



## Ultrasound Exams: An Overview

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### What is Ultrasound?

Ultrasound is defined as sound with a frequency greater than 20,000 Hertz, above the range audible to the human ear. An Ultrasound exam, or sonogram, is a safe and generally non-invasive procedure that utilizes high-frequency sound waves to image an internal body structure. For standard diagnostic ultrasound there are no known harmful effects on humans. Ultrasound imaging uses no ionizing radiation.

### Common Uses:

- **Abdomen**  
Ultrasound can be used to detect gallstones, check the health of the liver, kidneys, pancreas, and spleen, and monitor the success of a kidney transplant.
- **Blood vessels**  
Ultrasound exams can reveal enlargements in vessels, blood clots or narrowing of arteries leading to the brain, which could result in stroke.
- **Pelvis**  
Ultrasound is used image the uterus, ovaries and other structures within the pelvis. It may assist in determining the source of pain or bleeding in the female pelvis.
- **Cancer**  
Ultrasound can locate lumps in organs and tissues, and can often distinguish the difference between fluid-filled cysts and cancerous tumors. It is frequently used to guide a needle biopsy (removal of tissue using a needle instead of surgery), and can be used to help detect prostate cancer and monitor treatment.
- **Ultrasound during pregnancy**  
Ultrasound is regarded as the Gold Standard diagnostic exam for monitoring pregnancy.

### Preparing for your Ultrasound Exam

#### What should I expect BEFORE my Ultrasound Exam?

You will receive specific instructions based on the type of ultrasound you are undergoing. In general, the following guidelines apply.

#### Food and Drink:

If you are having an abdominal Ultrasound, you should have been instructed not to eat or drink anything 8 hours prior to your exam.

For pelvic ultrasounds, you should drink 32 oz of clear liquids one hour before your scheduled appointment.

Other Ultrasound exams such as, thyroid, scrotal, and vascular studies do not require any preparation.

#### When to Arrive:

You should arrive 15 minutes prior to your appointment time.

#### What to Wear:

You should wear comfortable, loose-fitting clothing. You will have the option to change in to a gown.

#### What will I experience DURING my Ultrasound Exam?

You will be greeted by a sonographer - a health care professional specially trained in the use of Ultrasound. The sonographer will apply a gel to the skin over the area being examined. The gel maximizes contact between the transducer (a microphone-like device) and the skin, thereby producing high quality images.

The sonographer then passes the transducer over the targeted area and obtains the desired diagnostic data. Depending on the type of exam, you may have to lie still, change positions, hold your breath, or perform simple breathing exercises.

Transvaginal and transrectal Ultrasound are specialized tests that can provide better images than traditional Ultrasound or other diagnostic methods. For these exams a smaller, specially designed transducers may be inserted into the vagina or rectum.

### **What should I expect AFTER my Ultrasound Exam?**

When finished, the sonographer washes off the gel and verifies that the images are complete.

### **Ultrasound Exam Results**

All ultrasound exams are read by a Mass General radiologist specialty trained in Ultrasound imaging and dedicated to the specific area of interest for your study.

Rapid results are essential not only for your peace-of-mind, but also for your physician to begin planning your treatment immediately, if necessary. After the test has been read, the results are sent to your physician, who will discuss them with you.