



Ultrasound Exams

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What is ultrasound?

Ultrasound is energy in the form of sound waves. During an **ultrasound exam**, a **transducer** sends sound waves through the body. The sound waves come into contact with tissues, body fluids, and bones. The waves then bounce back, like echoes. The transducer receives these echoes, which are turned into images. The images can be viewed as pictures on a video screen.

How is ultrasound used in women's health care?

Ultrasound is used to monitor pregnancy and to diagnose and monitor medical conditions that are not related to pregnancy.

How is ultrasound used during pregnancy?

Ultrasound is used to view the **fetus** inside the **uterus**. It allows your **obstetrician–gynecologist (ob-gyn)** or other health care professional to check the fetus's health and development, monitor your pregnancy, and detect many **congenital anomalies**. Ultrasound also is used during **chorionic villus sampling** and **amniocentesis** to help guide these procedures. There are three types of prenatal ultrasound exams: 1) standard, 2) limited, and 3) specialized.

What is a standard ultrasound exam?

A standard ultrasound exam checks the fetus's physical development, screens for major congenital anomalies, and estimates **gestational age**. A standard ultrasound exam also can provide information about the following:

- The fetus's position, movement, breathing, and heart rate
- An estimate of the fetus's size and weight
- The amount of **amniotic fluid** in the uterus
- The location of the **placenta**
- The number of fetuses

If the fetus is in a good position, it may be possible to tell the sex.

What is a limited ultrasound exam?

A limited ultrasound exam is done to answer a specific question. For example, if you are in labor, a limited ultrasound exam may be done to check the fetus's position in the uterus. If you have vaginal bleeding, ultrasound may be used to see if the fetus's heart is still beating or if the placenta is too low.

What is a specialized ultrasound exam?

A specialized ultrasound exam is performed if a problem is suspected based on risk factors or other tests. For example, if there are signs that the fetus is not growing well, the fetus's growth rate can be tracked throughout pregnancy with specialized ultrasound exams. Depending on what the suspected problem might be, specialized techniques may be used, such as Doppler ultrasonography and 3-D ultrasonography.

How many ultrasound exams will I have during my pregnancy?

You should have at least one standard exam during your pregnancy, which usually is performed at 18–22 weeks of pregnancy. Some women may have an ultrasound exam in the first **trimester** of pregnancy. A first-trimester ultrasound exam is not standard because it is too early to see many of the fetus's limbs and organs in detail. An ultrasound exam done this early is used to do the following:

- Estimate gestational age
- Help screen for certain **genetic disorders**
- Count the number of fetuses
- Check the fetus's heart rate
- Check for **ectopic pregnancy**

How is ultrasound used for health issues not related to pregnancy?

Ultrasound is used to create images of the pelvic organs to find or diagnose problems. Some of the ways in which ultrasound may be used include the following:

- Evaluate a mass in the pelvis (such as an ovarian **cyst** or a uterine **fibroid**)
- Look for possible causes of pelvic pain
- Look for causes of abnormal uterine bleeding or other menstrual problems
- Locate an **intrauterine device (IUD)**
- Diagnose reasons for infertility
- Monitor infertility treatments

In addition, ultrasound may be used to assess **mammography** findings that are unclear, help guide breast **biopsy** procedures, and evaluate breast lumps.

How is an ultrasound exam performed?

During a pelvic ultrasound exam, the transducer is either moved across your abdomen (transabdominal ultrasound) or placed in your vagina (transvaginal ultrasound). The type of ultrasound exam you have depends on what types of images your ob-gyn or other health care professional needs and why the exam is being done.

What happens during a transabdominal ultrasound 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 to make images. 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 creates a "window" through which structures underneath the bladder or around it can be seen more clearly.

What happens during a transvaginal ultrasound exam?

You will be asked to change into a hospital gown or undress from the waist down. It is recommended that you empty 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 are the risks of ultrasound exams?

Currently, there is no 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 professionals. Casual use of ultrasound during pregnancy should be avoided.

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.

Biopsy: A minor surgical procedure to remove a small piece of tissue that is then examined under a microscope in a laboratory.

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

Congenital Anomalies: Changes in a body structure or function from what is normally expected that are present from birth.

Cyst: A sac or pouch filled with fluid.

Ectopic Pregnancy: A pregnancy in which the fertilized egg begins to grow in a place other than inside the uterus, usually in one of the fallopian tubes.

Fetus: The stage of prenatal development that starts 8 weeks after fertilization and lasts until the end of pregnancy.

Fibroid: A growth, usually benign, that forms in the muscle of the uterus.

Genetic Disorders: Disorders caused by a change in genes or chromosomes.

Gestational Age: The age of a pregnancy, usually calculated from the number of weeks that have elapsed from the first day of the last normal menstrual period and often using findings from an ultrasound examination performed in the first or second trimester of pregnancy.

Intrauterine Device (IUD): A small device that is inserted and left inside the uterus to prevent pregnancy.

Mammography: An imaging technique in which X-rays of the breast are used to detect breast cancer. The image that is created is called a mammogram.

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

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

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

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

Ultrasound: Sound waves that can be used to examine internal structures or as a treatment for certain conditions.

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

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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