NCCN GUIDELINES FOR PATIENTS®

2024

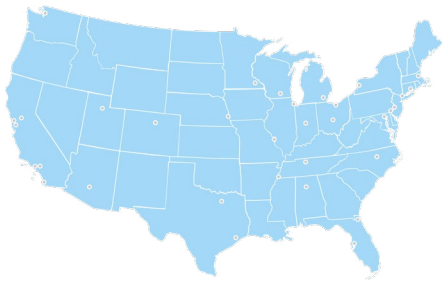
Ovarian Cancer

Presented with support from NCCN FOUNDATION® Guiding Treatment. Changing Lives.

Available online at NCCN.org/patientguidelines

About the NCCN Guidelines for Patients®

National Comprehensive Cancer Network®



Did you know that top cancer centers across the United States work together to improve cancer care? This alliance of leading cancer centers is called the National Comprehensive Cancer Network® (NCCN®).

Cancer care is always changing. NCCN develops evidence-based cancer care recommendations used by health care providers worldwide. These frequently updated recommendations are the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®). The NCCN Guidelines for Patients plainly explain these expert recommendations for people with cancer and caregivers.

These NCCN Guidelines for Patients are based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Ovarian Cancer/Fallopian Tube Cancer/Primary Peritoneal Cancer, Version 3.2024 — July 15, 2024.

View the NCCN Guidelines for Patients free online
NCCN.org/patientguidelines

Find an NCCN Cancer Center near you
NCCN.org/cancercenters

Connect with us

Supporters

NCCN Guidelines for Patients are supported by funding from the NCCN Foundation®

NCCN Foundation gratefully acknowledges the following corporate supporters for helping to make available these NCCN Guidelines for Patients: AstraZeneca and GSK.

NCCN independently adapts, updates, and hosts the NCCN Guidelines for Patients. Our corporate supporters do not participate in the development of the NCCN Guidelines for Patients and are not responsible for the content and recommendations contained therein.

Additional support is provided by

The National Ovarian Cancer Coalition (NOCC) is an influential advocate for those experiencing ovarian cancer. NOCC is committed to providing tools and resources for patients and caregivers by offering virtual, evidence-based educational programing, peer-to-peer support groups, and direct support services using our regional model throughout the United States. NOCC's community-focused approach is at the heart of everything we do, from funding innovative research that will lead to improved quality of life outcomes to promoting advocacy in action through disease awareness and outreach events in communities like yours. For more information, please visit ovarian.org or call 888-OVARIAN.

Ovarian Cancer Research Alliance is committed to curing ovarian cancer, advocating for patients, and supporting survivors. OCRA is the largest ovarian cancer charity, with over $122M invested in research. Our conference, website, clinical trial finder, and doctor finder connect patients to information on diagnosis, treatment and living with gynecologic cancers. Our support programs include our patient support line, peer mentor program, and Staying Connected workshops. OCRA builds community through advocacy, research, and support.ocrahope.org or call 212-268-1002.

To make a gift or learn more, visit online or email

NCCNFoundation.org/donate

PatientGuidelines@NCCN.org

Contents

NCCN Foundation seeks to support the millions of patients and their families affected by a cancer diagnosis by funding and distributing NCCN Guidelines for Patients. NCCN Foundation is also committed to advancing cancer treatment by funding the nation's promising doctors at the center of innovation in cancer research. For more details and the full library of patient and caregiver resources, visit NCCN.org/patients.

National Comprehensive Cancer Network (NCCN) and NCCN Foundation
3025 Chemical Road, Suite 100, Plymouth Meeting, PA 19462 USA

1
Ovarian cancer basics

Most ovarian cancers are found in the surface layer of tissue surrounding the ovaries, called the epithelium. These cancers can also start in the fallopian tube, close to where the tube meets the ovary. This guide provides treatment recommendations for common and rare ovarian cancers.

The ovaries

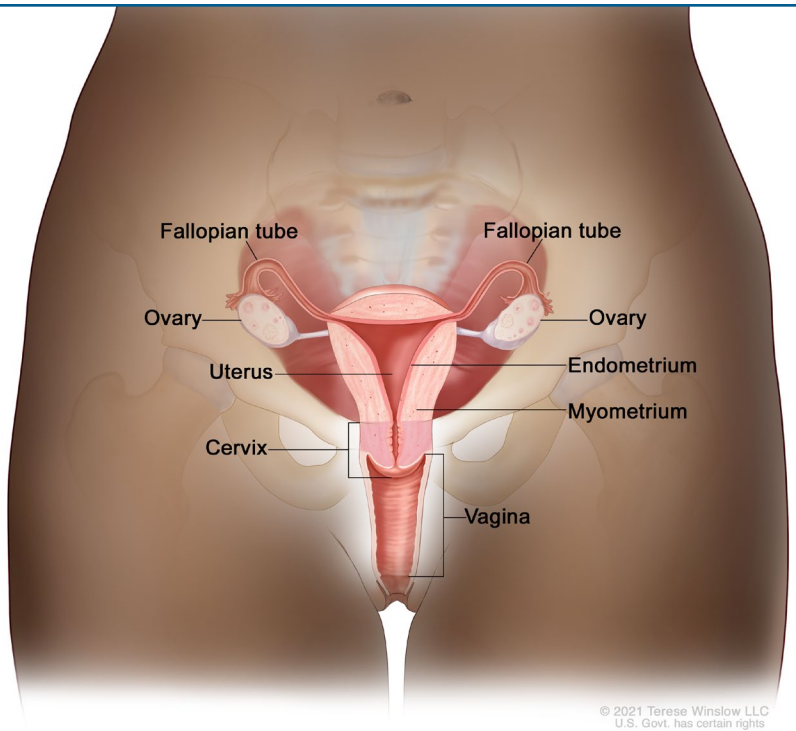
The ovaries are part of the female reproductive system. In addition to the 2 ovaries, this system includes the fallopian tubes, uterus, cervix, and vagina. The ovaries make eggs needed for sexual reproduction. They also release hormones that affect breast growth, body shape, and the menstrual cycle (periods).

Each ovary is about the size and shape of a grape. One is on the left side of the uterus and the other is on the right. Each is surrounded by a long, thin tube called a fallopian tube.

After an egg is pushed out by the ovary, it is caught by the fallopian tube and travels into the uterus. Here the fetus grows and develops during pregnancy. If the egg is not fertilized, this leads to a period. The uterus and at least 1 ovary and fallopian tube are needed for menstruation and pregnancy.

The female reproductive system

The female reproductive system includes the ovaries, fallopian tubes, uterus, cervix, and vagina.



Types of ovarian cancer

Most ovarian cancers are found in the outer surface of the ovaries, called the epithelium. There are more than 5 types of epithelial ovarian cancer. The most common forms are:

- High-grade serous carcinoma (HGSC)
- High-grade endometrioid carcinoma

Less common ovarian cancers

Rare types of ovarian cancer are called less common ovarian cancers (LCOCs) or less common ovarian histologies (LCOHs). They can start in the epithelium, in tissues that support the ovaries, or in the reproductive (egg) cells of the ovary.

Less common **epithelial** ovarian cancers include:

- Low-grade serous carcinoma
- Low-grade endometrioid carcinoma
- Carcinosarcoma (also called malignant mixed Mullerian tumors)
- Clear cell carcinoma
- Mucinous carcinoma
- Borderline epithelial tumor (also called low malignant potential tumors)

Less common **non-epithelial** ovarian cancers include:

- Malignant sex-cord stromal tumors
- Malignant germ cell tumors

Primary peritoneal cancer

Primary peritoneal cancer forms in the the tissue that lines the abdominal wall and covers the abdominal organs. The treatment information in this guide also applies to primary peritoneal cancer and fallopian tube cancer.

How is the type determined?

To diagnose ovarian cancer and determine the cancer type, tumor tissue needs to be removed from your body and tested.

If surgery is planned first, the tumor and other tissues removed during surgery will be tested. If chemotherapy is planned first, a biopsy will be performed to remove a sample of the tumor. A physician expert called a pathologist determines the type of ovarian cancer by examining the cancerous tissue.

The pathologist also determines the cancer grade. The grade is a rating of how abnormal the cancer cells look under a microscope. High-grade cancers grow and spread more quickly than low-grade cancers. The cancer grade is different than the stage.

Stages are categories that describe where the cancer has or hasn't spread from the ovary. Surgery is needed in order to know exactly how much cancer is in the body. Testing can provide a best guess of how far the cancer has spread before surgery.

Cancer care plan

Your treatment team

Treatment for ovarian cancer takes a team of experts. When possible, a gynecologic oncologist should perform the initial surgery. This type of doctor is an expert in surgery and chemotherapy for gynecologic cancers.

Your care team may also include a medical oncologist. This doctor is an expert in treating cancer with chemotherapy and other medicines.

You may also receive care from registered nurses, nurse practitioners, physician assistants, social workers, genetic counselors, sexual health experts, and others. Ask for the names and contact information of your care providers to be included in the treatment plan.

Cancer treatment may be improved if your primary care provider is involved. They can help manage other health conditions that may be affected by your cancer treatment.

Your treatment plan

There isn't one treatment plan that is best for everyone. There is often more than one option, including clinical trials. Clinical trials study the safety and effectiveness of investigational treatments. The treatment that you and your care team agree on should be noted in the treatment plan, along with possible side effects.

Keep in mind that your plan may change. Testing may provide new information. Your feelings about treatment may change. Side effects or other health conditions may prompt a change of plan.

Key points

- The ovaries are a pair of grape-sized organs in the pelvis. They make hormones and eggs for sexual reproduction.
- Most ovarian cancers affect the layer of tissue surrounding the ovaries, called the epithelium.
- High-grade serous carcinoma (HGSC) and high-grade endometrioid carcinoma are the most common types of ovarian tumors.
- Less common ovarian cancers can start in the epithelium, in tissues that support the ovaries, or in the reproductive (egg) cells of the ovary.
- Treating ovarian cancer takes a team of experts. Gynecologic oncologists and medical oncologists often work together to plan your treatment.

2
Testing for ovarian cancer

This chapter describes the testing used to learn more about suspected ovarian cancer, including whether surgery is possible.

Ovarian cancer can cause changes in the body that you can feel or notice. But you might not have symptoms until the tumor has grown large or the cancer has spread. Common symptoms include:

- Feeling bloated
- Heartburn and indigestion
- Pain or pressure in the pelvis or belly
- Trouble eating or feeling full fast
- Having to urinate often or urgently
- Pain during sex

These symptoms can also be caused by hormonal changes or other common health problems. Ovarian cancer is more likely to be the cause if the symptoms:

- Began less than 1 year ago,
- Occur more than 12 days per month, and
- Are becoming more severe over time.

If your provider suspects ovarian cancer based on your symptoms, you will have testing as described in this chapter. Testing helps determine the clinical (pre-treatment) stage. The clinical stage provides a best guess of how far the cancer has spread. It is a best guess because surgery is needed in order to know exactly how much cancer is in the body.

Testing also helps determine whether surgery first is the best treatment. Having surgery first may not be possible based on the size and location of the tumor, or because of other health factors.

Abdominal and pelvic exam

Your provider will feel different areas of your belly. This is called an abdominal exam. They are checking to see if organs are of normal size, are soft or hard, or cause pain when touched. Your doctor will also feel for signs of fluid buildup (ascites) in the belly area or around the ovaries.

Your provider will also feel for abnormal changes in the size, shape, or position of your ovaries, cervix, and uterus. This is called a pelvic exam. A widening instrument, called a speculum, is used to view your vagina and cervix. A sample of cells may be removed for testing. This is known as a Pap test. It is used to detect cervical cancer or pre-cancer, not ovarian cancer.

Sometimes, a biopsy of the uterine lining (an endometrial biopsy) may be part of the initial evaluation during the pelvic exam. This test can rule out a uterine cancer.

An exam of the rectum and vagina together may also be done to check for cancer in the space between the rectum and vagina. This is called a rectovaginal exam.

Imaging tests

Imaging tests can show the location, size, and shape of an ovarian tumor. They can also show if the cancer has spread beyond the ovaries. Your care team will tell you how to prepare for your imaging tests.

Ultrasound

Ultrasound is often the first imaging test used to look for ovarian cancer. It uses sound waves to make pictures of areas inside of the body. Ultrasound is good at showing the size, shape, and location of the ovaries, fallopian tubes, uterus, and nearby tissues. It can also show if there is a mass in the ovary and whether the mass is solid or filled with fluid.

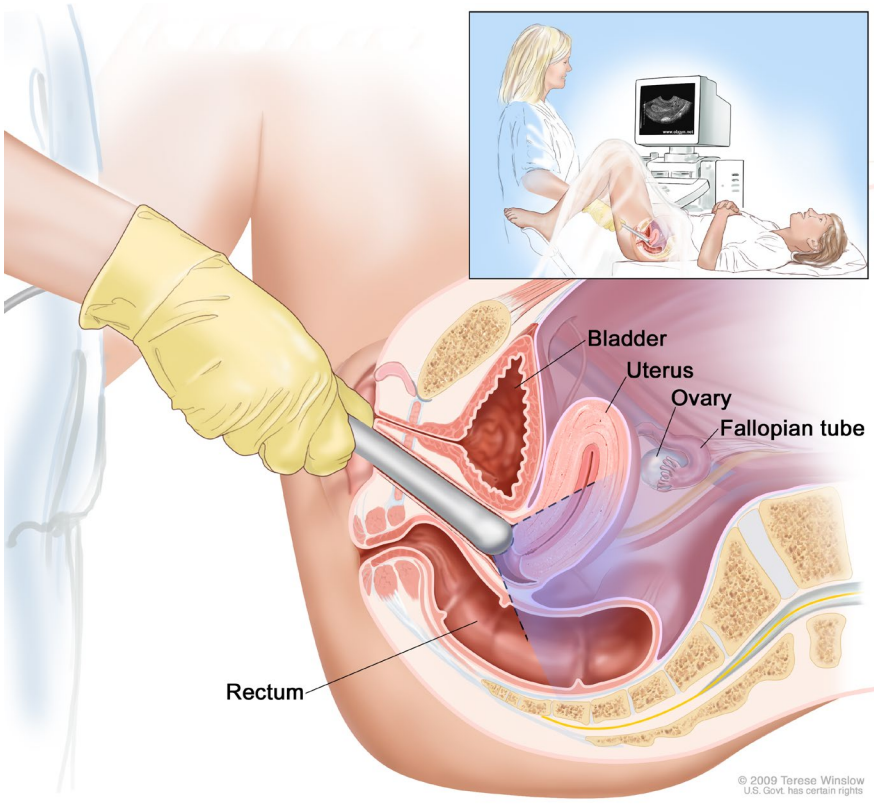
The 2 types of ultrasounds that may be used to look for ovarian cancer are described next. Both are done using a hand-held device called an ultrasound probe. Ultrasounds are generally painless, but you may feel some discomfort when the probe is inserted.

For a transabdominal ultrasound, a gel will be spread on your abdomen and pelvis. The gel helps to make the pictures clearer. Your doctor will place the probe on your skin and guide it back and forth in the gel.

For a transvaginal ultrasound, your doctor will insert the probe into your vagina. This may help the doctor see your ovaries more clearly.

Transvaginal ultrasound

Ultrasound uses sound waves to make pictures of the inside of the body. For a transvaginal ultrasound, a probe is inserted into the vagina. Ultrasounds are generally painless, but you may feel some discomfort when the probe is inserted.



CT

Imaging to look for ovarian cancer may include computed tomography (CT) scans of your abdomen, pelvis, and chest. CT scans are good at showing if the cancer has spread outside of the ovaries. They may also show if nearby lymph nodes are bigger than normal. This can be a sign that the cancer has spread.

If you can have it, a substance called contrast is used to make the pictures clearer. Before the scan you will be asked to drink a large glass of oral contrast. A contrast agent will also be injected into your vein. It may cause you to feel flushed or get hives. Rarely, allergic reactions can occur. Tell your team if you've had an allergic reaction to contrast in the past.

A CT scanner is a large machine with a tunnel in the middle. While you lie on a table that moves through the tunnel, the scanner will rotate an x-ray beam around you to take pictures from many angles.

MRI

If the ultrasound images are unclear, you may have magnetic resonance imaging (MRI) of your abdomen and pelvis. An MRI of your chest or liver may be used to look for signs of cancer spread. MRI doesn't use radiation. It uses radio waves and powerful magnets to take pictures of areas inside the body.

Getting an MRI scan is similar to getting a CT scan but takes longer. Like a CT scan, a contrast agent may be used to make the pictures clearer. You will lie on a table that moves through a large tunnel in the scanning machine.

The machine is more enclosed than a CT scan. Tell your care team if you get nervous in enclosed spaces. You may be given a type of medicine called a sedative to help you relax.

CT scan

A CT scan is a more detailed kind of x-ray. It takes a lot of pictures, or images, from different angles. A computer then combines the images to make 3-D pictures.

PET

CT or MRI are sometimes combined with positron emission tomography (PET). A PET scan shows how your cells are using a simple form of sugar, which can be helpful for identifying cancer. A sugar radiotracer is put into your body through a vein. The radiotracer puts out a small amount of energy that is detected by the machine that takes pictures. Cancer cells appear brighter because they use sugar faster than normal cells.

PET is very good at showing small groups of cancer cells. This test may also be useful for showing if ovarian cancer has spread.

Chest x-ray

A chest x-ray can show if cancer has spread to your lungs. It may be ordered with other tests when ovarian cancer is first suspected or found. It may also be used to check treatment results. A chest x-ray is fast and painless and uses small amounts of radiation.

Diagnostic laparoscopy

If the cancer is advanced, you may have a diagnostic laparoscopy before treatment. The goal is to learn how much cancer is in the abdomen. It helps your doctors to decide whether surgery can be the first treatment, or if chemotherapy is needed first.

This minimally invasive procedure involves making a tiny cut in the abdomen. A thin tube with a light and a camera (laparoscope) is used to view the lining of the abdomen and the surface of organs in the abdomen. Tissue samples are taken and tested for cancer cells in a lab.

Biopsy

To diagnose ovarian cancer, a sample of tissue must be removed from your body for testing. This is called a biopsy. The biopsy is usually done during initial surgery to remove the cancer.

But sometimes a biopsy is done to diagnose ovarian cancer before surgery or other planned treatment. This may be the case if the cancer has spread too much to be removed by surgery initially and chemotherapy is needed first. In such cases, a fine-needle aspiration (FNA) biopsy, core biopsy, or paracentesis may be used.

FNA uses a very thin needle to remove a small sample of tissue from the tumor. A core biopsy removes tissue samples with a hollow needle. For paracentesis, a long, thin needle is inserted through the skin of the belly to remove a sample of fluid.

The biopsy samples are sent to a pathologist for testing. A pathologist is a doctor who is an expert in testing cells to find disease. The pathologist views the samples with a microscope to look for cancer cells. If the cells are cancerous, the pathologist notes their appearance and other features.

Prior surgery or biopsy

The cancer may have been found during a surgery or biopsy performed by another doctor. In this case, your treatment team will need to review the prior surgery and testing results. A pathologist will examine the tumor tissue with a microscope to make sure it is ovarian cancer. Your doctors will also want to know if any cancer was left in your body after surgery.

Family history and genetic testing

Ovarian cancer usually occurs for unknown reasons. However, about 1 in 6 ovarian cancers is caused by mutations (changes) in genes that are passed down from parent to child. This is called hereditary ovarian cancer. It is most often caused by mutations in either breast cancer gene 1 (*BRCA1*) or breast cancer gene 2 (*BRCA2*).

Everyone has *BRCA1* and *BRCA2* genes. When working properly, they are helpful and repair damaged cells. But mutations in these genes increase the risk of developing ovarian, breast, and some other cancers.

Another cause of hereditary ovarian cancer is Lynch syndrome. Lynch syndrome is the most common cause of hereditary colon and uterine cancers but can also cause ovarian and other cancers. Ovarian cancer associated with a *BRCA* mutation or Lynch syndrome usually starts at a younger age than non-hereditary ovarian cancer. Using your age, health history, and family history, your doctor will assess how likely you are to have hereditary ovarian cancer.

Genetic testing can tell if you have a mutation in the *BRCA* genes, or in other genes that play a role in hereditary cancer. It is recommended for everyone diagnosed with ovarian cancer. If initial treatment works well, *BRCA* status (whether you have a *BRCA* mutation) plays an important role in guiding decisions about maintenance therapy.

Genetic testing may be done through your gynecology or oncology care team, or by a genetic counselor. The testing is done on normal tissue–either blood, saliva, or a cheek swab. Those with a positive genetic test or who have a strong cancer family history should see a health expert. This is typically a genetic counselor. A genetic counselor has special training to help patients understand changes in genes that are related to disease.

There are many other hereditary syndromes besides *BRCA* and Lynch. Genetic testing typically tests for all of them. Commercial genetic tests currently available over the counter look for the most common gene mutations, but aren't comprehensive.

In addition to testing for germline (inherited) *BRCA* mutations, the tumor itself should be tested for mutations in the *BRCA* and related genes. These are known as somatic or tumor mutations.

Genetic testing is recommended for everyone diagnosed with ovarian cancer. It can determine if you have a mutation in the *BRCA* genes, or in other genes that play a role in hereditary cancer.

Nutritional and digestive tract health

Your provider may ask about your diet and eating habits. Symptoms of ovarian cancer include bloating, pain in the pelvis or abdomen, difficulty eating, and feeling full quickly.

These symptoms may cause you to eat less in general, or to eat foods lacking in nutrients. Your overall health and nutrition level can have an impact on the success of surgery and other treatment outcomes. If you need help planning healthy meals or have questions about your diet, ask your provider for a referral to a registered dietitian or nutritionist.

Your doctor may want to check your gastrointestinal (GI) tract using an imaging test. The GI tract is made of the organs that food passes through when you eat. This includes your stomach, small bowel, and large bowel (rectum and colon).

An imaging tool called a scope is used to examine these organs. A scope is a long, thin tube with a light and a camera that can be guided into your body. A colonoscopy is used to examine the large bowel. This involves inserting a scope into your anus and guiding it through the rectum and colon. To examine the upper GI tract, a scope is guided down the throat into the esophagus, stomach, and small bowel. This is called an upper endoscopy.

Blood tests

The following tests are not used alone to diagnose ovarian cancer, but abnormal results may signal health problems.

General health

A complete blood count (CBC) measures the number of red blood cells, white blood cells, and platelets in a sample of blood. Red blood cells carry oxygen throughout the body. White blood cells fight infection. Platelets help to control bleeding. Your blood counts may be too low or too high because of cancer or other health problems.

A blood chemistry profile measures the levels of different chemicals that are affected by your kidneys, bones, and other organs and tissues. Levels that are too high or too low may be a sign that an organ isn't working well. Abnormal levels may also be caused by the spread of cancer or by other diseases. This test can also provide information about nutrient intake, such as protein levels. This can help guide treatment decisions.

The liver is an organ that does many important jobs, such as removing toxins from your blood. Liver function tests measure chemicals that are made or processed by the liver. Levels that are too high or low may be a sign of liver damage or cancer spread.

Tumor markers

A tumor marker is a substance found in body tissue or fluid that may be a sign of cancer. Along with other information, tumor markers can help diagnose ovarian cancer and monitor response to treatment.

A cancer antigen-125 (CA-125) test is the most common tumor marker test for ovarian cancer. High levels of this protein in the blood may be a sign of ovarian or other cancers. A CA-125 test alone cannot diagnose ovarian cancer.

Health problems that are not cancer, such as endometriosis and diverticulitis, can raise your CA-125 level. Some ovarian cancers don't cause CA-125 to rise.

Your blood may also be tested for the following tumor markers. These may be found in higher-than-normal amounts in people with less common ovarian cancers (LCOCs).

- Inhibin (typically inhibin A and inhibin B)
- Beta-human chorionic gonadotropin (β-hCG)
- Alpha-fetoprotein (AFP)
- Lactate dehydrogenase (LDH)
- Carcinoembryonic antigen (CEA)
- CA 19-9
- HE4

Biomarker testing

Biomarkers are features of the tumor that can help guide your treatment. They are often mutations (changes) in the DNA of the cancer cells. Testing for biomarkers involves analyzing a piece of tumor tissue in a lab or testing a sample of blood. The results can be used to determine whether you can join certain clinical trials, and whether you may benefit from specific maintenance therapies.

Other names for biomarker testing include molecular testing, tumor profiling, genomic testing, tumor gene testing, next-generation sequencing (NGS), mutation testing, liquid biopsy, and precision oncology.

BRCA and HRD

A *BRCA* mutation is the most important biomarker used to plan ovarian cancer treatment. Everyone diagnosed with ovarian cancer should have the tumor tested for mutations in the *BRCA* genes, and in other similar genes important in DNA repair.

This is different than genetic testing of the blood for inherited (germline) *BRCA* mutations. Mutations in the tumor itself are known as somatic or simply "tumor" mutations.

BRCA mutations are a form of homologous recombination deficiency (HRD). This means that if you have a *BRCA* mutation, the cancer is also homologous recombination deficient or HRD positive. However, you can also have an HRD-positive tumor without a *BRCA* mutation.

Other changes in the tumor's DNA can make it homologous recombination deficient. The tumor's *BRCA* and HRD status are used to

guide decisions about maintenance therapy after initial treatment.

Other biomarkers

The timing of testing for the biomarkers described next can vary. Some providers test for these (in addition to *BRCA*) early in the treatment process. Others may only test for *BRCA* and wait to see if therapies that require other biomarkers are needed.

However, testing for these biomarkers is generally recommended for ovarian cancer that returns after treatment (recurrent). Testing is performed on removed tumor tissue.

- Microsatellite instability (MSI)
- Mismatch repair (MMR)
- HER2 expression
- Tumor mutational burden (TMB)
- *BRAF* V600E mutation
- Folate receptor alpha (FRα) expression
- *RET* mutations
- *NTRK* gene fusion

Key points

- The biopsy to diagnose ovarian cancer is usually done during initial surgery. If your team recommends chemotherapy before surgery, a biopsy will be done before starting chemotherapy
- Ultrasound is often the first imaging test performed for suspected ovarian cancer.
- Blood tests for suspected ovarian cancer include a CBC, chemistry profile, liver function tests, and tumor marker tests.
- Hereditary ovarian cancer is most often caused by a mutation in the *BRCA* genes.
- Families with a history of Lynch syndrome may also be at risk for ovarian and other cancers.
- Everyone diagnosed with ovarian cancer should have genetic testing of the blood for inherited (germline) *BRCA* mutations.
- Biomarker testing looks for features of the cancer, such as mutations, that can help guide your treatment. Everyone diagnosed with ovarian cancer should have their tumor tested for mutations in the *BRCA* genes and others important in DNA repair.

3

Treatment for common ovarian cancers

The most common types of ovarian cancer are high-grade serous carcinoma and high-grade endometrioid carcinoma. These cancers are treated with surgery and chemotherapy. If treatment works well, maintenance therapy may be an option for more advanced cancers.

Surgery

Surgery is often the first treatment if you are willing and able to have it. Sometimes chemotherapy is given first.

Surgery should be performed by a gynecologic oncologist. This is a surgeon who is an expert in cancers that start in the female reproductive organs. If your team recommends chemotherapy before surgery, see page 21.

The main goals of surgery are to:

- Remove all or as much of the cancer as possible, and
- Learn how far the cancer has spread.

Hysterectomy with BSO

The most common surgery for ovarian cancer is hysterectomy and bilateral salpingo-oophorectomy (BSO). A hysterectomy is surgery to remove the uterus. When the cervix is removed in addition to the uterus, it is called a total or complete hysterectomy. A BSO removes both ovaries and both fallopian tubes.

Pregnancy isn't possible after a hysterectomy. Fertility-sparing surgery (described below) may be an option for some very early ovarian cancers that haven't spread beyond the ovaries.

If cancer has spread outside the ovaries, your surgeon will attempt to remove as much of it as possible. This is called debulking or cytoreductive surgery. The extent of the surgery depends on how far the cancer has spread. It may involve removing all or part of nearby organs. Lymph nodes that look abnormal or that are larger than normal will also be removed when possible.

Fertility-sparing surgery

Pregnancy isn't possible after the uterus is removed. This is difficult for those wishing to get pregnant in the future. Fertility-sparing surgery may be an option.

This involves removing one or both ovaries and fallopian tubes but leaving the uterus in place. Surgery to remove one ovary and its fallopian tube is called a unilateral salpingo-oophorectomy (USO). USO is only an option if the cancer is in 1 ovary and the cancer is appropriate for this procedure.

After a USO, you may still be able to become pregnant naturally if you haven't entered menopause.

If the cancer is in both ovaries, a BSO (without hysterectomy) may be an option. While you can't become pregnant naturally after a BSO, pregnancy may be possible using assisted reproductive approaches. One such approach is in vitro fertilization (IVF).

In IVF, eggs are fertilized with sperm in a lab to create embryos. The embryos are implanted into the uterus or frozen for future use. The eggs used for IVF may be yours (removed from your ovary before surgery) or donor eggs. Donor eggs are removed from women who have volunteered to go through hormone treatment to stimulate egg production in the ovaries.

Surgical methods

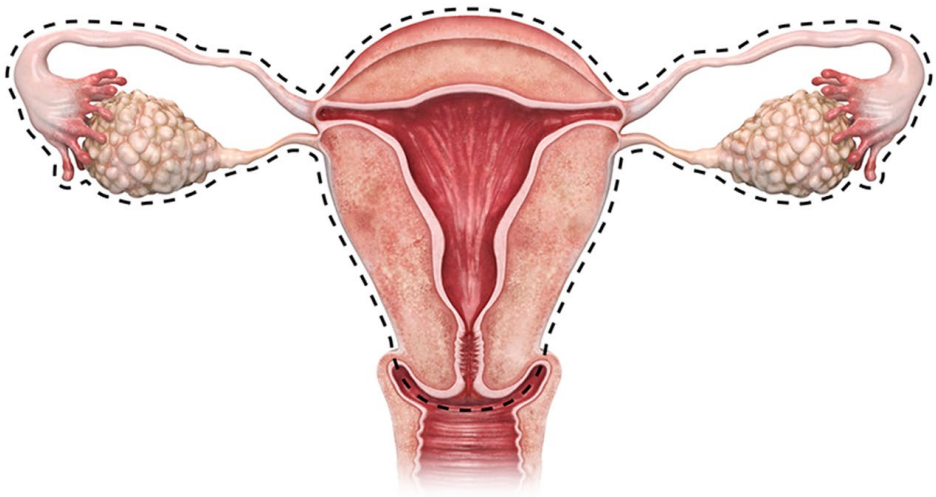
A laparotomy is the most common method for ovarian cancer surgery. A laparotomy is a long surgical cut in the abdomen. It is often an up-and-down (vertical) cut from the top of the belly button down to the pelvic bone.

This lets your doctor see the tumor and other organs and tissues in your abdomen and pelvis. This method is recommended most often when surgical staging (described next) or cytoreductive surgery is planned.

Less often, a minimally invasive type of surgery called laparoscopy may be used. The surgery is performed through a few small cuts in the abdomen. Laparoscopy may be used in select cases, such as when cancer is only in the ovaries. This surgery should only be done by a gynecologic oncologist experienced in this method.

Hysterectomy and BSO

The most commonly used surgery for ovarian cancer removes the uterus, both ovaries, and both fallopian tubes.



Surgical staging

If it does not look like the cancer has spread, surgical staging should be performed. Surgical staging is the most accurate way to stage ovarian cancer. This involves taking samples during surgery from organs and tissues where ovarian cancer often spreads. The samples are tested for cancer cells.

Your surgeon will also take samples from nearby tissues where it looks like cancer hasn't spread. This is done to check for cancer cells that have spread outside the ovaries or pelvis and can only be seen with a microscope. These are called microscopic metastases.

The omentum and sometimes nearby lymph nodes will be removed. The omentum is the fatty layer of tissue that covers organs in the belly (abdomen). Lymph nodes are groups of disease-fighting cells where cancer can also spread. If there is fluid buildup in the abdomen, the fluid will also be sampled. If there isn't fluid buildup, your doctor may "rinse" the space inside your belly with a special liquid. This is called a peritoneal washing. Samples of the liquid will then be tested for cancer cells.

Preparing for surgery

Your treatment team will give you instructions on how to prepare for surgery. You may be asked to stop taking some medicines for a short time. You also should not eat or drink after midnight the night before the surgery.

On the day of your surgery, you will be given medicine to put you into a deep sleep so you won't feel pain. This is called general anesthesia. Surgery may take 3 or more hours to complete. More or less time may be needed depending on how much tissue is removed.

After the surgery, expect to stay in the hospital for a few days or weeks to recover. You may feel some pain and tenderness in your belly and pelvis. It may last for a few days or weeks. You may be able to return to normal activities in a few weeks. The time it takes to fully recover varies from person to person. It also varies depending on the extent of the surgery.

Premature menopause

If you have not entered menopause, surgery that removes both ovaries will cause it. This is known as surgical menopause. It is caused by the sudden drop in estrogen in the body. This drop can cause symptoms of menopause, including:

- Hot flashes
- Sleeping problems
- Night sweats
- Weight gain
- Changes in mood
- Thinning, drying, and irritation of the vaginal lining (vaginal atrophy)

When caused by surgery, the symptoms of menopause may be sudden and more severe. There are also long-term risks of not having enough estrogen. They include heart or blood vessel problems (cardiovascular disease) and bone loss (osteoporosis).

If you have symptoms of surgical menopause, your doctor may suggest non-hormonal medicine or hormone replacement therapy (HRT). Discussion with a menopausal symptom team is recommended to determine whether HRT is right for you.

Other risks and side effects

With any type of surgery, there are health risks and side effects. Common side effects include pain, swelling, and scars. Common side effects of ovarian cancer surgery include leg swelling, trouble urinating, and constipation.

Cancer and recent abdominal surgery are risk factors for developing blood clots, also known as deep vein thrombosis (DVT). Many patients are placed on blood thinners (either oral medications or injections) for up to 4 weeks after surgery to help prevent blood clots.

If surgery first isn't an option

Having surgery first may not be an option. This could be due to the size or location of the tumor, other health conditions, or your overall health. In this case, chemotherapy is given first to shrink the cancer. You will need a biopsy to confirm that the tumor is ovarian cancer before starting chemotherapy.

At this time, preferred regimens include:

- Paclitaxel and carboplatin
- Paclitaxel, carboplatin, bevacizumab, and maintenance bevacizumab

While the above regimens are preferred, there are other recommended options for chemotherapy. Your team will take into account any medical conditions and your overall health. These regimens may change as new information becomes available.

After a few cycles of chemotherapy (2 to 3 months), your doctor will check to see how well chemotherapy worked and if surgery is an option. The goal of surgery is to remove as much of the cancer as possible, as well as the ovaries, fallopian tubes, and uterus. Surgery performed after chemotherapy is called interval cytoreductive surgery (ICS).

For stage 3 disease, hyperthermic intraperitoneal chemotherapy (HIPEC) may be used during ICS. HIPEC is a technique in which chemotherapy is warmed and then circulated in the spaces between the organs of the abdomen during surgery.

If cancer improves after several cycles of chemotherapy, surgery is usually recommended. If cancer stays the same, your doctor may recommend proceeding with surgery or continuing chemotherapy to see if there is improvement.

After surgery, more chemotherapy is usually given. Maintenance therapy may follow once your cancer is in remission.

Staging

The information gained during surgery and surgical staging is used to determine the pathologic (post-surgery) stage. The pathologic stage provides the most accurate picture of how far the cancer has spread. It is used to guide treatment after surgery.

A staging system is a standard way of describing the extent of cancer in the body. There are 2 staging systems for ovarian cancer. One was developed by the American Joint Committee on Cancer (AJCC), the other by the International Federation of Gynecology and Obstetrics (FIGO). They are similar but the FIGO system is used most often.

In the FIGO system, the cancer stage is defined by 3 main areas of cancer growth:

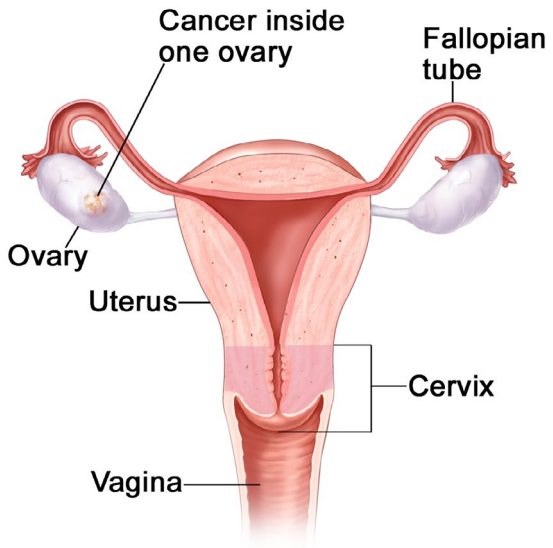
- The extent of the first (primary) tumor
- The spread of cancer to nearby lymph nodes
- The spread of cancer to distant sites

Ovarian cancer stages are numbered from 1 to 4. Doctors write cancer stages as I, II, III, and IV. The stages are also divided into smaller groups, called substages. This helps to describe the extent of cancer in more detail.

The FIGO stages of ovarian cancer are described on the following pages. Cancers of the same stage tend to have similar outcomes. Early-stage cancers tend to have better outcomes than more advanced cancers. Other factors not used for staging, such as your general health, are also important.

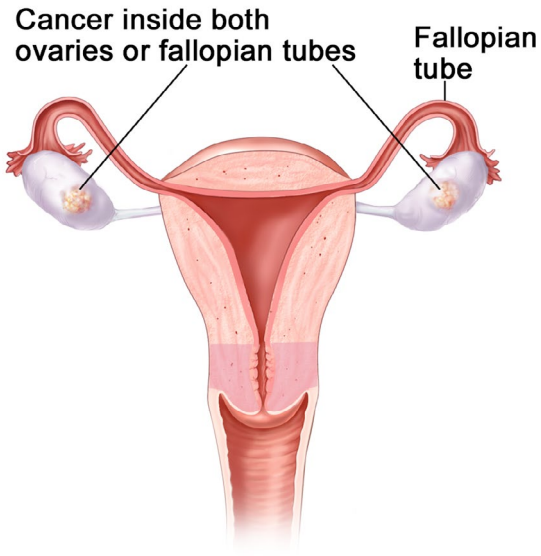
Stage 1A

Cancer is in one ovary. The outer sac (capsule) of the ovary is intact. There is no cancer on the outside surface of the ovary. No cancer cells are found in ascites or washings.



Stage 1B

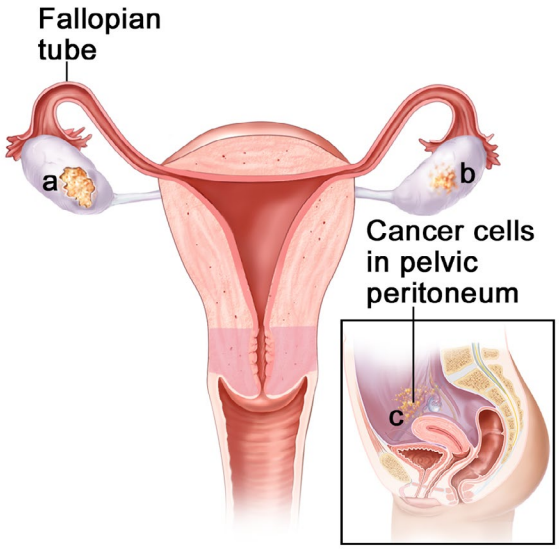
Cancer is in both ovaries. The capsules are intact and there is no cancer on the outside surface of the ovaries. No cancer cells are found in ascites or washings.



Stage 1C

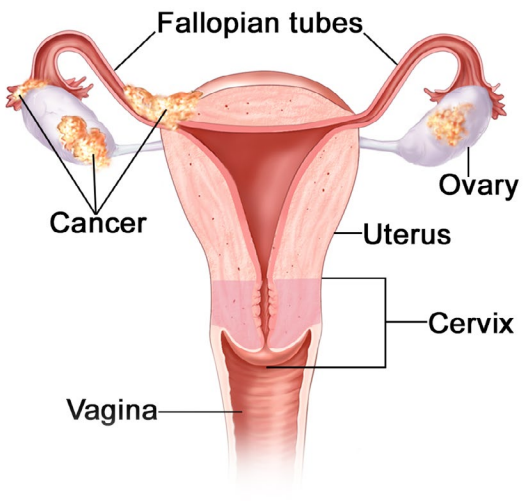
Cancer is in one or both ovaries and one or more of the following has also happened:

- **Stage 1C1 – The capsule of the ovary broke open during surgery. This is called surgical spill.**
- **Stage 1C2 – The capsule of the ovary broke open before surgery, or there is cancer on the outer surface of the ovary or fallopian tube.**
- **Stage 1C3 – Cancer cells are found in ascites or washings**



Stage 2A

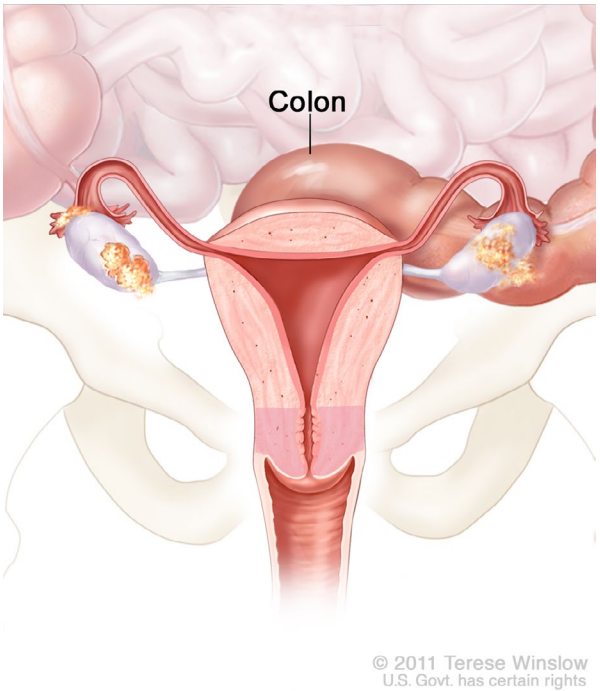
There is cancer in one or both ovaries. Cancer has grown into and/or spread implants on the uterus and/or fallopian tubes.



Stage 2B

Cancer is in one or both ovaries.

Cancer has grown into and/or spread implants on other organs or tissues in the pelvis, such as the bladder, colon, or rectum.



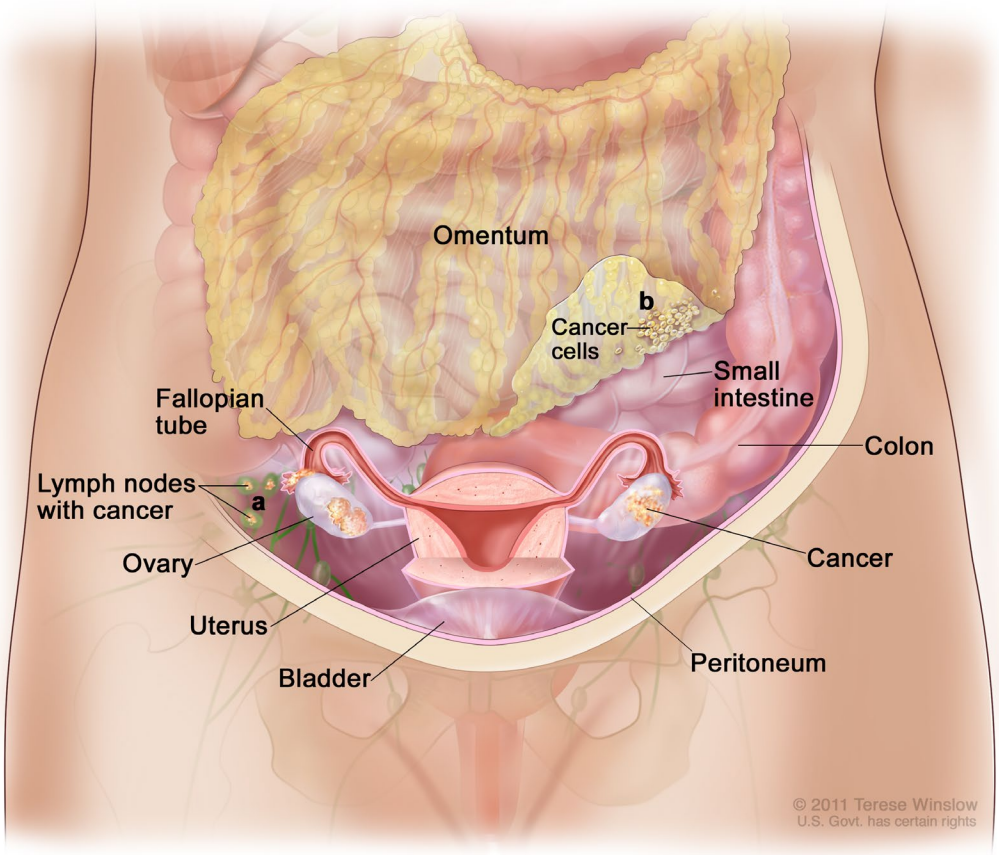
Stage 3A1

There is cancer in one or both ovaries. Cancer has spread to lymph nodes in the back of the abdomen (retroperitoneal lymph nodes).

- **Stage 3A1 (i) – Cancer in the lymph nodes is 10 mm (millimeters) or smaller.**
- **Stage 3A1 (ii) – Cancer in the lymph nodes is larger than 10 mm.**

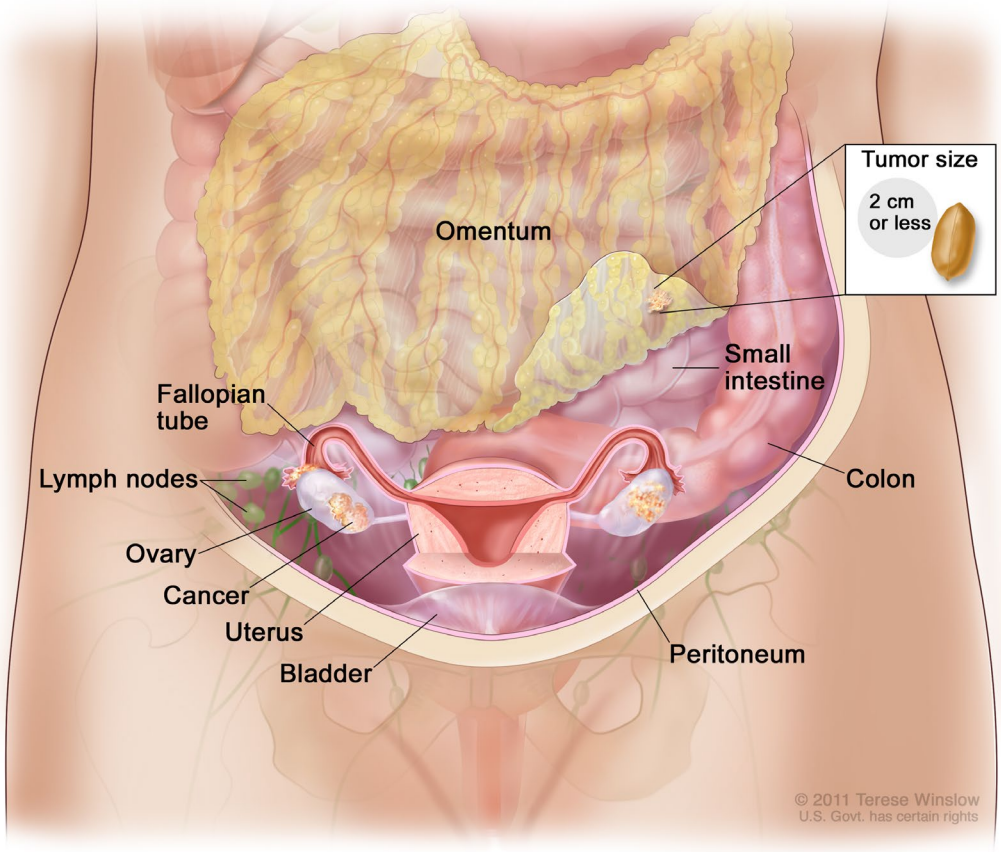
Stage 3A2

Cancer has spread to the tissue lining the abdomen. The cancer is so small it can only be seen with a microscope. There may also be cancer in lymph nodes in the back of the abdomen.



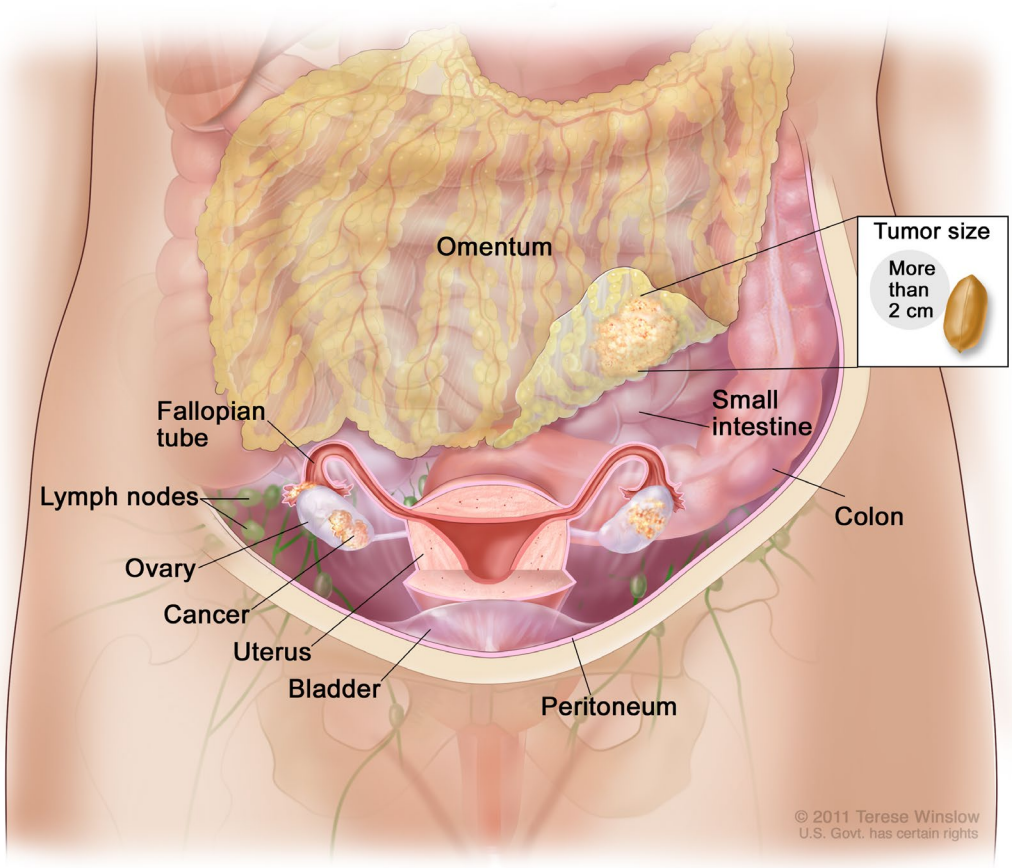
Stage 3B

There is visible cancer on the tissue lining the abdomen. The area of cancer is smaller than a peanut (about 2 centimeters or smaller). There may also be cancer in lymph nodes in the back of the abdomen.



Stage 3C

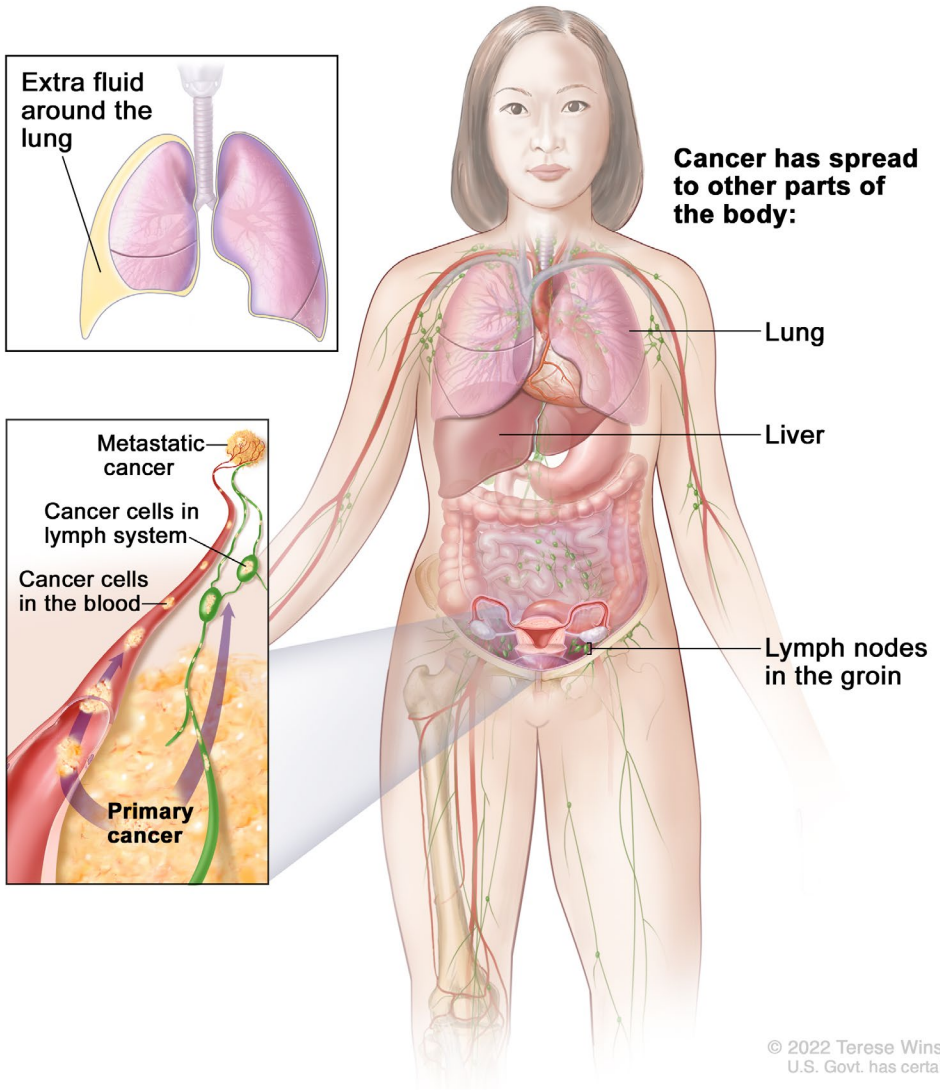
There is visible cancer on the tissue lining the abdomen. The area of cancer is larger than 2 cm. There might be cancer in lymph nodes in the back of the abdomen. The cancer may have also spread to the outer surface of the liver or spleen.



Stage 4

Cancer has spread to other parts of the body.

- **Stage 4A – There are cancer cells in the fluid around the lungs. This is called a malignant pleural effusion.**
- **Stage 4B – Cancer has spread to the inside of the liver or spleen, to distant lymph nodes, or to other organs outside the abdomen.**



Chemotherapy

Chemotherapy is the use of medicine(s) to kill cancer cells. It is a type of systemic therapy. When given before surgery, chemotherapy is called neoadjuvant therapy. When given after surgery, it is called primary or adjuvant chemotherapy.

Platinum-based chemotherapy is recommended for ovarian cancer. These medicines contain the metal platinum. Carboplatin, cisplatin, and oxaliplatin are examples. One of these is often given with a different type of chemotherapy called a taxane. Paclitaxel and docetaxel are taxanes.

Your options for chemotherapy will depend on your age and overall health. Your provider will also consider your risk for nerve damage, called peripheral neuropathy. This common side effect of paclitaxel causes pain, tingling, and numbness, often in the hands and feet.

Chemotherapy is given in cycles of treatment followed by days of rest. This allows the body to recover before the next treatment. The cycles vary in length depending on which drugs are used.

Stage 1

Chemotherapy is recommended after surgery for **most** newly diagnosed stage 1 cancers. Observation may be an option for a stage 1A or 1B, low-grade tumor. Ask your doctor if this applies to your cancer.

At this time, the preferred chemotherapy regimen is paclitaxel with carboplatin, given every 3 weeks. If you can't have this regimen, there are other recommended options.

Six cycles of chemotherapy are recommended for high-grade serous tumors. Between 3 and 6 cycles are recommended for all other stage 1 tumors. The specific number of cycles needed depends on the tumor type and other factors.

Stages 2, 3, and 4

For common tumor types, chemotherapy is recommended after surgery for **all** newly diagnosed stage 2, 3, and 4 ovarian cancers.

At this time, the preferred chemotherapy regimen is paclitaxel with carboplatin, given every 3 weeks. Six cycles are given for stage 2, 3, and 4 cancers. If you can't have this regimen, there are other recommended options.

A drug called bevacizumab (Avastin) may be added to your chemotherapy. It stops the growth of new blood vessels that feed the tumor.

If chemotherapy works well, the next step may include maintenance therapy. See page 31 for more information.

How chemotherapy is given

Most chemotherapy for ovarian cancer is given intravenously. This means the medicine is put directly into your bloodstream through a vein. You may get a port to receive chemotherapy. This is a small, round disc that is usually placed under your skin in the upper chest. It is inserted during a minor surgery and stays in the body until treatment is complete. After treatment the port can be easily removed. Once the port is removed, the skin will heal.

Chemotherapy medicine can also be slowly injected into the abdomen. This is called intraperitoneal (IP) chemotherapy. When given this way, higher doses of the drugs are delivered directly to the cancer cells in the belly area. IP chemotherapy is given through a thin tube called a catheter. The catheter is usually connected to a port placed inside the abdomen during surgery.

Monitoring during chemotherapy

Your doctor will monitor how well the chemotherapy is working and assess for side effects. Expect to have a physical exam every 1 to 3 cycles. A pelvic and rectovaginal exam may be done at the same time. Imaging and blood tests are ordered as needed. Testing for CA-125 or other tumor markers may be performed before each cycle of chemotherapy.

Side effects of chemotherapy

Common side effects of chemotherapy include:

- Loss of appetite
- Nausea and vomiting
- Mouth sores
- Hair loss
- Fatigue
- Increased risk of infection
- Bleeding or bruising easily
- Nerve damage (neuropathy)

The side effects of chemotherapy depend on the specific medicines being used, the dose, and other factors. In general, side effects are caused by the death of fast-growing cells, which are found in the bowel, mouth, and blood.

Intraperitoneal chemotherapy tends to cause more severe side effects than intravenous chemotherapy. This includes infections, kidney damage, pain in the belly, and nerve damage.

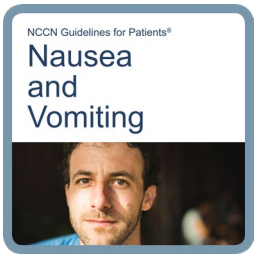
Rare but serious side effects include myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML). Ask your care team for a full list of common and rare side effects of the drugs you receive.

Tell your care team about any medications or supplements you are taking. Some may interact with chemotherapy.

Side effects

Managing side effects is a shared effort between you and your care team. It is important to speak up about bothersome side effects, such as nausea and vomiting. Ask about your options for managing or relieving the effects of treatment.

More information on nausea and vomiting is available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.



Maintenance therapy

Maintenance therapy is the use of systemic therapy after successful initial treatment for ovarian cancer. It can reduce the risk of cancer returning or extend the time until it returns or gets worse. Maintenance therapy is an option for stage 2, 3, and 4 cancers that respond well to surgery and platinum-based chemotherapy.

PARP inhibitors (PARPi) are a newer option for maintenance therapy after initial treatment. These oral targeted therapies work best in homologous recombination deficiency (HRD)-positive cancers, including those caused by a *BRCA* mutation.

PARP inhibitors currently used for maintenance therapy after initial treatment of ovarian cancer include:

- Olaparib (Lynparza)
- Niraparib (Zejula)
- Rucaparib (Rubraca)

The most common side effects of PARP inhibitors are similar to those caused by chemotherapy. They include fatigue, nausea, vomiting, and low blood cell counts. Rare but serious side effects include myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML).

Myelodysplastic syndrome is a cancer in which the bone marrow does not make enough healthy blood cells. There are abnormal cells in the blood and/or bone marrow. Acute myeloid leukemia is a fast-growing disease in which too many immature white blood cells are found in the bone marrow and blood. In some cases MDS can become AML.

If chemotherapy included bevacizumab

For HR deficient cancers and *BRCA*-mutated cancers, maintenance therapy with both bevacizumab and olaparib (a PARP inhibitor) is a recommended option. If you can't have olaparib, niraparib is given instead.

For *BRCA*-mutated cancers, maintenance therapy with a PARP inhibitor alone is also an option.

Maintenance therapy with bevacizumab alone is also an option for cancers not caused by a *BRCA* mutation, or whose *BRCA* status is unknown.

If chemotherapy didn’t include bevacizumab

If you have a *BRCA* mutation and chemotherapy didn't include bevacizumab, maintenance therapy with a PARP inhibitor alone is recommended. For some stage 2 cancers with a *BRCA* mutation, observation may be an option.

If you don't have a *BRCA* mutation (or have not had a *BRCA* test), maintenance therapy with niraparib or rucaparib may be an option, especially if the cancer is HRD-positive.

Observation is also an option if there was a complete response to chemotherapy. This means there are no signs of cancer in the body.

How long does maintenance therapy last?

The length of maintenance therapy after initial treatment depends on the specific drug(s).

Olaparib alone can be given for up to 2 years. Olaparib + bevacizumab together can be given for up to 15 months, with the olaparib continued for up to 2 years total. Niraparib alone can be given for up to 3 years. Rucaparib alone can be given for up to 2 years. These recommendations can change with ongoing research.

Keep in mind that any maintenance therapy will be stopped if the cancer grows or spreads. It will also be stopped if the side effects become too harsh or make it unsafe to continue.

There isn't much research on maintenance therapy with a PARP inhibitor after initial treatment for stage 2 ovarian cancer. If your cancer is stage 2 and you are eligible for maintenance therapy, talk to your provider about your options.

Surveillance

When there are no signs of cancer after treatment, expect to see your oncologist on a regular basis for physical and pelvic exams.

First 2 years: Every 2 to 4 months

Next 3 years: Every 3 to 6 months

After 5 years: Once a year

Your provider may order blood and imaging tests if you develop symptoms or if there are other reasons to suspect relapse.

If your CA-125 level (or other tumor marker) was high originally, it may be checked on a regular basis after treatment.

In addition to surveillance testing, a range of other care is important for cancer survivors. See *Chapter 5: Survivorship* for more information.

"I truly believe that you have to go through something life changing, to gain something life affirming."

– Ovarian cancer survivor

Recurrence

The return of cancer after treatment is called a recurrence, or a relapse. Symptoms can be a sign of recurrence. Tell your care team if you have any of these symptoms:

- Pain or bloating in your pelvis or belly
- Unexplained weight loss
- Upset stomach
- Constipation
- Trouble eating or feeling full fast
- Fatigue
- Needing to urinate often or urgently

The presence of specific biomarkers helps guide treatment for recurrent ovarian cancer. If testing for the following biomarkers hasn't already been done, it is recommended now:

- *BRCA1* and *BRCA2* mutations
- Homologous recombination deficiency (HRD) status
- HER2 expression
- Microsatellite instability (MSI)
- Mismatch repair (MMR)
- Tumor mutational burden (TMB)
- *BRAF* V600E mutation
- Folate receptor alpha (FRα)
- *RET* mutations
- *NTRK* gene fusions

Your doctor may choose to test for even more biomarkers than those listed.

Everyone with persistent or recurrent ovarian cancer is encouraged to consider a clinical trial for treatment.

Platinum-resistant cancer

Ovarian cancer is called platinum-resistant if:

- It doesn't improve or worsens during platinum-based chemotherapy, or
- It returns less than 6 months after successful treatment with platinum-based chemotherapy.

Because platinum-based chemotherapy didn't improve your cancer, a different type of recurrence treatment is recommended. Non-platinum chemotherapy is usually given first. Another preferred option is bevacizumab (Avastin). This may also be added to your chemotherapy.

For tumors with the folate receptor alpha (FRα) biomarker, the targeted therapy mirvetuximab soravtansine-gynx (Elahere) is preferred for recurrence treatment. It is a type of antibody drug conjugate (ADC).

Other options may include endocrine therapy, targeted therapy, or immunotherapy. These options are described more next. Enrolling in a clinical trial is encouraged if you are eligible.

Platinum-sensitive cancer

If you enter complete remission after platinum-based chemotherapy and cancer returns more than 6 months later, the cancer is considered platinum-sensitive. This means that platinum-based chemotherapy drugs work well against the cancer.

Because it worked well before, platinum chemotherapy is typically recommended for recurrent platinum-sensitive disease. This is especially true for the first recurrence. The targeted therapy bevacizumab may be added to chemotherapy.

In certain circumstances, before starting recurrence treatment, your doctor may suggest surgery to remove all visible cancer. This is called secondary cytoreductive surgery.

If recurrence treatment with platinum-based chemotherapy works well or very well, maintenance therapy is an option. If bevacizumab was included in your recurrence chemotherapy regimen, it can be continued alone as maintenance therapy.

A PARP inhibitor may also be an option for maintenance therapy, if you haven't already been treated with one and there is a *BRCA* mutation.

After successful chemotherapy for recurrent cancer, maintenance therapy with a PARP inhibitor can be continued until the cancer grows or spreads, or until the side effects make it intolerable or unsafe to continue. When used after recurrence treatment, the safety of maintenance therapy with a PARP inhibitor for longer than 2 years is unknown.

Hypersensitivity reactions

With repeat use of carboplatin and/or cisplatin, you are at increased risk of a hypersensitivity (allergic) reaction. This can be life-threatening. If your treatment team hasn't brought it up, below are some questions you can ask to learn about this risk.

- ✓ How likely is it that I will have an allergic reaction to chemotherapy?
- ✓ How will I know if I'm having an allergic reaction? What are the symptoms?
- ✓ Does the staff on hand know how to manage hypersensitivity reactions?
- ✓ Will the right medical equipment be available in case I have an allergic reaction?

Biomarker-based treatment

If the cancer has any of the biomarkers listed in **Guide 3** below, targeted therapy or immunotherapy may be an option.

For information on the side effects of immunotherapy, see the *NCCN Guidelines for Patients Immunotherapy Side Effects: Immune Checkpoint Inhibitors* at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.

Guide 3
Biomarker-based treatment

Biomarker	Available targeted therapies
dMMR/MSI-H	• Dostarlimab-gxly (Jemperli) • Pembrolizumab (Keytruda)
***BRAF* V600E mutation**	Dabrafenib (Tafinlar) + trametinib (Mekinist)
FRα (FOLR1)-expression	Mirvetuximab soravtansine-gynx (Elahere) + bevacizumab
TMB-H	Pembrolizumab (Keytruda)
***RET* gene fusion**	Selpercatinib (Retevmo)
HER2 expression	Fam-trastuzumab deruxtecan-nxki (Enhertu)
***NTRK* gene fusion**	• Entrectinib (Rozlytrek) • Larotrectinib (Vitrakvi) • Repotrectinib (Augtyro)

Endocrine therapy

Estrogen and progesterone are hormones made by the ovaries until menopause. Hormones are sometimes offered to help with symptoms of menopause, such as hot flashes. This is known as menopausal hormone therapy. It used to be called hormonal replacement therapy (HRT). This may help some ovarian cancers grow.

In some cases, treatment can be used to block these hormones from working, or to lower hormone levels. The goal is to help slow ovarian cancer growth. This is called endocrine therapy or anti-estrogen therapy. It may be used for persistent or recurrent ovarian cancer, most often for low-grade tumors.

Endocrine therapy often causes symptoms of menopause, including:

- Hot flashes
- Changes in mood
- Vaginal dryness
- Trouble sleeping
- Night sweats
- Vaginal discharge
- Weight gain

Other side effects include swelling in the hands and feet, fatigue, and less interest in sex. Blood clots are a rare but serious side effect of tamoxifen. Aromatase inhibitors can weaken your bones and may also cause joint and muscle pain.

Radiation therapy to help with symptoms

Depending on the specific recurrence treatment planned, radiation therapy may also be given to help with symptoms. It can be used treat vaginal bleeding, areas of cancer in bone, and isolated areas causing pain.

Radiation treatment to the pelvis can cause the vagina to become shorter and narrower (vaginal stenosis). This can make it uncomfortable or even painful to have sex, or to have vaginal exams by a doctor.

Using a vaginal dilator can prevent or treat vaginal stenosis. This is a device used to gradually stretch or widen the vagina. You can start using one as soon as 2 to 4 weeks after radiation therapy has ended, and continue to use it for as long as you want.

Advance care planning

Talking with your doctor about your prognosis can help with treatment planning. If the cancer cannot be controlled or cured, a care plan for the end of life can be made. Benefits of advance care planning include:

- Knowing what to expect
- Making the most of your time
- Lowering the stress of caregivers
- Having your wishes followed
- Having a better quality of life

Advance care planning starts with an honest talk between you and your doctors. Just having a general idea of your prognosis will help you decide at what point you may want to stop treatment, if at all.

Clinical trials

A clinical trial is a type of medical research study. After being developed and tested in a laboratory, potential new ways of fighting cancer need to be studied in people. If found to be safe and effective in a clinical trial, a drug, device, or treatment approach may be approved by the U.S. Food and Drug Administration (FDA).

Everyone with cancer should carefully consider all of the treatment options available for their cancer type, including standard treatments and clinical trials. Talk to your doctor about whether a clinical trial may make sense for you.

Phases

Most cancer clinical trials focus on treatment. Treatment trials are done in phases.

- **Phase 1** trials study the dose, safety, and side effects of an investigational drug or treatment approach. They also look for early signs that the drug or approach is helpful.
- **Phase 2** trials study how well the drug or approach works against a specific type of cancer.
- **Phase 3** trials test the drug or approach against a standard treatment. If the results are good, it may be approved by the FDA.
- **Phase 4** trials study the long-term safety and benefit of an FDA-approved treatment.

Who can enroll?

Every clinical trial has rules for joining, called eligibility criteria. The rules may be about age, cancer type and stage, treatment history, or general health. These requirements ensure that participants are alike in specific ways and that the trial is as safe as possible for the participants.

Informed consent

Clinical trials are managed by a group of experts called a research team. The research team will review the study with you in detail, including its purpose and the risks and benefits of joining. All of this information is also provided in an informed consent form. Read the form carefully and ask questions before signing it. Take time to discuss it with family, friends, or others you trust. Keep in mind that you can leave and seek treatment outside of the clinical trial at any time.

Start the conversation

Don’t wait for your doctor to bring up clinical trials. Start the conversation and learn about all of your treatment options. If you find a study that you may be eligible for, ask your treatment team if you meet the requirements. If you have already started standard treatment, you may not be eligible for certain clinical trials. Try not to be discouraged if you cannot join. New clinical trials are always becoming available.

Frequently asked questions

There are many myths and misconceptions surrounding clinical trials. The possible benefits and risks are not well understood by many with cancer.

Will I get a placebo?

Placebos (inactive versions of real medicines) are almost never used alone in cancer clinical trials. It is common to receive either a placebo with a standard treatment or a new drug with a standard treatment. You will be informed, verbally and in writing, if a placebo is part of a clinical trial before you enroll.

Are clinical trials free?

There is no fee to enroll in a clinical trial. The study sponsor pays for research-related costs, including the study drug. You may, however, have costs indirectly related to the trial, such as the cost of transportation or child care due to extra appointments. During the trial, you will continue to receive standard cancer care. This care is billed to—and often covered by—insurance. You are responsible for copays and any costs for this care that are not covered by your insurance.

Finding a clinical trial

In the United States

NCCN Cancer Centers
NCCN.org/cancercenters

The National Cancer Institute (NCI)
cancer.gov/about-cancer/treatment/clinical-trials/search

Worldwide

Ovarian Cancer Research Alliance (OCRA)
ocra.careboxhealth.com

The U.S. National Library of Medicine (NLM)
clinicaltrials.gov

Need help finding a clinical trial?

NCI's Cancer Information Service (CIS)
1.800.4.CANCER (1.800.422.6237)
cancer.gov/contact

Key points

- Hysterectomy with BSO is the recommended first treatment for ovarian cancer whenever possible. Fertility-sparing surgery may be an option if the cancer hasn't spread beyond the ovary.
- Ovarian cancer is staged during surgery to remove the cancer. This is called surgical staging.
- For common ovarian tumor types, platinum-based chemotherapy is recommended after surgery for **most** stage 1 cancers and for **all** stage 2, 3, and 4 cancers. A targeted therapy called bevacizumab may be added.
- Maintenance therapy is recommended for many stage 2, 3, and 4 cancers that respond well to initial treatment. PARP inhibitors are often an option. They work best in cancers with a *BRCA* mutation and/or HRD-positive cancers.
- If it was included in chemotherapy, bevacizumab may be given alone or with a PARP inhibitor for maintenance therapy.
- If not already performed, tumor biomarker testing is recommended for everyone with recurrent ovarian cancer.
- Clinical trials give people access to investigational treatments that may, in time, be approved by the FDA.

“I may not be grateful for my cancer, but I am certainly grateful for the lessons it has taught me and the wonderful people that I have met along the way”

- Ovarian cancer survivor

4

Treatment for less common ovarian cancers

Less common ovarian cancers are often diagnosed during a surgery or other procedure. Treatment for these rare cancers is often individualized. When possible, receiving treatment as part of a clinical trial is strongly recommended.

Less common ovarian cancers can start in the epithelium, in tissues that support the ovaries, or in the reproductive (egg) cells of the ovary. If not already done, you may have surgery first to remove any remaining cancer or to stage the cancer.

If receiving treatment as part of a clinical trial isn't an option, treatment for less common ovarian cancers should be individualized. Whether the cancer has any biomarkers helps guide treatment decisions. Biomarkers are features of a cancer, such as gene mutations (changes).

Carcinosarcoma

Carcinosarcomas are the most aggressive type of ovarian tumor. Fertility-sparing surgery isn't a treatment option, regardless of your age or the cancer stage. These cancers are also known as malignant mixed Müllerian tumors.

Treatment with platinum-based chemotherapy is recommended. A preferred regimen for all stages is paclitaxel and carboplatin, given every 3 weeks. For stage 2, 3, or 4 tumors, the targeted therapy bevacizumab may be given with chemotherapy. If so, it is often continued as maintenance therapy.

When chemotherapy is over, follow-up care will begin for stage 1 tumors. For stage 2, 3 or 4 tumors with a *BRCA* mutation, maintenance therapy may follow chemotherapy.

For information on follow-up care and recurrence, see pages 33 and 34.

Clear cell carcinoma

Clear cell carcinomas are the most common of the less common ovarian cancers. They are considered high-grade (fast-growing) tumors. Most don't have estrogen receptors.

Platinum-based chemotherapy is recommended for most clear cell carcinomas. A preferred regimen for all stages is paclitaxel and carboplatin, given every 3 weeks. For stage 2, 3, or 4 tumors, the targeted therapy bevacizumab may be given with chemotherapy. If so, it is often continued as maintenance therapy.

When chemotherapy is over, follow-up care will begin for stage 1 tumors. For stage 2, 3, or 4 tumors with a *BRCA* mutation, maintenance therapy may follow chemotherapy.

For information on follow-up care and recurrence, see pages 33 and 34.

Mucinous carcinoma

Mucinous tumors are often found at an earlier age than more common ovarian cancers. These tumors can grow so large that they fill the abdomen and pelvis. Most people have early-stage disease at the time of diagnosis. Mucinous tumors usually respond well to treatment.

Testing often involves a check of the gastrointestinal (GI) tract. This can help tell the difference between a true mucinous cancer of the ovary versus a cancer that may have spread to the ovary from the GI tract. Blood tests measuring carcinoembryonic antigen (CEA) and CA 19-9 are recommended.

If not already done, you may have surgery to remove any remaining cancer and to surgically stage the cancer.

For stage 1A and 1B tumors, observation is recommended. Stage 1C tumors may be observed or treated with systemic therapy. Chemotherapy is recommended for all stage 2, 3, and 4 mucinous neoplasms. The preferred chemotherapy regimens are listed in **Guide 4**.

For information on follow-up care and recurrence, see pages 33 and 34.

Guide 4
Mucinous tumors – preferred options for chemotherapy

Note: These regimens may change as new information becomes available.

Stage 1C, grades 1 to 3	• 5-FU, leucovorin, oxaliplatin • Capecitabine and oxaliplatin • Paclitaxel and carboplatin (every 3 weeks)
Stages 2, 3, and 4	• 5-FU, leucovorin, and oxaliplatin with or without bevacizumab • Capecitabine and oxaliplatin with or without bevacizumab • Paclitaxel and carboplatin (every 3 weeks) • Paclitaxel, carboplatin, bevacizumab, and maintenance bevacizumab

Grade 1 endometrioid carcinoma

Testing for a biomarker (feature) called mismatch repair deficiency (dMMR)/ high microsatellite instability (MSI-H) is recommended for all grade 1 endometrioid carcinomas.

Stage 1A and 1B tumors are observed without treatment. While observation is also an option for stage 1C tumors, these cancers are often treated with chemotherapy or endocrine therapy.

For all stage 2, 3, and 4 tumors, treatment with either chemotherapy or hormonal therapy is recommended.

For chemotherapy, paclitaxel and carboplatin (given every 3 weeks) is recommended. A targeted therapy called bevacizumab may be added to chemotherapy for stage 2, 3, or 4 tumors. If so, it may be continued as maintenance therapy.

If treatment with chemotherapy is planned, your doctor may suggest maintenance endocrine therapy afterward.

For information on follow-up care and recurrence, see pages 33 and 34.

Supportive care is available for everyone with cancer. It isn't meant to treat the cancer, but rather to help with symptoms and make you more comfortable.

Low-grade serous carcinoma

Low-grade serous carcinoma isn’t the same as the more commonly diagnosed high-grade serous carcinoma. Low-grade serous carcinomas tend to be diagnosed at an earlier age. A little over half are linked with borderline serous tumors, also called low malignant potential tumors.

Observation is recommended for all stage 1A and 1B tumors. While observation is also an option for stage 1C tumors, these cancers are often treated with chemotherapy or hormonal therapy.

Treatment with either chemotherapy or hormonal therapy is recommended for all stage 2, 3, and 4 tumors.

For chemotherapy, paclitaxel and carboplatin (given every 3 weeks) is recommended. A targeted therapy called bevacizumab may be added to chemotherapy for stage 2, 3,

or 4 tumors. If so, it may be continued as maintenance therapy.

If treatment with chemotherapy is planned, your doctor may suggest maintenance endocrine therapy afterward.

After treatment

When treatment is over, follow-up visits are recommended every 2 to 4 months for the first 2 years, then every 3 to 6 months for 3 years. After year 5, they are scheduled once a year.

Physical exams, including pelvic exam, are performed as needed. If biomarker testing hasn't been done yet, it is recommended now.

Physical exams, imaging, and blood tests are performed as needed. If CA-125 or other tumor markers were high before treatment, they will be monitored after treatment.

If the cancer returns, treatment options include:

- Targeted therapy with a kinase inhibitor
- Endocrine therapy
- Chemotherapy (if not already received)
- Biomarker-based targeted therapy (if the cancer has biomarkers)
- Observation

Ovarian serous borderline epithelial tumors

Ovarian serous borderline epithelial tumors are also called low malignant potential (LMP) tumors. These rare tumors have cancer-like features, but don't invade other tissues like most cancers do.

Borderline epithelial tumors are slow-growing. Compared to more invasive types of ovarian cancer, those diagnosed with a borderline epithelial tumor tend to be younger and often have stage 1 disease. They are also often candidates for fertility-sparing surgery.

Surgery is the main treatment for borderline epithelial tumors. Both standard surgery and fertility-sparing surgery may be options. You should be evaluated by a gynecologic oncologist for this decision.

If cancer remains after prior surgery

Prior surgery for a borderline epithelial tumor may be considered incomplete. This is the case if the cancer wasn’t fully removed, or fully staged.

If your doctor suspects that cancer remains in the body, another surgery is recommended if possible. This may not be possible if you are otherwise not healthy enough, or if the cancer can’t be surgically removed.

If you want to keep your fertility, fertility-sparing surgery may be an option. This involves removing only the ovary with cancer and its ovarian tube, along with any remaining visible cancer. This is called a unilateral salpingo-oophorectomy (USO). For some, removing

both ovaries and fallopian tubes but keeping the uterus intact may be an option.

If you don't desire fertility-sparing surgery, completion surgery (hysterectomy and removal of the opposite ovary and fallopian tube) is performed. Any remaining cancer will also be resected. Removal and testing of lymph nodes during surgery is considered on a case-by-case basis.

After surgery (fertility-sparing or completion), the pathology team will test the removed tissues. Sometimes the tumor type changes as a result of this testing. If the final results confirm that it is borderline, follow-up care is described next.

Prior complete surgery

If the cancer was completely resected and no low-grade serous carcinoma was found, observation is recommended. If low-grade serous carcinoma was found, more treatment is recommended.

Follow-up

Physical exams are given every 3 to 12 months for the first 5 years after treatment. After that, they are given as needed. Your doctor may also do a pelvic exam at these visits.

If CA-125 or other tumor marker levels were high at diagnosis, they should be checked at each follow-up visit. Other blood tests and imaging are performed as needed. Imaging may be ordered if your doctor suspects that cancer has returned.

If you had fertility-sparing surgery, you may have ultrasounds after treatment. This can help catch recurrence early. Talk to your doctor about completion surgery after you've had the baby.

Relapse

The return of cancer after treatment is called a relapse or a recurrence. In the case of a relapse, debulking surgery is often recommended when possible. This surgery aims to remove all of the cancer that the surgeon can see.

The results of surgery may show that the tumor is a different type than previously thought. Treatment based on the updated tumor type is recommended.

Malignant germ cell tumors

Although very rare, germ cell tumors are the most common type of ovarian cancer diagnosed in people ages 16 to 20 years. These non-epithelial tumors are usually diagnosed at the earliest stage and have excellent treatment outcomes.

Types of germ cell tumors include:

- Dysgerminomas
- Immature teratomas
- Embryonal tumors
- Endodermal sinus (yolk sac) tumors.

The following tumor markers tend to be found in higher-than-normal amounts in those with a malignant germ cell tumor:

- Alpha-fetoprotein (AFP)
- Beta-human chorionic gonadotropin (β-hCG)
- Lactate dehydrogenase (LDH)

Treatment

If you want the option of having children after treatment, fertility-sparing surgery is recommended. The cancer can be any stage. Full surgical staging is performed at the same time.

Surveillance after fertility-sparing surgery involves having ultrasounds on a regular basis. Talk to your doctor about completion surgery after you've had the baby.

For those who don't desire fertility preservation, completion surgery with full surgical staging is recommended. Malignant germ cell tumors are staged with the same system used for common ovarian cancers. In children or adolescents with early-stage germ cell tumors, full surgical staging may be skipped.

After surgery, chemotherapy is recommended for most **malignant** germ cell tumors. This includes:

- Any stage embryonal tumor
- Any stage endodermal sinus tumor (yolk sac tumor)
- Stage 2, 3, or 4 dysgerminoma
- Stage 1, grade 2 or 3 immature teratoma
- Stage 2, 3, or 4 immature teratoma
- Any stage nongestational choriocarcinoma

Some germ cell tumors don't need chemotherapy after surgery. Observation with surveillance is recommended for:

- Stage 1 dysgerminomas, and
- Stage 1, grade 1 immature teratomas.

For tumors that need chemotherapy, 3 to 4 cycles of the BEP regimen (bleomycin, etoposide, and cisplatin) is preferred. Bleomycin can damage the lungs. Expect to have tests to check how well your lungs work before chemotherapy starts. In some cases bleomycin can't be used. Your team will speak with you about other options.

After chemotherapy, imaging will be ordered to see how the cancer responded. If you have a complete response to chemotherapy, expect to

have follow-up checks every 2 to 4 months for 2 years.

If the levels of AFP and beta-HCG were high originally, these tumor markers will also be checked with blood tests. **See Guide 5.**

Residual or recurrent disease

Sometimes the tumor doesn't go away completely with treatment. This is called residual disease. Or the tumor may return after treatment. This is called recurrent disease.

If the tumor can still be seen on imaging tests after surgery and chemotherapy and tumor

Guide 5
Surveillance for malignant germ cell tumors

	Year 1	Year 2	Year 3	Years 4 to 5	After 5 years
Dysgerminoma					
Physical exam and tumor marker blood tests	Every 2 to 3 months	Every 3 to 4 months	Every 6 months	Every 6 months	Every year
CT of abdomen and pelvis	Every 3 to 4 months	Every 6 months	Every year	Every year	As needed
Non-dysgerminoma					
Physical exam and tumor marker blood tests	Every 2 months	Every 2 months	Every 4 to 6 months	Every 6 months	Every year
Imaging	CT of chest, abdomen, and pelvis every 3 to 4 months	CT of chest, abdomen, and pelvis every 4 to 6 months	CT of abdomen and pelvis every 4 to 6 months	CT of abdomen and pelvis every 6 to 12 months	As needed

marker levels are normal, your doctor may suggest surgery to remove the remaining tumor tissue. Observation with imaging is also an option.

If surgery is planned, next steps depend on the results of surgery. If all of the cancer could not be removed, your doctor may recommend 2 more cycles of platinum-based chemotherapy.

For those with confirmed cancer (either residual or recurrent) after first-line chemotherapy and abnormal tumor markers (AFP and/or β-hCG), options to try to cure the cancer include:

- TIP chemotherapy (paclitaxel + ifosfamide + cisplatin)
- High-dose chemotherapy with hematopoietic cell transplant (HCT)

For some people, a hematopoietic cell transplant will cure the cancer. If your doctor thinks a cure is possible, you should be referred to a specialized care center for a consultation about high-dose chemotherapy and stem cell rescue. The specific high-dose chemotherapy regimens used vary between cancer centers.

If treatment with TIP or high-dose chemotherapy isn't possible or desired, palliative chemotherapy is an option. The goal of care is to make you more comfortable and improve your quality of life. There are many options for palliative chemotherapy. Talk to your doctor about which may be right for you.

For cancers with the following biomarkers, immunotherapy with a checkpoint inhibitor may also be an option.

- Microsatellite instability-high (MSI-H)
- Mismatch repair deficient (dMMR)
- Tumor mutational burden-high (TMB-H)

Radiation therapy targeting the tumor area can help relieve symptoms caused by the cancer. Also keep in mind that receiving only supportive care without other treatment is always an option.

Malignant sex cord-stromal tumors

Malignant sex cord-stromal tumors are nonepithelial. These rare tumors include granulosa cell tumors (most common) and Sertoli-Leydig cell tumors. The prognosis (outlook) for both types is good. Most people diagnosed with a malignant granulosa cell tumor have early-stage disease, and the cancer is typically slow-growing.

Surgery to stage the cancer is recommended for malignant sex cord-stromal tumors. Lymph node dissection (removal) is generally not included in surgical staging for these tumors.

If fertility is desired and the cancer hasn't spread beyond the ovary, fertility-sparing surgery with full staging is an option instead. If this is planned, talk to your doctor about having completion surgery after childbearing is finished. Completion surgery removes the uterus and the remaining ovary and fallopian tube.

Next steps of care depend on the cancer stage, as determined by surgery. Malignant sex cord stromal tumors are staged with the same system used for common ovarian cancers.

Stage 1

Observation is recommended after surgery for low-risk stage 1 tumors. Medium- or high-risk stage 1 tumors may be observed or treated with platinum-based chemotherapy. The preferred chemotherapy regimen at this time is paclitaxel and carboplatin.

Stage 2, 3, or 4

For those with a stage 2, 3, or 4 tumor, treatment options include platinum-based chemotherapy and radiation therapy. Radiation is an option only if there is a limited amount of cancer in the body. Otherwise, chemotherapy is usually given.

Surveillance

Granulosa cell tumors can return decades after treatment. Long-term surveillance is recommended after treatment for these tumors.

Physical exams are given as needed based on the cancer stage. Exams are often given once or twice a year for early-stage and low-risk cancers. For high-risk disease, exams are given more often (about every 4 to 6 months).

Sex cord-stromal tumors, especially granulosa cell tumors, can make a protein called inhibin. If the level of inhibin in your blood was high at the time of diagnosis, your doctor may continue to check it after treatment. If the level goes up, it could be a sign of relapse. Keep in mind that a blood test alone cannot confirm that the cancer has returned.

Testing for CA-125 and other tumor markers is individualized. If your doctor recommends it, how often the testing is needed is also based on stage. Blood tests may be ordered once or twice a year if the cancer is early-stage and low-risk. For high-risk disease, testing may be ordered every 4 to 6 months.

Imaging isn’t needed on a regular basis after treatment. It may be ordered if you develop cancer symptoms, if tumor marker levels are

high, or if there are concerning physical exam findings.

Relapse

A relapse (also called recurrence) is the return of cancer after being cancer-free. For those with a stage 2, 3, or 4 tumor who have a relapse, options include:

- Enrolling in a clinical trial
- Chemotherapy
- Hormone therapy

Chemotherapy is most often used. The regimen preferred at this time is paclitaxel and carboplatin. There are other recommended regimens that your provider may suggest.

If endocrine therapy is planned instead of chemotherapy, options include aromatase inhibitors (anastrazole, exemestane, letrozole), leuprolide or goserelin acetate (for granulosa cell tumors), and tamoxifen.

Your doctor may suggest another surgery to remove as much of the cancer as possible. Radiation therapy targeting the tumor area can help relieve symptoms caused by the cancer. Also keep in mind that receiving only supportive care without other treatment is always an option.

Key points

- Less common ovarian cancers (LCOCs) are often diagnosed during a surgery or other procedure.
- Receiving treatment as part of a clinical trial is strongly recommended, if there is an open trial you are eligible for.
- If a clinical trial isn't an option, treatment for these rare cancers is individualized and often involves chemotherapy.
- If not already done, you may have surgery first to remove any remaining cancer and to stage the cancer.

5
Survivorship

Survivorship begins on the day you learn you have ovarian cancer. It focuses on the physical, emotional, and financial issues unique to cancer survivors.

Your primary care provider

After finishing cancer treatment, your primary care provider (PCP) and oncologist will work together to make sure you get recommended follow-up care.

Ask your oncologist for a written survivorship care plan that includes:

- A summary of your cancer treatment history
- A description of possible short-term, late, and long-term side effects
- A schedule of follow-up cancer tests
- Information on when your care will be transferred to your PCP
- Recommendations for general health and well-being

For many survivors, the end of treatment signals a time of celebration but also of anxiety. This is normal. You may need support to address issues that arise from not having regular visits with your cancer care team.

Paying for care

Cancer survivors face a unique financial burden. Paying for doctor visits, tests, and treatments can become unmanageable, especially for those with little or no health insurance. You may also have costs not directly related to treatment, such as travel expenses and the cost of childcare or missed work. The term financial toxicity is used to describe the problems patients face related to the cost of medical care.

Financial toxicity can affect your quality of life and access to needed health care. If you need help paying for your cancer care, financial assistance may be available. Talk with a patient navigator, your treatment team's social worker, and your hospital's financial services department.

Healthy habits

Steps you can take to help prevent other health issues and to improve your quality of life are described next.

Cancer screening

Get screened for other types of cancer, such as breast, colorectal, lung, and skin cancer. Your primary care doctor should tell you what cancer screening tests you should have based on your age and risk level.

Other health care

Get other recommended health care for your age, such as blood pressure screening, hepatitis C screening, and immunizations (such as the flu shot).

Diet and exercise

Leading a healthy lifestyle includes maintaining a healthy body weight. Try to exercise at a moderate intensity for at least 150 minutes per week. All patients should have a discussion with their doctor before starting a new exercise regimen. Eat a healthy diet with lots of plant-based foods, including vegetables, fruits, and whole grains.

Alcohol may increase the risk of certain cancers. Drink little to no alcohol.

Quit smoking

If you use tobacco products, quit! Counseling and other resources are available. Your treatment team can help.

Complementary and alternative therapies

Complementary and alternative therapies may help with side effects and improve comfort and well-being during and after cancer treatment. Some of these practices and products include:

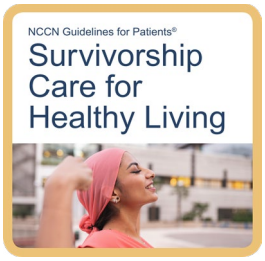
- ✓ Acupuncture
- ✓ Dietary supplements
- ✓ Eastern medicine
- ✓ Medical marijuana
- ✓ Herbal teas and preparations
- ✓ Homeopathy
- ✓ Hypnosis
- ✓ Meditation
- ✓ Reiki
- ✓ Yoga
- ✓ Massage therapy

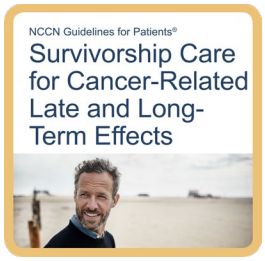
If you have questions or are curious about complementary therapies, talk to your treatment team. Many cancer centers have integrative oncology programs. This approach to cancer care combines conventional (standard) cancer treatment with complementary and alternative therapies. Be sure to tell your care team if you are taking any herbal supplements. Some can interact with chemotherapy.

More information

For more information on cancer survivorship, the following are available at NCCN.org/patientguidelines:

- *Survivorship Care for Healthy Living*
- *Survivorship Care for Cancer-Related Late and Long-Term Effects*





These resources address topics relevant to ovarian cancer survivors, including:

- Anxiety, depression, and distress
- Fatigue
- Pain
- Sexual health
- Sleep problems
- Healthy lifestyles
- Immunizations
- Working, insurance, and disability concerns

Key points

- Survivorship focuses on the physical, emotional, and financial issues unique to cancer survivors.
- Survivorship care is improved if your oncologist and primary care provider (PCP) work together to get the long-term care you need.
- A survivorship care plan is helpful in transitioning your care to your primary care doctor.
- Healthy habits play a key role in helping to prevent other diseases and second cancers.
- If you have concerns about paying for your cancer care, financial help may be available.

6
Making treatment decisions

It's important to be comfortable with the cancer treatment you choose. This choice starts with having an open and honest conversation with your care team.

It's your choice

In shared decision-making, you and your care team share information, discuss the options, and agree on a treatment plan. It starts with an open and honest conversation between you and your care team.

Treatment decisions are very personal. What is important to you may not be important to someone else. Some things that may play a role in your decision-making:

- What you want and how that might differ from what others want
- Your religious and spiritual beliefs
- Your feelings about certain treatments
- Your feelings about pain or side effects
- Cost of treatment, travel to treatment centers, and time away from school or work
- Quality of life and length of life
- How active you are and the activities that are important to you

Think about what you want from treatment. Discuss openly the risks and benefits of specific treatments and procedures. Weigh options and share concerns with your care team. If you take the time to build a relationship with your care team, it will help you feel supported when considering options and making treatment decisions.

Second opinion

It is normal to want to start treatment as soon as possible. While cancer can't be ignored, there is time to have another doctor review your test results and suggest a treatment plan. This is called getting a second opinion, and it's a normal part of cancer care. Even doctors get second opinions!

Things you can do to prepare:

- Check with your insurance company about its rules on second opinions. There may be out-of-pocket costs to see doctors who are not part of your insurance plan.
- Make plans to have copies of all your records sent to the doctor you will see for your second opinion.

Support groups

Many people diagnosed with cancer find support groups to be helpful. Support groups often include people at different stages of treatment. Some people may be newly diagnosed, while others may be finished with treatment. If your hospital or community doesn't have support groups for people with cancer, check out the websites listed in this book.

Questions to ask

Possible questions to ask your care team are listed on the following pages. Feel free to use these questions or come up with your own.

Questions about treatment options

1. Am I able to have surgery first? Why or why not?
2. Is a clinical trial an option for me? (also see next page)
3. How do my age, general health, and other factors affect my treatment options?
4. Which type of surgery do you recommend for me? How soon do I need it?
5. What if I am pregnant, or planning to get pregnant in the future?
6. Will I need chemotherapy after surgery? For how long?
7. Does my cancer have any biomarkers? How does this affect my treatment?
8. Are you suggesting options other than what NCCN recommends? If so, why?
9. Can you refer to me specialists in nutrition, sexual health, and/or mental health?

Questions about clinical trials

1. Do you recommend that I consider a clinical trial for treatment?
2. How do I find clinical trials that I can participate in?
3. What is the treatment used in the clinical trial? Has it been used for other types of cancer?
4. What are the risks and benefits of this treatment?
5. What side effects should I expect and how will they be managed?
6. How long will I be in the clinical trial?
7. Will I be able to get other treatment if this doesn't work?
8. How will you know if the treatment is working?
9. Will the clinical trial cost me anything?
10. What additional procedures or tests are required?

Questions about survivorship and late effects

1. How likely is it that I will be cancer free after treatment?
2. What late effects are caused by this treatment? How will these be screened?
3. What are the chances the cancer will return, or that I will get another type of cancer?
4. What follow-up tests will I need, and who is responsible for scheduling them?
5. Who do I see for follow-up care? How often? For how many years?
6. What should I do if I have trouble paying for follow-up care?
7. I am looking for a survivor support group. What supportive services or other resources can you recommend?
8. If I move after treatment, will you help me find a new doctor?

Questions about resources and support

1. Who can I talk to about help with housing, food, and other basic needs?
2. What help is available for transportation, childcare, and home care?
3. How much will treatment cost? How much will my insurance company cover?
4. What help is available to pay for medicines and treatment?
5. What other services are available to me and my caregivers?
6. How can I connect with others and build a support system?
7. Who can help me with my concerns about missing work or school?
8. Who can I talk to if I don't feel safe at home, at work, or in my neighborhood?
9. How can I get help to stop smoking or vaping?

Resources

Bone Marrow & Cancer Foundation
bonemarrow.org

CancerCare
cancercare.org/

Cancer Hope Network
Cancerhopenetwork.org

FORCE: Facing Our Risk of Cancer Empowered
facingourrisk.org

Imerman Angels
Imermanangels.org

National Coalition for Cancer Survivorship
www.canceradvocacy.org

National Ovarian Cancer Coalition (NOCC)
Ovarian.org

Ovarcome
ovarcome.org

Ovarian Cancer Research Alliance (OCRA)
ocrahope.org

Sharsheret
sharsheret.org

Triage Cancer
Triagecancer.org

Unite for HER
uniteforher.org

U.S. National Library of Medicine Clinical Trials Database
clinicaltrials.gov/

Words to know

abdomen
The belly area between the chest and pelvis.

adjuvant chemotherapy
Chemotherapy given after surgery.

ascites
Abnormal fluid buildup in the belly (abdomen) or pelvis.

bilateral salpingo-oophorectomy (BSO)
Surgery to remove both ovaries and both fallopian tubes.

biomarker
Features of a cancer or tumor that can help guide treatment. Biomarkers in some ovarian cancers include somatic *BRCA* mutations, homologous recombination deficiency, MSI, MMR, HER2 expression, TMB, *BRAF* V600E mutation, FRα expression, *RET* mutations, and *NTRK* gene fusion.

biopsy
Removal of small amounts of tissue from the body to be tested for disease.

***BRCA1* or *BRCA2* genes**
Genes involved in DNA repair. Abnormal changes (mutations) in either of these genes increases the risk of developing breast and ovarian cancer.

cancer antigen-125 (CA-125)
A substance that may be found in high amounts in the blood of patients with ovarian cancer.

cancer grade
A rating of how abnormal the cancer cells look under a microscope. High-grade cancers grow and spread more quickly than low-grade cancers.

cancer stage
A rating of the growth and spread of cancer in the body, as determined by surgery.

capsule
The thin layer of tissue that surrounds the ovaries.

cervix
The lower part of the uterus that connects to the vagina.

chemotherapy
Drugs that kill fast-growing cells throughout the body, including normal cells and cancer cells.

clear cell carcinoma of the ovary
A rare type of epithelial ovarian cancer, in which the insides of the cells look clear when viewed under a microscope. A less common ovarian cancer (LCOC).

clinical stage
The pre-treatment stage of a cancer. The clinical stage provides a best guess of how far the cancer has spread.

clinical trial
Research on an investigational test or treatment to assess its safety or how well it works.

cytoreductive surgery
Surgery to remove as much cancer as possible. Also called debulking surgery.

debulking surgery
Surgery to remove as much cancer as possible. Also called cytoreductive surgery.

endocrine therapy
Treatment that adds, blocks, or removes hormones. The goal is to help slow ovarian cancer growth. It may be used for persistent or recurrent ovarian cancer, most often for low-grade tumors. Also called anti-estrogen therapy.

endometrioid carcinoma of the ovary
A type of epithelial ovarian cancer. Grade 2 and 3 endometrioid tumors are common. Grade 1 endometrioid tumors are less common ovarian cancers (LCOCs).

epithelial ovarian cancer
Cancer that starts in the cells that form the outer layer of tissue around the ovaries.

fallopian tube
A thin tube through which an egg travels from the ovary to the uterus.

fertility-sparing surgery
Surgery that removes one ovary and the attached fallopian tube.

genetic counseling
A discussion with a health expert about the risk for a disease caused by changes in genes.

genetic testing
Testing of the blood or saliva for germline (inherited) mutations that cause ovarian cancer. Recommended for everyone diagnosed with ovarian cancer.

germline mutation
A gene change that is passed from a parent to their biological child(ren).

gynecologic oncologist
A surgeon who is an expert in cancers that start in the female reproductive organs. They can also give chemotherapy. A gynecologic oncologist should perform ovarian cancer surgery.

hereditary ovarian cancer
Ovarian cancer caused by gene mutations passed down from parent to child.

homologous recombination deficiency (HRD)
A feature of some ovarian cancers that may help guide treatment. *BRCA* mutations are 1 form of HRD. You can also be HRD positive without a *BRCA* mutation.

hot flashes
A health condition of intense body heat and sweat for short periods.

hyperthermic intraperitoneal chemotherapy (HIPEC)
A cancer treatment that involves filling the abdominal cavity with warmed chemotherapy drugs.

hysterectomy
Surgery to remove the uterus.

implant
Cancer cells that broke away from the first tumor and formed new tumors on the surface of nearby organs and tissues.

intraperitoneal (IP) chemotherapy
Chemotherapy drugs given directly into the belly (abdomen) through a small tube.

laparotomy
Surgery with a long, up-and-down cut through the wall of the belly (abdomen).

less common ovarian cancers (LCOC)
Rare types of ovarian cancer, some of which are epithelial cancers. Includes carcinosarcoma, clear cell carcinoma, mucinous neoplasms, grade 1 endometrioid, low-grade serous, borderline epithelial, malignant sex-cord stromal, and malignant germ cell tumors. Also called less common ovarian histologies (LCOHs).

low malignant potential (LMP) tumor
A tumor formed by abnormal cells that start in the epithelial cells of the ovary. This tumor type is slow growing and does not invade other tissue. A less common ovarian cancer (LCOC). Also called a borderline epithelial tumor.

lymph
A clear fluid containing white blood cells that fight infection and disease.

lymph nodes
Small groups of special disease-fighting cells located throughout the body.

Lynch syndrome
Abnormal changes within genes that increase the chances of developing colon, rectal, endometrial, ovarian, and other cancers. Also called hereditary non-polyposis colorectal cancer (HNPCC).

maintenance therapy
Treatment given to continue (maintain) good results of prior treatment.

medical oncologist
A doctor who is an expert in treating cancer with drugs such as chemotherapy.

menopause
The point in time when menstrual periods end.

metastasis
The spread of cancer cells from the first tumor to another body part.

microscopic metastases
Cancer cells that have spread from the first tumor to another body part and are too small to be seen with the naked eye.

mucinous carcinoma of the ovary
One of 4 types of epithelial cancer. A less common ovarian cancer (LCOC).

neoadjuvant chemotherapy
Chemotherapy given before surgery.

neuropathy
A nerve problem that causes pain, tingling, and numbness in the hands and feet.

omentum
The layer of fatty tissue that covers organs in the belly (abdomen).

ovary
One of a pair of organs that make hormones and eggs for reproduction.

pathologic stage
Pathologic stage or surgical stage is determined by examining tissue removed during surgery.

pathologist
A doctor who is an expert in testing cells and tissue to find disease.

peritoneum
The layer of tissue that lines the inside of the belly (abdomen) and pelvis and covers most organs in this space.

platinum-based chemotherapy
Treatment with two or more chemotherapy drugs and the main drug is made with platinum. Such drugs include cisplatin and carboplatin.

platinum-resistant
When cancer drugs made with platinum, such as cisplatin and carboplatin, do not work well against the cancer.

platinum-sensitive
When cancer drugs made with platinum, such as cisplatin and carboplatin, work well against the cancer.

PARP inhibitor
A type of oral targeted therapy used for maintenance therapy in some ovarian cancers.

relapse
The return of cancer after treatment. Also called a recurrence.

serous
A type of epithelial ovarian cancer. Grade 2 and 3 (high-grade) serous tumors are the most common ovarian cancers. Grade 1 (low-grade) serous tumors are less common ovarian cancers (LCOCs).

somatic mutation
A non-hereditary change in DNA. Also called tumor mutation.

supportive care
Treatment given to relieve the symptoms of a disease. Also called palliative care.

surgical menopause
The onset of menopause caused by surgery. Results from a sudden drop in estrogen in the body.

surgical stage
The extent of the cancer, as determined by surgery.

surgical stage
The extent of the cancer, as determined by examining the tissues removed during surgery.

targeted therapy
Treatment with drugs that target a specific or unique feature of cancer cells.

taxane
A type of chemotherapy drug. Often given with a platinum chemotherapy drug to treat ovarian cancer.

tumor marker
A substance found in body tissue or fluid that may be a sign of cancer.

unilateral salpingo-oophorectomy (USO)
Surgery that removes one ovary and the attached fallopian tube.

Take our survey and help make the NCCN Guidelines for Patients better for everyone!

NCCN.org/patients/comments

NCCN Contributors

This patient guide is based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Ovarian Cancer/Fallopian Tube Cancer/Primary Peritoneal Cancer, Version 3.2024. It was adapted, reviewed, and published with help from the following people:

Dorothy A. Shead, MS
Senior Director
Patient Information Operations

Erin Vidic, MA
Senior Medical Writer, Patient Information

Laura Phillips
Graphic Artist

The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Ovarian Cancer/Fallopian Tube Cancer/ Primary Peritoneal Cancer, Version 3.2024 were developed by the following NCCN Panel Members:

Deborah K. Armstrong, MD/Chair
The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins

Ronald D. Alvarez, MD, MBA/Vice Chair
Vanderbilt-Ingram Cancer Center

Floor J. Backes, MD
The Ohio State University Comprehensive Cancer Center - James Cancer Hospital and Solove Research Institute

*Lisa Barroilhet, MD
University of Wisconsin Carbone Cancer Center

Kian Behbakht, MD
University of Colorado Cancer Center

Andrew Berchuck, MD
Duke Cancer Institute

Lee-may Chen, MD
UCSF Helen Diller Family Comprehensive Cancer Center

Joshua Cohen, MD
City of Hope National Medical Center

*Marie DeRosa, RN
Patient Advocate

Eric L. Eisenhauer, MD
Mass General Cancer Center

David M. Gershenson, MD
The University of Texas MD Anderson Cancer Center

Heidi J. Gray, MD
Fred Hutchinson Cancer Center

Rachel Grisham, MD
Memorial Sloan Kettering Cancer Center

Ardeshir Hakam, MD
Moffitt Cancer Center

Angela Jain, MD
Fox Chase Cancer Center

Gottfried E. Konecny, MD
UCLA Jonsson Comprehensive Cancer Center

Charles A. Leath III, MD, MSPH
O'Neal Comprehensive Cancer Center at UAB

Gary Leiserowitz, MD
UC Davis Comprehensive Cancer Center

Babak Litkouhi, MD
Stanford Cancer Institute

*Joyce Liu, MD, MPH
Dana-Farber/Brigham and Women's Cancer Center

*Lainie Martin, MD
Abramson Cancer Center at the University of Pennsylvania

Daniela Matei, MD
Robert H. Lurie Comprehensive Cancer Center of Northwestern University

Michael McHale, MD
UC San Diego Moores Cancer Center

David S. Miller, MD
UT Southwestern Simmons Comprehensive Cancer Center

John Moroney, MD
The UChicago Medicine Comprehensive Cancer Center

Sanja Percac-Lima, MD, PhD
Mass General Cancer Center

Elena Ratner, MD, MDA
Yale Cancer Center/Smilow Cancer Hospital

*Sharon Robertson, MD, MPH
Indiana University Melvin and Bren Simon Comprehensive Cancer Center

Kerry Rodabaugh, MD
Fred & Pamela Buffett Cancer Center

John Schorge, MD
St. Jude Children's Research Hospital/ The University of Tennessee Health Science Center

Premal H. Thaker, MD
Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine

Shitanshu Uppal, MD
University of Michigan Rogel Cancer Center

Roberto Vargas, MD
Case Comprehensive Cancer Center/ University Hospitals Seidman Cancer Center and Cleveland Clinic Taussig Cancer Institute

*Andrea Wahner Hendrickson, MD
Mayo Clinic Comprehensive Cancer Center

*Theresa L. Werner, MD
Huntsman Cancer Institute at the University of Utah

Emese Zsiros, MD, PhD
Roswell Park Comprehensive Cancer Center

NCCN

Frankie Jones
Guidelines Layout Specialist

Emily Kovach
Guidelines Layout Specialist

Swathi Ramakrishnan, PhD
Oncology Scientist/Medical Writer

* Reviewed this patient guide. For disclosures, visit NCCN.org/disclosures.

NCCN Cancer Centers

Abramson Cancer Center
at the University of Pennsylvania
Philadelphia, Pennsylvania
800.789.7366 • pennmedicine.org/cancer

Case Comprehensive Cancer Center/
University Hospitals Seidman Cancer Center and
Cleveland Clinic Taussig Cancer Institute
Cleveland, Ohio
UH Seidman Cancer Center
800.641.2422 • uhhospitals.org/services/cancer-services
CC Taussig Cancer Institute
866.223.8100 • my.clevelandclinic.org/departments/cancer
Case CCC
216.844.8797 • case.edu/cancer

City of Hope National Medical Center
Duarte, California
800.826.4673 • cityofhope.org

Dana-Farber/Brigham and Women's Cancer Center |
Mass General Cancer Center
Boston, Massachusetts
877.442.3324 • youhaveus.org
617.726.5130 • massgeneral.org/cancer-center

Duke Cancer Institute
Durham, North Carolina
888.275.3853 • dukecancerinstitute.org

Fox Chase Cancer Center
Philadelphia, Pennsylvania
888.369.2427 • foxchase.org

Fred & Pamela Buffett Cancer Center
Omaha, Nebraska
402.559.5600 • unmc.edu/cancercenter

Fred Hutchinson Cancer Center
Seattle, Washington
206.667.5000 • fredhutch.org

Huntsman Cancer Institute at the University of Utah
Salt Lake City, Utah
800.824.2073 • healthcare.utah.edu/huntsmancancerinstitute

Indiana University Melvin and Bren Simon
Comprehensive Cancer Center
Indianapolis, Indiana
888.600.4822 • www.cancer.iu.edu

Mayo Clinic Comprehensive Cancer Center
Phoenix/Scottsdale, Arizona
Jacksonville, Florida
Rochester, Minnesota
480.301.8000 • Arizona
904.953.0853 • Florida
507.538.3270 • Minnesota
mayoclinic.org/cancercenter

Memorial Sloan Kettering Cancer Center
New York, New York
800.525.2225 • mskcc.org

Moffitt Cancer Center
Tampa, Florida
888.663.3488 • moffitt.org

O'Neal Comprehensive Cancer Center at UAB
Birmingham, Alabama
800.822.0933 • uab.edu/onealcancercenter

Robert H. Lurie Comprehensive Cancer
Center of Northwestern University
Chicago, Illinois
866.587.4322 • cancer.northwestern.edu

Roswell Park Comprehensive Cancer Center
Buffalo, New York
877.275.7724 • roswellpark.org

Siteman Cancer Center at Barnes-Jewish Hospital
and Washington University School of Medicine
St. Louis, Missouri
800.600.3606 • siteman.wustl.edu

St. Jude Children's Research Hospital/
The University of Tennessee Health Science Center
Memphis, Tennessee
866.278.5833 • stjude.org
901.448.5500 • uthsc.edu

Stanford Cancer Institute
Stanford, California
877.668.7535 • cancer.stanford.edu

The Ohio State University Comprehensive Cancer Center -
James Cancer Hospital and Solove Research Institute
Columbus, Ohio
800.293.5066 • cancer.osu.edu

The Sidney Kimmel Comprehensive
Cancer Center at Johns Hopkins
Baltimore, Maryland
410.955.8964
www.hopkinskimmelcancercenter.org

The UChicago Medicine Comprehensive Cancer Center
Chicago, Illinois
773.702.1000 • uchicagomedicine.org/cancer

The University of Texas MD Anderson Cancer Center
Houston, Texas
844.269.5922 • mdanderson.org

UC Davis Comprehensive Cancer Center
Sacramento, California
916.734.5959 • 800.770.9261
health.ucdavis.edu/cancer

UC San Diego Moores Cancer Center
La Jolla, California
858.822.6100 • cancer.ucsd.edu

UCLA Jonsson Comprehensive Cancer Center
Los Angeles, California
310.825.5268 • uclahealth.org/cancer

UCSF Helen Diller Family
Comprehensive Cancer Center
San Francisco, California
800.689.8273 • cancer.ucsf.edu

University of Colorado Cancer Center
Aurora, Colorado
720.848.0300 • coloradocancercenter.org

University of Michigan Rogel Cancer Center
Ann Arbor, Michigan
800.865.1125 • rogelcancercenter.org

University of Wisconsin Carbone Cancer Center
Madison, Wisconsin
608.265.1700 • uwhealth.org/cancer

UT Southwestern Simmons
Comprehensive Cancer Center
Dallas, Texas
214.648.3111 • utsouthwestern.edu/simmons

Vanderbilt-Ingram Cancer Center
Nashville, Tennessee
877.936.8422 • vicc.org

Yale Cancer Center/Smilow Cancer Hospital
New Haven, Connecticut
855.4.SMILOW • yalecancercenter.org

Notes

Index

NCCN GUIDELINES FOR PATIENTS®

Ovarian Cancer

2024

To support the NCCN Guidelines for Patients, visit

NCCNFoundation.org/Donate

National Comprehensive Cancer Network®
3025 Chemical Road, Suite 100
Plymouth Meeting, PA 19462
215.690.0300

NCCN.org/patients – For Patients | NCCN.org – For Clinicians

PAT-N-1793-0924