

PATIENT EDUCATION



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Evaluating Infertility

*If you are trying to have a baby and have not gotten pregnant, you and your partner may need an **infertility** evaluation. During an infertility evaluation, exams and tests are done to try to find the reason why you and your partner have not gotten pregnant. If a cause is found, treatment may be possible. In many cases, infertility can be successfully treated even if no cause is found.*

This pamphlet explains

- *how pregnancy occurs*
- *causes of infertility*
- *when to consider an infertility evaluation*
- *the first visit with a specialist*
- *testing for infertility*
- *next steps*

How Pregnancy Occurs

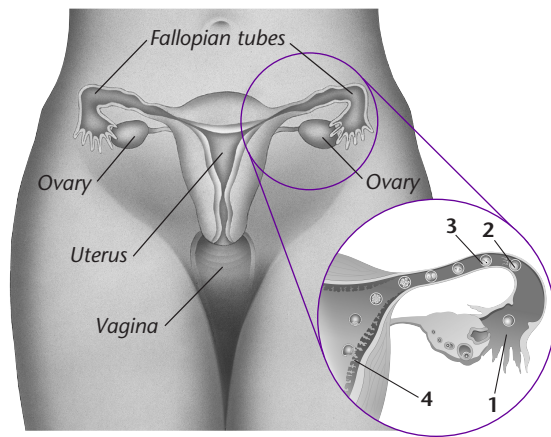
At **puberty**, the **ovaries** contain many immature **eggs**. The eggs are contained in **follicles**. During each **menstrual cycle**, a few of these eggs start to mature. One of the eggs completes this process and is released from the ovary. This is called **ovulation**.

Ovulation occurs about 14 days before the start of the next menstrual cycle. If your menstrual cycle is 28 days, ovulation occurs between day 13 and day 15, counting from the first day of your last **menstrual period**. Once an egg is released, it normally enters one of the **fallopian tubes**.

Sperm cells are made in a man's **testicles**. When a man **ejaculates** during **sexual intercourse**, **semen** is released into the **vagina**. Semen is the fluid that carries the sperm cells. These cells pass through the woman's **cervix** and into the fallopian tubes.

If a sperm cell and egg meet in a fallopian tube, they may join. This is called **fertilization**. The joined egg and sperm form a single **cell**. This cell divides, forming two cells, then four cells, and so on. The rapidly dividing ball of cells moves through the fallopian tube into the **uterus**. About 7 days after fertilization, it attaches to the uterine lining to grow during pregnancy.

How Pregnancy Occurs



Each month during ovulation, an egg is released (1) and moves into one of the fallopian tubes. If a woman has sex around this time, and an egg and sperm meet in the fallopian tube (2), the two may join. If they join (3), the fertilized egg then moves through the fallopian tube into the uterus and attaches there to grow during pregnancy (4). If a problem occurs with any of these events, infertility may result.

Hormones play important roles in these functions. In women, **estrogen** and **progesterone** control the menstrual cycle. **Follicle-stimulating hormone (FSH)** signals the follicles to start ripening, and **luteinizing hormone (LH)** triggers ovulation. In men, **testosterone** is needed for sperm production. Other hormones are produced during pregnancy. If problems occur with any of these events, infertility may result.

Causes of Infertility

Infertility in opposite-sex couples may be caused by many factors. Female factors are the cause of infertility about one third of the time, and male factors about one third of the time. For the remaining couples, infertility may be caused by a combination of factors in both partners. Sometimes no cause is found. This is called unexplained infertility.

The most common cause of female infertility is a problem with ovulation. The most common cause of male infertility is a problem with sperm cells and how they function. Other factors that may affect fertility include age, lifestyle, and health conditions.

Age

For healthy couples in their 20s or early 30s, the chance that a woman will get pregnant is about 25 to 30 percent in any single menstrual cycle. This percentage starts to decline in a woman's early 30s. It declines more rapidly after age 37. By age 40, a woman's chance of getting pregnant drops to less than 10 percent per menstrual cycle. A man's fertility also declines with age, but not as predictably.

Lifestyle

Women who are underweight, overweight, or exercise too much may have a harder time getting pregnant. In women, drinking alcohol at moderate or heavy levels and smoking may reduce fertility. In men, smoking, heavy drinking, and using marijuana can reduce sperm count and movement.

Health Conditions

In women, several health problems can affect fertility, including

- problems with the reproductive organs or hormones
- scarring or blockages of the fallopian tubes (from past **sexually transmitted infections [STIs]** or **endometriosis**)
- problems with the **thyroid gland** or **pituitary gland**

Men also can have physical problems that affect fertility. For example, infertility can be caused when the tubes that carry sperm from the testicles are blocked.

When to Consider an Infertility Evaluation

Experts recommend an infertility evaluation if you have not gotten pregnant after 1 year of having regular sexual intercourse without using **birth control**. If you are older than 35, an evaluation is recommended after 6 months of trying. If you are older than 40, talk with your **obstetrician-gynecologist (ob-gyn)** now about an evaluation.

Your ob-gyn usually will do the first assessment. You also may see a **reproductive endocrinologist** (an ob-gyn with special training in infertility). Men may see a **urologist**. It is important to find a specialist you are comfortable with.

The First Visit With a Specialist

The first visit with a fertility specialist usually involves a detailed medical history and a physical exam. You will be asked questions about your menstrual period, abnormal vaginal bleeding or discharge, pelvic pain, and disorders that can affect reproduction, such as thyroid disease. You and your partner will be asked about health concerns, including

- medications (both prescription and over-the-counter) and herbal remedies
- illnesses, including STIs and past surgeries
- **birth defects** in your family
- past pregnancies and their outcomes
- use of tobacco, alcohol, and illegal drugs
- use of marijuana (recreational or medical)

You and your partner also will be asked questions about your sexual history, including

- methods of birth control
- how long you have been trying to get pregnant
- how often you have sex and whether you have difficulties

- if you use lubricants during sex
- past sexual relationships

Infertility can be stressful. Your ob-gyn or specialist may talk about the stress of infertility and ways to deal with it. Talk with him or her about any concerns you have.

Testing for Infertility

Tests for infertility include laboratory tests, imaging tests, and certain procedures. Imaging tests and procedures look at the reproductive organs and how they work to find problems. Laboratory tests often involve testing blood samples or other samples, such as semen, for problems.

The infertility evaluation can be finished within a few menstrual cycles in most cases. Some health insurance plans may cover the cost of an infertility evaluation. It is a good idea to call your insurance company to find out before you start your evaluation.

Basic Testing for Men

Testing for a man often involves a semen analysis (sperm count). If the semen analysis is abnormal or areas of concern are found in the man's history, other tests may be considered.

Semen analysis. A semen analysis is done to assess the amount of sperm, the shape of the sperm, and the way that the sperm move. A semen analysis also can show if there is an infection in the reproductive system.

The semen sample is collected by **masturbation** or by using a special condom during intercourse. The analysis may need to be done more than once. You and your partner may need to abstain from sex for a few days before giving the sample. Your doctor will give you instructions.

Blood tests. These tests measure levels of male reproductive hormones. Too much or too little of these hormones can cause problems with making sperm or with having sex.

Other tests. If results of a semen analysis or physical exam show a problem, other tests may be done. For example, an **ultrasound exam** of the **scrotum** may be done to look for problems in the testicles.

Basic Testing for Women

In general, blood tests for women are done first. If no answers are found, imaging and other testing may be done.

Tests. Common ways to assess fertility in women include the following:

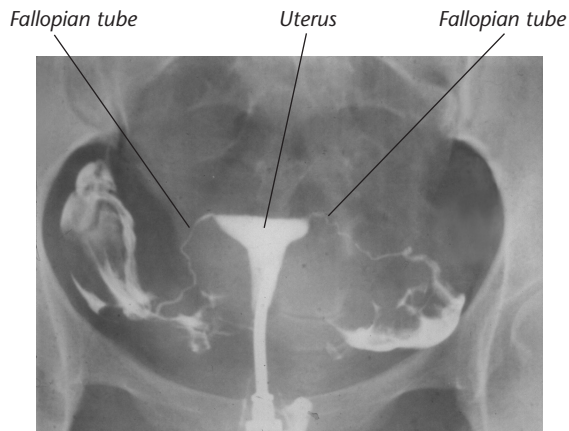
- **Urine LH test (ovulation predictor kits)**—This test determines when and if you ovulate by detecting an increase in the levels of the hormone LH in the urine. A surge in the level of LH triggers the release of an egg. If the test result is positive, it suggests that ovulation will occur in the next 24 to 48 hours. This gives you an idea of the best time to have sex.

- **Progesterone test**—A sample of blood is taken about 1 week before you expect your menstrual period. The level of progesterone is measured. An increased level shows that you have ovulated.
- **Thyroid function tests**—Problems with the thyroid gland may cause infertility problems. If a thyroid problem is suspected, levels of hormones that control the thyroid gland are measured to see if it is working normally.
- **Prolactin level test**—This blood test measures the level of the hormone prolactin. High prolactin levels can disrupt ovulation.
- **Tests of ovarian reserve**—The term ovarian reserve refers to a woman's supply of eggs. Blood tests are used to check the remaining number of eggs in the ovaries.
- **Tracking *basal body temperature (BBT)***—Track-ing your basal body temperature can be done at home. A woman's temperature rises around the time of ovulation. To track ovulation, you will need to take your temperature by mouth every morning before you get out of bed. You record it on a chart for two or three menstrual cycles.

Charting these monthly temperature changes can confirm ovulation but it cannot predict it. So your BBT chart should not be the only information you use to decide when to have sex. Some women also monitor their cervical mucus while charting BBT. Just before ovulation, a woman's cervical mucus is thin, slippery, and stretchy. Cervical mucus monitoring is a natural way to help a woman identify her most fertile days.

Imaging tests and procedures. Different imaging tests and procedures are used to look at the uterus, ovaries, and fallopian tubes to find problems. Some procedures also are used to treat certain problems if they are found. The procedures that you have depend on your symptoms as well as the results of other tests. Some are done with **local anesthesia** or **general anesthesia**. Common imaging tests for female infertility include the following:

- **Ultrasound exam**—This test can predict when ovulation will occur by viewing changes in the follicles.
- **Sonohysterography**—A special ultrasound exam that looks for scarring or other problems inside the uterus.
- **Hysterosalpingography**—An X-ray procedure that shows the inside of the uterus and whether the fallopian tubes are blocked.
- **Hysteroscopy**—A procedure using a camera with a thin light source that is inserted through the cervix and into the uterus. This can show problems inside the uterus and help guide minor surgery.
- **Laparoscopy**—A procedure using a camera with a thin light source that is inserted through the abdomen. This can show the fallopian tubes, ovaries, and outside of the uterus.



Hysterosalpingography is an X-ray procedure that can show blockage or growths inside the uterus and fallopian tubes. This X-ray shows a normal uterus and fallopian tubes. (Photo courtesy of Ricardo Azziz, MD)

Next Steps

Infertility can be treated in many ways. Treatments may include

- lifestyle changes
- surgery
- treatment of hormone problems
- ovulation stimulation
- **intrauterine insemination (IUI)**
- **assisted reproductive technology (ART)**

After your evaluation, talk with your ob-gyn or specialist about the best options for you and your partner.

Finally...

Depending on your age, if you have not been able to get pregnant after 6 to 12 months of having sex without using birth control, you may want to have an infertility evaluation. Certain tests may help find the cause of infertility. Even if no cause is found, infertility sometimes can be treated successfully.

Glossary

Assisted Reproductive Technology (ART): Treatments or procedures that are done to start a pregnancy. This may include handling eggs and sperm or embryos.

Basal Body Temperature (BBT): The temperature of the body at rest.

Birth Control: Devices or medications used to prevent pregnancy.

Birth Defects: Physical problems that are present at birth.

Cell: The smallest unit of a structure in the body. Cells are the building blocks for all parts of the body.

Cervix: The lower, narrow end of the uterus at the top of the vagina.

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

Ejaculates: Releases semen from the penis at the time of orgasm.

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.

Estrogen: A female hormone produced in the ovaries.

Fallopian Tubes: Tubes through which an egg travels from the ovary to the uterus.

Fertilization: A multistep process that joins the egg and the sperm.

Follicles: The sac-like structures in which eggs develop inside the ovary.

Follicle-Stimulating Hormone (FSH): A hormone made by the pituitary gland in the brain that helps an egg to mature.

General Anesthesia: The use of drugs that create a sleep-like state to prevent pain during surgery.

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

Hysterosalpingography: A special X-ray procedure in which a small amount of fluid is placed in the uterus and fallopian tubes to find abnormal changes or see if the tubes are blocked.

Hysteroscopy: A procedure in which a lighted telescope is inserted into the uterus through the cervix to view the inside of the uterus or perform surgery.

Infertility: The inability to get pregnant after 1 year of having regular sexual intercourse without the use of birth control.

Intrauterine Insemination (IUI): A procedure in which a man's sperm is placed in a woman's uterus.

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.

Local Anesthesia: The drugs that stop pain in a part of the body.

Luteinizing Hormone (LH): A hormone made in the pituitary gland that helps an egg to be released from the ovary.

Masturbation: Self-stimulation of the genitals.

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.

Menstrual Period: The monthly shedding of blood and tissue from the uterus.

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

Ovaries: 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.

Pituitary Gland: A gland located near the brain that controls growth and other changes in the body.

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

Puberty: The stage of life when the reproductive organs start to function and other sex features develop. For women, this is the time when menstrual periods start and the breasts develop.

Reproductive Endocrinologist: An obstetrician-gynecologist with special training to manage disorders related to hormones of the reproductive system. These specialists also treat infertility.

Scrotum: The external genital sac in the male that contains the testicles.

Semen: The fluid made by male sex glands that contains sperm.

Sexual Intercourse: The act of the penis of the male entering the vagina of the female. Also called "having sex" or "making love."

Sexually Transmitted Infection (STI): An infection that is spread by sexual contact. Infections include chlamydia, gonorrhea, human papillomavirus (HPV), herpes, syphilis, and human immunodeficiency virus (HIV, the cause of acquired immunodeficiency syndrome [AIDS]).

Sonohysterography: A procedure in which sterile fluid is injected into the uterus through the cervix while ultrasound images are taken of the inside of the uterus.

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

Testicles: Paired male organs that make sperm and the male sex hormone testosterone. Also called "testes."

Testosterone: A hormone made by the testes in men and in smaller amounts by the ovaries in women. This hormone is responsible for male sex characteristics such as hair growth, muscle development, and a lower voice.

Thyroid Gland: A butterfly-shaped gland located at the base of the neck in front of the windpipe. This gland makes, stores, and releases thyroid hormone, which controls the body's metabolism and regulates how parts of the body work.

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.

Urologist: A physician who specializes in treating problems of the kidneys, bladder, and male reproductive system.

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

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

This information is designed as an educational aid to patients and sets forth current information and opinions related to women's health. It is not intended as a statement of the standard of care, nor does it comprise all proper treatments or methods of care. It is not a substitute for a treating clinician's independent professional judgment. For ACOG's complete disclaimer, visit www.acog.org/WomensHealth-Disclaimer.

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