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Ovarian Cysts

The **ovaries** are two small organs located on either side of the **uterus**. An ovarian **cyst** is a sac or pouch filled with fluid or other tissue that forms on the ovary. In most cases, cysts do not cause symptoms and go away on their own. In other cases, they may cause pain or other problems and need treatment.

This pamphlet explains

- types of ovarian cysts
- ovarian cysts and cancer
- symptoms
- diagnosis and treatment

Types of Ovarian Cysts

Ovarian cysts are very common. They can occur during the childbearing years or after **menopause**. Most ovarian cysts are **benign** (not cancer). There also are benign ovarian tumors that can look like cysts when imaging is done.

Functional Cysts

The most common type of ovarian cyst is called a **functional cyst**. A functional cyst forms as a result of **ovulation**. Each month, several **eggs** begin to mature within the ovary. Each egg is encased in a sac called a **follicle**. During ovulation, one of the eggs fully matures and is released from its follicle into the **fallopian tube**. The now-empty follicle starts making a **hormone** called **progesterone**. At this stage, the follicle is called the **corpus luteum**. If the egg is not fertilized by a **sperm**, the corpus luteum shrinks.

There are two types of functional cysts:

1. Follicle cysts form when the follicle does not open to release the egg. Fluid builds up inside the follicle, causing a cyst.
2. Corpus luteum cysts form when the empty follicle seals off after the egg is released. These cysts can contain blood and other fluids.

Both types of cysts usually cause no symptoms. Sometimes, they cause mild discomfort or pain on one side of the lower abdomen. Most functional cysts go away without treatment within 6 to 8 weeks.

Teratomas

A **teratoma** is a cyst or benign tumor that contains different kinds of tissues that make up the body such as skin and hair. These cysts may be present from birth and can grow during the reproductive years. They may be found on one or both ovaries. In very rare cases, some teratomas can become cancer.

Cystadenomas

A **cystadenoma** is a benign tumor that develops from cells on the outer surface of the ovary. Sometimes they are filled with a watery fluid or a thick, sticky gel. They can grow very large even though they usually are benign.

Endometriomas

An **endometrioma** is an ovarian cyst that forms as a result of **endometriosis**. In this condition, endometrial tissue—tissue that usually lines the uterus—grows in areas outside of the uterus, such as on the ovaries. This tissue responds to monthly changes in hormones. Eventually, an endometrioma may form as the endometrial tissue on the ovary continues to shed with each **menstrual cycle**.

Ovarian Cysts and Cancer

Sometimes, a cyst or tumor may be **malignant** (cancerous). Age is an important risk factor for **ovarian cancer**. Ovarian cancer is very rare in young

women. Most cases of ovarian cancer occur in women older than 55.

Another important risk factor is a family history of breast or ovarian cancer.

Hereditary breast and ovarian cancer syndrome (HBOC) is a type of familial cancer. It often is caused by a change in the **BRCA1 and BRCA2** genes. There also are other genes that can cause ovarian cancer. Women with a family history of ovarian and breast cancer can be tested to see if they have these changes. Other risk factors for ovarian cancer include never having given birth, getting your first period at an early age, and late onset of menopause.

In its early stages, ovarian cancer may cause mild symptoms that can be easily mistaken for an upset stomach or **urinary tract infection (UTI)** (read the box “Warning Signs of Ovarian Cancer”). If you have any of these signs, and they do not go away or are getting worse, see your ob-gyn.

Symptoms

Most ovarian cysts do not cause symptoms. Many are found during a routine **pelvic exam** or imaging test done for another reason. Some cysts may cause a dull or sharp ache in the abdomen and pain during certain activities. Larger cysts may cause torsion (twisting) of the ovary. Torsion may cause pain on one side that comes and goes or can start very suddenly. Cysts that bleed or rupture (burst) also may cause severe, sudden pain.

Many other conditions can cause these symptoms, including **ectopic pregnancy**,

fibroids, and pelvic infections. Infections of the digestive system and kidney stones also can result in lower abdominal pain.

Diagnosis

If a cyst is found during a pelvic exam or an imaging exam, your ob-gyn will ask you questions about your symptoms and your personal and family medical history. Tests may be recommended to gather more information. These tests include an *ultrasound exam* and, in some cases, a blood test.

Ultrasound Exam

An ultrasound exam is an imaging test that uses sound waves to create pictures of the internal organs. For this test, a slender instrument called a *transducer* is placed in the *vagina* or on the abdomen. The views created by the sound waves show the shape, size, location, and whether the cyst is solid or filled with fluid. These features can give useful clues about what type of cyst you have, including whether a cyst is benign or malignant.

Blood Tests

Levels of certain substances in the blood may be present or increased in some women with ovarian cancer. These substances are called tumor markers. A blood test can be done to measure the levels of some of these markers.

These blood tests are not able to diagnose ovarian cancer and should not be used for screening. Results are used to assess the likelihood that a cyst or tumor on the ovary is cancer. If test results suggest an increased risk of cancer, you may be referred to a *gynecologic oncologist*, an ob-gyn who specializes in gynecologic cancer. A referral to a gynecologic oncologist does not mean

Warning Signs of Ovarian Cancer

If you have any of the following symptoms and they do not go away, are frequent, or get worse over time, you should contact your *obstetrician-gynecologist (ob-gyn)*:

- Bloating or an increase in abdominal size
- Pelvic or abdominal pain
- Difficulty eating or feeling full quickly

that you have cancer. It means only that you have a cyst that is best evaluated by a specialist.

The most common of these marker tests measures the level of a substance called **CA 125** in the blood. An increased level of CA 125, along with certain findings from ultrasound and physical exams, may raise concern for ovarian cancer, especially in a woman who is past menopause.

The CA 125 blood test has many limitations. About half of women with ovarian cancer that is in its earliest most treatable stage have a normal CA 125 level. An increased level of CA 125 can occur as a result of many other conditions besides cancer, including pregnancy, fibroids, endometriosis, and liver disease. These conditions most commonly occur before menopause. For this reason, the CA 125 test is a more accurate test for cancer in postmenopausal women.

Several other blood tests can be used to help identify whether a cyst or tumor on the ovary is concerning for ovarian cancer. Two different blood tests that measure several markers in addition to CA 125 are available. These tests may be more accurate in finding ovarian cancer in both premenopausal and postmenopausal women. More studies need to be done to confirm this.

Treatment

There are several treatment options for cysts. Choosing an option depends on many factors, including family history of ovarian or breast cancer, the type of cyst, whether you have symptoms, how large the cyst is, and your age.

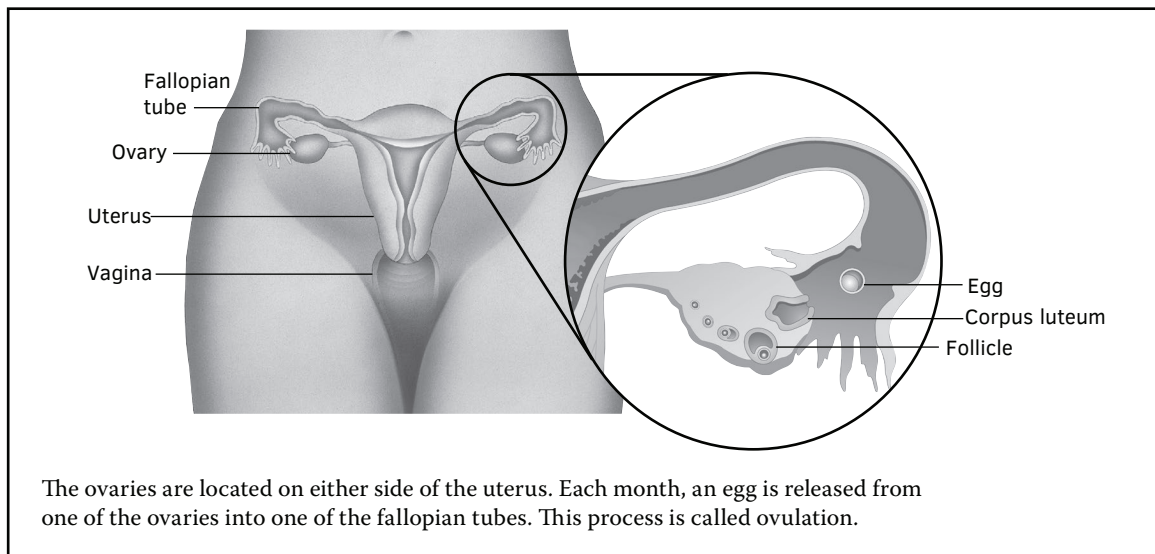
Watchful Waiting

Watchful waiting is a way of monitoring a cyst with repeat ultrasound exams to see if the cyst has changed in size or appearance. Your ob-gyn should recommend when to repeat the ultrasound exam and how long this follow-up should last. Most functional cysts go away on their own after one or two menstrual cycles. Even cysts as large as 10 cm may go away on their own. Watchful waiting is an option in many cases.

Surgery

Surgery usually is recommended if your cyst is very large or causing symptoms or if cancer is suspected. The timing, extent, and type of surgery depends on

- the size and type of cyst
- your age and whether you have other health problems
- your symptoms
- your desire to have children



Removing one or both ovaries can affect a woman's ability to have children. If you need to have surgery and you want to have children in the future, sometimes the cyst can be removed while leaving normal parts of the ovary. This surgery is called *cystectomy*. In other cases, one or both of the ovaries may need to be removed. This surgery is called *oophorectomy*.

Minimally Invasive Surgery

If your cyst is thought to be benign, *minimally invasive surgery* may be recommended. Minimally invasive surgery may be done using small (usually no more than half-inch long) incisions and a special instrument called a *laparoscope*.

A laparoscope is a long, slender device that is inserted into the abdomen through a small incision. It has a camera attached to it that allows the surgeon to view the abdominal and pelvic organs on an electronic screen. Other instruments that are used during surgery can be inserted through additional small incisions in the abdomen. They sometimes can be inserted through the same skin incision made for the laparoscope. This type of *laparoscopy* is called "single-incision" laparoscopy.

Laparoscopy has many benefits and fewer risks and side effects than "open" surgery, which requires a larger incision. Women who have a laparoscopy have shorter hospital stays, decreased pain, and a quicker recovery compared with women who have open surgery.

Open Surgery

In open surgery, an incision is made horizontally or vertically in the lower abdomen. Open surgery may be done if cancer is suspected or if the cyst is too large to be removed by laparoscopy. In some cases, a laparoscopy is planned but has to be changed to open surgery after the surgery starts.

Finally...

Ovarian cysts are common in women. Most are not cancer. Although most cysts do not cause any symptoms and go away on their own, your ob-gyn will want to keep track of cysts that are not clearly functional cysts to be sure that they do not grow and cause problems. Surgery sometimes is needed if a cyst grows very large or there is a risk that it may be

cancer. If cancer is suspected, it is important to remove the cyst intact. Sometimes open surgery is the only way to do this.

Glossary

BRCA1 and BRCA2: Genes that keep cells from growing too rapidly. Changes in these genes have been linked to an increased risk of breast cancer and ovarian cancer.

Benign: Not cancer.

CA 125: A substance in the blood that may increase when a person has cancerous tumors.

Corpus Luteum: Sac-like tissue that remains after an egg is released from an ovary.

Cyst: A sac or pouch filled with fluid.

Cystadenoma: A cyst or benign tumor that forms from the cells on the outer surface of the ovary.

Cystectomy: Surgery to remove a cyst.

Ectopic Pregnancy: A pregnancy in a place other than the uterus, usually in one of the fallopian tubes.

Eggs: The female reproductive cells made in and released from the ovaries. Also called the ova.

Endometrioma: A cyst that forms on the ovaries from endometrial tissue.

Endometriosis: A condition in which tissue that lines the uterus is found outside of the uterus, usually on the ovaries, fallopian tubes, and other pelvic structures.

Fallopian Tube: One of two tubes through which an egg travels from the ovary to the uterus.

Fibroids: Growths that form in the muscle of the uterus. Fibroids usually are noncancerous.

Follicle: The sac-like structure in which an egg develops inside the ovary.

Functional Cyst: A noncancerous cyst that forms in an ovary. This cyst usually resolves on its own without treatment.

Gynecologic Oncologist: A doctor with special training and experience in the diagnosis and treatment of cancer of the female reproductive organs.

Hereditary Breast and Ovarian Cancer (HBOC) Syndrome: A genetic condition that increases a person's risk of cancer of the breast, ovary, prostate, pancreas, and skin (melanoma).

Hormones: Substances made in the body that control the function of cells or organs.

Laparoscope: A thin, lighted telescope that is inserted through a small incision (cut) in the abdomen to view internal organs or to perform surgery.

Laparoscopy: A surgical procedure in which a thin, lighted telescope called a laparoscope is

inserted through a small incision (cut) in the abdomen. The laparoscope is used to view the pelvic organs. Other instruments can be used with it to perform surgery.

Malignant: A way to describe abnormal cells or tumors that are able to spread to other parts of the body.

Menopause: The time when a woman's menstrual periods stop permanently. Menopause is confirmed after 1 year of no periods.

Menstrual Cycle: The monthly process of changes that occur to prepare a woman's body for possible pregnancy. A menstrual cycle is defined as the first day of menstrual bleeding of one cycle to the first day of menstrual bleeding of the next cycle.

Minimally Invasive Surgery: Surgery done through a very small cut.

Obstetrician—Gynecologist (Ob-Gyn): A doctor with special training and education in women's health.

Oophorectomy: Surgery to remove an ovary.

Ovarian Cancer: Cancer that affects one or both of the ovaries.

Ovaries: The organs in women that contain the eggs necessary to get pregnant and make important hormones, such as estrogen, progesterone, and testosterone.

Ovulation: The time when an ovary releases an egg.

Pelvic Exam: A physical examination of a woman's pelvic organs.

Progesterone: A female hormone that is made in the ovaries and prepares the lining of the uterus for pregnancy.

Sperm: A cell made in the male testicles that can fertilize a female egg.

Teratoma: A noncancerous mass on the ovary.

Transducer: A device that sends out sound waves and translates the echoes into electrical signals.

Ultrasound Exam: A test in which sound waves are used to examine inner parts of the body. During pregnancy, ultrasound can be used to check the fetus.

Urinary Tract Infection (UTI): An infection in any part of the urinary system, including the kidneys, bladder, or urethra.

Uterus: A muscular organ in the female pelvis. During pregnancy, this organ holds and nourishes the fetus. Also called the womb.

Vagina: A tube-like structure surrounded by muscles. The vagina leads from the uterus to the outside of the body.

SAMPLE

This information is designed as an educational aid for the public. It offers current information and opinions related to women's health. It is not intended as a statement of the standard of care. It does not explain all of the proper treatments or methods of care. It is not a substitute for the advice of a physician. For ACOG's complete disclaimer, visit www.acog.org/WomensHealth-Disclaimer.

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What is HPV?

Human papillomavirus (HPV) infection is the most common sexually transmitted infection (STI) in the United States. HPV infections can cause genital warts. HPV infections also can cause cell changes that can lead to cancer over time, including cancer of the cervix. There are more than 100 types of HPV, but only a few types can cause disease.

How common is HPV?

HPV infections are so common that 8 in 10 people who are sexually active will get at least one type of HPV in their lives. About 14 million people get a new HPV infection every year. This includes adults and teens.

Will I know if I have HPV?

Genital warts can be a sign of infection. When HPV infection affects the cervix, there are no symptoms. Usually, people with HPV infection do not know they have it. This is one reason why HPV spreads easily.

How long do HPV infections last?

The immune system fights most HPV infections and clears them from the body, usually within 2 years. But sometimes HPV infections can last longer. A longer infection with a “high-risk” HPV type can turn into cancer. It usually takes years for this to happen.

Do all women with HPV infections get cancer?

No. In most women, HPV infections are cleared from the body by the immune system. For women with ongoing infection, regular screening is done with Pap tests. The Pap test looks for abnormal cells in the cervix. Finding and treating cell changes early can help prevent cervical cancer.

Can HPV be prevented?

Yes. One way to protect against HPV infection is by getting the HPV vaccine. The vaccine is safe and effective and protects against the HPV types that are the most common cause of genital warts and cancer.

Is the HPV vaccine safe?

Yes. Studies show that the vaccine is safe and effective. Millions of people around the world have gotten the HPV vaccine without serious side effects. The vaccine does not contain live viruses, so it cannot cause an HPV infection. The Centers for Disease Control and Prevention monitors the HPV vaccine and its safety.

Is the HPV vaccine effective?

Yes, the HPV vaccine is highly effective, especially when given before a person has sex. The vaccine is given as a series of shots, and it can reduce the risk of HPV-related genital warts and cancer by up to 99 percent when all shots have been given. HPV vaccine is one of the most effective vaccines you can get.

Who should be vaccinated?

Vaccination works best when it is done before a person is sexually active and exposed to HPV. The best age for HPV vaccination of girls and boys is 11 or 12, but it can be given starting at age 9 and through age 26.

Why is HPV vaccination also recommended for boys?

Boys can get HPV-related infections of the penis, anus, mouth, and throat. No effective screening tests exist for anal cancer or throat cancer. Also, males who receive the HPV vaccine are less likely to infect future sexual partners.

Why is HPV vaccination recommended for children?

The body develops better protection against HPV when the vaccine is given between age 11 and 12. This may result in longer-lasting immunity to HPV-related diseases.

How is the HPV vaccine given?

The HPV vaccine is given as a series of shots:

- For those age 9 to 14, two shots of vaccine are recommended. The second shot should be given 6 to 12 months after the first one.
- For those age 15 through 26, three shots of vaccine are recommended. The second shot should be given 1 to 2 months after the first one. The third shot should be given 6 months after the first shot.

What happens if someone misses a shot?

If a child has not gotten all of the shots, they do not have to “start over.” They can get the next shot that is due even if the time between them is longer than recommended. This is also true for adults who have not completed the number of recommended shots. Talk with your health care professional if you have questions about getting any shots you missed.

What if someone older than 26 wants the HPV vaccine?

If a person older than 26 has not been vaccinated and is at risk of a new HPV infection, they should talk with their health care professional about whether they need the HPV vaccine. The vaccine is approved for people through age 45.

Will vaccinating girls against HPV encourage them to become sexually active sooner?

No. Studies show that HPV vaccination has not been linked to girls having an earlier start to sexual activity or more sexual activity.

What are the side effects of the HPV vaccine?

The most common side effect of the HPV vaccine is soreness and redness where the shot is given. There have been no reports of severe side effects or bad reactions to the vaccine.

Can I get the shot if I have already had sex?

Yes. If you have had sex, you may already be infected with one or more types of HPV. But the vaccine may still protect you against HPV types you do not have yet.

Resources from ACOG

Cervical Cancer Screening

www.acog.org/Patients-CervicalCancerScreening

Cervical Cancer

www.acog.org/Patients-CervicalCancer

Immunization

www.acog.org/topics/immunization