly in the abdomen through a catheter.

3. Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping the cells from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly into the spinal column, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy). The way the chemotherapy is given depends on the type and stage of the cancer being treated.

Stage I Ovarian Epithelial Cancer

Treatment of stage I ovarian epithelial cancer may include the following:

- **Hysterectomy, bilateral salpingo-oophorectomy, and omentectomy.** Lymph nodes and other tissues in the pelvis and abdomen are removed and examined under the microscope to look for cancer cells.
- **Internal or external radiation therapy.**
- **Chemotherapy.**
- **Watchful waiting** (closely monitoring a patient's condition without giving any treatment until symptoms appear or change).
- **A clinical trial.**

Stage II Ovarian Epithelial Cancer

Treatment of stage II ovarian epithelial cancer may be surgery to remove the tumor, hysterectomy, bilateral salpingo-oophorectomy, and omentectomy. Lymph nodes and other tissues in the pelvis and abdomen are removed and examined under the microscope to look for cancer cells.

After surgery, treatment may include the following:

- Combination chemotherapy and internal or external radiation therapy.
- Combination chemotherapy alone.
- A clinical trial.

Stage III and IV Ovarian Epithelial Cancer

Treatment of stage III and stage IV ovarian epithelial cancer may be surgery to remove the tumor, hysterectomy, bilateral salpingo-oophorectomy, and omentectomy.

After surgery, treatment may include the following:

- Combination chemotherapy.
- Combination chemotherapy followed by second-look surgery (surgery performed after the initial surgery to determine whether tumor cells remain).
- A clinical trial.

Treatment Options for Recurrent Ovarian Epithelial Cancer

Treatment of recurrent ovarian epithelial cancer may include the following:

- Chemotherapy with or without surgery.
- A clinical trial of chemotherapy or biologic therapy (treatment to stimulate or restore the ability of the immune system to fight cancer).

Ovarian germ cell tumor is a disease in which malignant (cancer) cells form in the germ (egg) cells of the ovary.

Germ cell tumors begin in the reproductive cells (egg or sperm) of the body. Ovarian germ cell tumors usually occur in teenage girls or young women and most often affect

just one ovary.

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 fetus grows). Each ovary is about the size and shape of an almond. The ovaries produce eggs and female hormones (chemicals that control the way certain cells or organs function).

Ovarian germ cell tumor is a general name that is used to describe several different types of cancer. The most common ovarian germ cell tumor is called dysgerminoma.

Possible signs of ovarian germ cell tumor are swelling of the abdomen or vaginal bleeding after menopause.

Ovarian germ cell tumors can be difficult to diagnose (find) early. Often there are no symptoms in the early stages, but tumors may be found during regular gynecologic examinations (checkups). A woman who has swelling of the abdomen without weight gain in other places should see a doctor. A woman who no longer has menstrual periods (who has gone through menopause) should also see a doctor if she has bleeding from the vagina.

Tests that examine the ovaries, pelvic area, blood, and ovarian tissue are used to detect (find) and diagnose ovarian germ cell tumor.

The following tests and procedures may be used:

- **Pelvic exam**: An exam of the vagina, cervix, uterus, fallopian tubes, ovaries, and rectum. The doctor or nurse inserts one or two lubricated, gloved fingers of one hand into the vagina and the other hand is placed over the lower abdomen to feel the size, shape, and position of the uterus and ovaries. A speculum is also inserted into the vagina and the doctor or nurse looks at the vagina and cervix for signs of disease. A Pap test or Pap smear of the cervix is usually done. The doctor or nurse also inserts a lubricated, gloved finger into the rectum to feel for lumps or abnormal areas.
- **Laparotomy**: A surgical procedure in which an incision (cut) is made in the wall of the abdomen to check the inside of the abdomen for signs of disease. The size of the incision depends on the reason the laparotomy is being done. Sometimes organs are removed or tissue samples are taken for biopsy.
- **Lymphangiogram**: A procedure used to x-ray the lymph system. A dye is injected into the lymph vessels in the feet. The dye travels upward through the lymph nodes and lymph vessels, and x-rays are taken to see if there are any blockages. This test helps find out whether cancer has spread to the lymph nodes.
- **CT scan (CAT scan)**: A procedure that makes a series of detailed pictures of areas inside the body, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.
- **Blood tests**: Tests to measure the levels of alpha fetoprotein (AFP) and human chorionic gonadotropin (HCG) in the blood. AFP and HCG are substances that may be signs of ovarian germ cell tumor when found at increased levels.

Certain factors affect prognosis (chance of recovery) and treatment options.

The prognosis (chance of recovery) and treatment options depend on the following:

- The type of cancer.
- The size of the tumor.
- The stage of cancer (whether it affects part of the ovary, involves the whole ovary, or has spread to other places in the body).
- The way the cancer cells look under a microscope.
- The patient's general health.

Ovarian germ cell tumors are generally curable if found and treated early.

After ovarian germ cell tumor has been diagnosed, tests are done to find out if cancer cells have spread within the ovary or to other parts of the body.

The process used to find out whether cancer has spread within the ovary or to other parts of the body is called staging. The information gathered from the staging process determines the stage of the disease. It is important to know the stage in order to plan treatment. Certain tests are used in the staging process.

Many of the tests used to diagnose ovarian germ cell tumor are also used to determine the stage of the disease. Unless a doctor is sure the cancer has spread from the ovaries to other parts of the body, surgery is required to determine the stage of cancer in an operation called a laparotomy. The doctor must cut into the abdomen and carefully look at all the organs to see if they contain cancer. The doctor will cut out small pieces of tissue and look at them under a microscope to see whether they contain cancer. The doctor may also wash the abdominal cavity with fluid and then look at the fluid under a microscope to see if it contains cancer cells. Usually the doctor will remove the cancer and other organs that contain cancer during the laparotomy.

The following stages are used for ovarian germ cell tumors:

Stage I

In stage I, cancer is found in one or both of the ovaries and has not spread. Stage I is divided into stage IA, stage IB, and stage IC.

- Stage IA: Cancer is found in a single ovary.
- Stage IB: Cancer is found in both ovaries.
- Stage IC: Cancer is found in one or both ovaries and one of the following is true:
 - cancer is found on the outside surface of one or both ovaries; or
 - the capsule (outer covering) of the tumor has ruptured (broken open); or
 - cancer cells are found in the fluid of the peritoneal cavity (the body cavity that contains most of the organs in the abdomen) or in washings of the peritoneum (tissue lining the peritoneal cavity).

Stage II

In stage II, cancer is found in one or both ovaries and has spread into other areas of the pelvis. Stage II is divided into stage IIA, stage IIB, and stage IIC.

- Stage IIA: Cancer has spread to the uterus and/or the fallopian tubes (the long slender tubes through which eggs pass from the ovaries to the uterus).
- Stage IIB: Cancer has spread to other tissue within the pelvis.
- Stage IIC: Cancer has spread to the uterus and/or fallopian tubes and/or other tissue within the pelvis and cancer cells are found in the fluid of the peritoneal cavity (the body cavity that contains most of the organs in the abdomen) or in washings of the peritoneum (tissue lining the peritoneal cavity).

Stage III

In stage III, cancer is found in one or both ovaries and has spread to other parts of the abdomen. Stage III is divided into stage IIIA, stage IIIB, and stage IIIC as follows:

- Stage IIIA: The tumor is found only in the pelvis, but cancer cells have spread to the surface of the peritoneum (tissue that lines the abdominal wall and covers most of the organs in the abdomen).
- Stage IIIB: Cancer has spread to the peritoneum but is 2 centimeters or smaller in diameter.
- Stage IIIC: Cancer has spread to the peritoneum and is larger than 2 centimeters in diameter and/or has spread to lymph nodes in the abdomen.

Cancer that has spread to the surface of the liver is also considered stage III disease.

Stage IV

In stage IV, cancer is found in one or both ovaries and has metastasized (spread) beyond the abdomen to other parts of the body. Cancer is found in the tissues of the liver.

There are different types of treatment for patients with ovarian germ cell tumors.

Different types of treatment are available for patients with ovarian germ cell tumor. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials. Before starting treatment, patients may want to think about taking part in a clinical trial. A treatment clinical trial is a research study meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the standard treatment, the new treatment may become the standard treatment. Clinical trials are taking place in many parts of the country.

Types of standard treatment are used:

1. Surgery

Surgery is the most common treatment of ovarian germ cell tumor. A doctor may take out the cancer using one of the following types of surgery.

- **Unilateral salpingo-oophorectomy:** A surgical procedure to remove one ovary and one fallopian tube.
- **Total hysterectomy:** A surgical procedure to remove the uterus, including the cervix. If the uterus and cervix are taken out through the vagina, the operation is called a vaginal hysterectomy. If the uterus and cervix are taken out through a large incision (cut) in the abdomen, the operation is called a total abdominal hysterectomy. If the uterus and cervix are taken out through a small incision (cut) in the abdomen using a laparoscope, the operation is called a total laparoscopic hysterectomy.
- **Bilateral salpingo-oophorectomy:** A surgical procedure to remove both ovaries and both fallopian tubes.
- **Tumor debulking:** A surgical procedure in which as much of the tumor as possible is removed. Some tumors may not be able to be completely removed.

2. Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping the cells from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly in the spinal column, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas. The way the chemotherapy is given depends on the type and stage of the cancer being treated.

3. Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells. There are two types of radiation therapy. External radiation therapy uses a machine outside the body to send radiation toward the cancer. Internal radiation therapy uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

Even if the doctor removes all the cancer that can be seen at the time of the operation, some patients may be offered chemotherapy or radiation after surgery to kill any cancer cells that are left. Treatment given after the surgery to increase the chances of a cure is called adjuvant therapy.

Following radiation or chemotherapy, an operation called a second-look laparotomy is sometimes done. This is similar to the laparotomy that is done to determine the stage of the cancer. During the second-look operation, the doctor will take samples of lymph nodes and other tissues in the abdomen to see if any cancer is left.

Early Stage Ovarian Low Malignant Potential Tumors (Stage I/II)

Surgery is the standard treatment for early stage ovarian low malignant potential tumor. The type of surgery usually depends on whether a woman plans to have children.

For women who plan to have children, surgery is either:

- unilateral salpingo-oophorectomy; or
- partial oophorectomy.

To prevent recurrence of disease, most doctors recommend surgery to remove the remaining ovarian tissue when a woman no longer plans to have children.

For women who do not plan to have children, treatment may be:

- hysterectomy and bilateral salpingo-oophorectomy.

Late Stage Ovarian Low Malignant Potential Tumors (Stage III)

Treatment for late stage ovarian low malignant potential tumor may be:

- hysterectomy, bilateral salpingo-oophorectomy, and omentectomy. A lymph node dissection may also be performed.

Source: A.P. John Institute for Cancer Research

When considering any type of complementary cancer treatment or alternative cancer treatment, always consult with your physician first, as possible interactions could reduce your treatment protocol's efficacy.