



The American College of  
Obstetricians and Gynecologists

FAQ

FREQUENTLY ASKED QUESTIONS

FAQ025

SPECIAL PROCEDURES

## Ultrasound Exams

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### What is ultrasound?

**Ultrasound** is energy in the form of sound waves. The most common type of ultrasound exam is called two-dimensional (2D) ultrasound. In this type of ultrasound, a **transducer** sends sound waves through the body. The sound waves hit tissues, body fluids, and bones. The waves then bounce back, like echoes. The transducer receives these echoes, which are converted into images of the internal organs and—during pregnancy—the **fetus**.

### How is ultrasound used in women's health care?

Ultrasound can be used to diagnose and monitor certain problems, such as a pelvic mass, a breast lump, abnormal bleeding, pelvic pain, or infertility. It also can be used during pregnancy to monitor the fetus.

### How is ultrasound used during pregnancy?

Ultrasound is used during pregnancy to find out whether the growing fetus inside your **uterus** is developing normally. It can be used to check the anatomy of the fetus for defects or problems. It also can be used to find out the following information:

- Age of the fetus
- Location of the **placenta**
- Fetal position, movement, breathing, and heart rate
- Amount of **amniotic fluid** in the uterus
- Number of fetuses

Ultrasound may be used to screen for certain birth defects, such as **Down syndrome**. Ultrasound also is used during **chorionic villus sampling** and **amniocentesis** to help guide these procedures.

### How many ultrasound exams will I have during my pregnancy?

You may have at least one standard exam during your pregnancy. This ultrasound exam usually is performed at about 16–20 weeks of pregnancy. Some women may have an ultrasound exam in the first **trimester** of pregnancy. If a problem occurs during pregnancy, such as bleeding or pelvic pain, ultrasound may be used to help find the cause.

### Where is an ultrasound exam done?

An ultrasound exam may be done in a health care provider's office or a hospital.

### Who performs the ultrasound exam?

It may be performed by your health care provider or a specially trained technician.

### How is the ultrasound exam performed?

During an ultrasound exam, the transducer is either moved across your abdomen (**transabdominal ultrasound**) or placed in your vagina (**transvaginal ultrasound**).

### What type of ultrasound exam will I have?

The type of ultrasound exam you have depends on what types of images your health care provider needs and why the exam is being done. If you are pregnant, it also depends on how far along you are in your pregnancy. Transvaginal ultrasound often is used in early pregnancy. Transabdominal ultrasound often is used after about 10 weeks of pregnancy. Your weight also can determine which type of exam is needed.

### What do I need to do to prepare for a transabdominal ultrasound exam?

If you are having a transabdominal ultrasound exam, wear loose-fitting clothes. This will allow your abdomen to be exposed easily. You may need to drink several glasses of water during the 2 hours before your exam. This will make your bladder full. A full bladder is helpful because sound waves pass more easily through liquid than through air.

### What happens during a transabdominal ultrasound exam?

For this exam, you will lie on a table with your abdomen exposed from the lower part of the ribs to the hips. A gel is applied to the surface of the abdomen. This improves contact of the transducer with the skin surface. The handheld transducer then is moved along the abdomen.

### What happens during a transvaginal ultrasound exam?

For a transvaginal ultrasound exam, you will be asked to change into a hospital gown or undress from the waist down. You do not need to fill your bladder before the test. You will lie on your back with your feet in stirrups, like for a pelvic exam. The transducer for this exam is shaped like a wand. It is covered with a latex sheath, like a condom, and lubricated before it is inserted into the vagina.

### What is a specialized ultrasound exam?

A specialized ultrasound exam often uses additional technology to examine a particular organ. If your health care provider suspects a problem based on other tests, you may have a specialized ultrasound exam.

### What are the types of specialized ultrasound exams?

Specialized ultrasound exams include Doppler ultrasound, three-dimensional and four-dimensional (3D and 4D) ultrasound, and **sonohysterography**.

### What is Doppler ultrasound?

This test is done during pregnancy using transabdominal ultrasound. Sound waves are used to measure blood flow in the fetus's **umbilical cord** or other blood vessels. It also can be used to listen to the heartbeat. A health care provider may order this test if the fetus is not growing normally or with other tests to detect fetal **anemia**.

### What are 3D and 4D ultrasound?

In a 3D ultrasound exam, multiple 2D images are taken at various angles. The images then are assembled into a 3D image. A 4D image is similar to a 3D image, but it shows movement. A 3D or 4D ultrasound sometimes is done when a specific problem is suspected during pregnancy, such as a problem with the placenta or fetus.

### What is sonohysterography?

This test is used to look for problems within the uterus, often as part of an infertility evaluation. For sonohysterography, you first have a transvaginal ultrasound exam. Next, a catheter (a thin tube) is inserted through the **cervix**. A saline solution (salt water) is injected through the catheter into the uterus. The saline makes the inside of the uterus easier to see with ultrasound.

## What are the risks of ultrasound exams?

Currently, there is no reliable evidence that ultrasound is harmful to a developing fetus. No links have been found between ultrasound and birth defects, childhood cancer, or developmental problems later in life. However, it is possible that effects could be identified in the future. For this reason, it is recommended that ultrasound exams be performed only for medical reasons by qualified health care providers.

## Glossary

**Amniocentesis:** A procedure in which a needle is used to withdraw and test a small amount of amniotic fluid and cells from the sac surrounding the fetus.

**Amniotic Fluid:** Water in the sac surrounding the fetus in the mother's uterus.

**Anemia:** Abnormally low levels of blood or red blood cells in the bloodstream.

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

**Chorionic Villus Sampling:** A procedure in which a small sample of cells is taken from the placenta and tested.

**Down Syndrome:** A genetic disorder caused by the presence of an extra chromosome and characterized by intellectual disability, abnormal features of the face, and medical problems such as heart defects.

**Fetus:** The developing organism in the uterus from the ninth week of pregnancy until the end of pregnancy.

**Placenta:** Tissue that provides nourishment to and takes waste away from the fetus.

**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.

**Transabdominal Ultrasound:** A type of ultrasound in which a device is moved across the abdomen.

**Transducer:** A device that emits sound waves and translates the echoes into electrical signals.

**Transvaginal Ultrasound:** A type of ultrasound in which a device specially designed to be placed in the vagina is used.

**Trimester:** One of the three 3-month periods into which pregnancy is divided.

**Ultrasound:** A test in which sound waves are used to examine internal structures. During pregnancy, it can be used to examine the fetus.

**Umbilical Cord:** A cord-like structure containing blood vessels that connects the fetus to the placenta.

**Uterus:** A muscular organ located in the female pelvis that contains and nourishes the developing fetus during pregnancy.

## If you have further questions, contact your obstetrician–gynecologist.

**FAQ025:** Designed as an aid to patients, this document sets forth current information and opinions related to women's health. The information does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

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