

How to Prepare for Your Ultrasound Exam

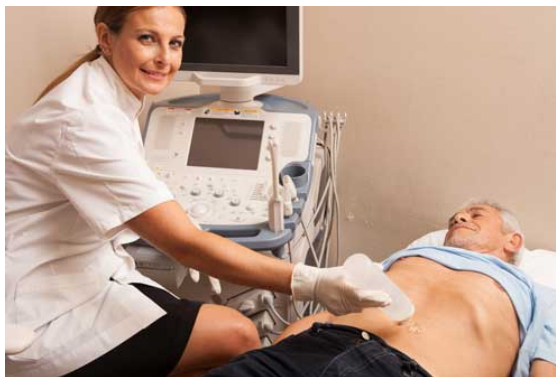
This is a general description of how to prepare for most Ultrasound exams. For information about a specific Ultrasound exam, see the Ultrasound – Tests and Treatments page (<https://www.radiologyinfo.org/en/ultrasound>) .

How should I prepare for my ultrasound exam?

Wear comfortable, loose-fitting clothing. You may need to remove all clothing and jewelry in the area to be examined.

You may need to change into a gown for the procedure.

Preparation for the procedure will depend on the type of exam you will have. For some scans, your doctor may tell you not to eat or drink for up to 12 hours before your exam. This timeframe is lower for babies and young children. For others, the doctor may ask you to drink up to six glasses of water two hours prior to your exam and avoid urinating. This will ensure your bladder is full when the scan begins.



What does the ultrasound equipment look like?

Ultrasound machines consist of a computer console, video monitor and an attached transducer (<http://www.radiologyinfo.org>) . The transducer is a small hand-held device that resembles a microphone. Some exams may use different transducers (with different capabilities) during a single exam. The transducer sends out inaudible, high-frequency sound waves into the body and listens for the returning echoes to produce the image you will see on the video monitor (screen).

The sonographer applies a small amount of gel to the area under examination and places the transducer there. The gel allows sound waves to travel back and forth between the transducer and the area under examination. The ultrasound image is immediately visible on a video monitor. The computer creates the image based on the loudness (amplitude), pitch (frequency), and time it takes for the ultrasound signal to return to the transducer. It also considers what type of body structure and/or tissue the sound is traveling through.

How does ultrasound work?

Ultrasound imaging uses the same principles as the sonar that bats, ships, and fishermen use. When a sound wave strikes an object, it bounces back or echoes. By measuring these echo waves, it is possible to determine how far away the object is as well as its size, shape, and consistency. This includes whether the object is solid or filled with fluid.

Doctors use ultrasound to detect changes in the appearance of organs, tissues, and vessels and to detect abnormal masses, such as tumors.

In an ultrasound exam, a transducer (<http://www.radiologyinfo.org>) both sends the sound waves and records the echoing (returning) waves. When the transducer is pressed against the skin, it sends small pulses of inaudible, high-frequency sound waves into the body. As the sound waves bounce off internal organs, fluids and tissues, the sensitive receiver in the transducer records tiny changes in the sound's pitch and direction. A computer instantly measures these signature waves and displays them as real-time pictures on a monitor. The sonographer typically captures one or more frames of the moving pictures as still images. They

may also save short video loops of the images.

Doppler ultrasound, a special ultrasound technique, measures the direction and speed of blood cells as they move through vessels. The movement of blood cells causes a change in pitch of the reflected sound waves (called the Doppler effect). A computer collects and processes the sounds and creates graphs or color pictures that represent the flow of blood through the blood vessels.

How is the procedure performed?

For most ultrasound exams, you will lie face-up on an exam table that can be tilted or moved. Patients may turn to either side to improve the quality of the images.

The radiologist (a doctor specifically trained to supervise and interpret radiology exams) or sonographer will position you on the exam table. They will apply a water-based gel to the area of the body under examination. The gel will help the transducer make secure contact with the body. It also eliminates air pockets between the transducer and the skin that can block the sound waves from passing into your body. The sonographer places the transducer on the body and moves it back and forth over the area of interest until it captures the desired images.

There is usually no discomfort from pressure as they press the transducer against the area being examined. However, if the area is tender, you may feel pressure or minor pain from the transducer.

Sonographers perform Doppler ultrasound with the same transducer.

Very rarely, young children may need sedation to hold still for the procedure. Parents should ask about this beforehand and be made aware of prior food and drink restrictions that sedation requires.

Once the imaging is complete, the sonographer will wipe off the clear ultrasound gel from your skin. Any portions that remain will dry quickly. The ultrasound gel does not usually stain or discolor clothing.

In some ultrasound exams, the doctor attaches a probe to the transducer and inserts into a body cavity. These exams include:

- **Transesophageal echocardiogram.** The doctor inserts the probe into the esophagus to obtain images of the heart.
- **Transrectal ultrasound.** The doctor or sonographer inserts the probe into a man's rectum to view the prostate.
- **Transvaginal ultrasound.** The doctor or sonographer inserts the probe into a woman's vagina to view the uterus and ovaries.

What will I experience during and after the procedure?

Most ultrasound exams are painless, fast, and easily tolerated.

Ultrasound exams that insert the transducer into a body cavity may produce minimal discomfort.

If the doctor or sonographer performs a Doppler ultrasound exam, you may hear pulse-like sounds that change in pitch as they monitor and measure the blood flow.

Most ultrasound exams take about 30 minutes. More extensive exams may take up to an hour.

When the exam is complete, the sonographer may ask you to dress and wait while the doctor reviews the ultrasound images.

After an ultrasound exam, you should be able to resume your normal activities immediately.

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