Abdominal Ultrasound



Ultrasound imaging of the abdomen uses sound waves to produce pictures of the structures within the upper abdomen. It is used to help diagnose pain or distention (enlargement) and evaluate the kidneys, liver, gallbladder, bile ducts, pancreas, spleen and abdominal aorta. Ultrasound is safe, noninvasive and does not use ionizing radiation.

This procedure requires little to no special preparation. Your doctor will instruct you on how to prepare, including whether you should refrain from eating or drinking beforehand. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown.

What is an abdominal ultrasound?

Ultrasound imaging is a noninvasive medical test that helps physicians diagnose and treat medical conditions. It is safe and painless. It produces pictures of the inside of the body using sound waves. Ultrasound imaging is also called sonography (http://www.radiologyinfo.org) . It uses a small probe called a transducer and gel placed directly on the skin. High-frequency sound waves travel from the probe through the gel into the body. The probe collects the sounds that bounce back. A computer uses those sound waves to create an image. Ultrasound exams do not use radiation (http://www.radiologyinfo.org) (x-rays (http://www.radiologyinfo.org)). Because ultrasound captures images in real-time, it can show the structure and movement of the body's internal organs. The images can also show blood flowing through blood vessels.

An abdominal ultrasound (http://www.radiologyinfo.org) produces a picture of the organs and other structures in the upper abdomen.

A Doppler ultrasound study may be part of an abdominal ultrasound examination.

Doppler ultrasound (http://www.radiologyinfo.org) is a special ultrasound technique that evaluates movement of materials in the body. It allows the doctor to see and evaluate blood flow through arteries and veins in the body.

What are some common uses of the procedure?

Abdominal ultrasound imaging is performed to evaluate the:

- kidneys (http://www.radiologyinfo.org)
- liver (http://www.radiologyinfo.org)
- gallbladder (http://www.radiologyinfo.org)
- bile ducts
- pancreas (http://www.radiologyinfo.org)
- spleen (http://www.radiologyinfo.org)
- abdominal aorta (http://www.radiologyinfo.org) and other blood vessels of the abdomen

Ultrasound is used to help diagnose a variety of conditions, such as:

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- abdominal pain or distention (enlargement)
- abnormal liver function
- enlarged abdominal organ
- *kidney stones (https://www.radiologyinfo.org/en/info/stones-renal)*
- gallstones (https://www.radiologyinfo.org/en/info/gallstones)
- an abdominal aortic aneurysm (AAA) (https://www.radiologyinfo.org/en/info/abdoaneurysm)

Additionally, ultrasound may be used to provide guidance for biopsies.

Doppler ultrasound helps the doctor to see and evaluate:

- blockages to blood flow (such as clots)
- narrowing of vessels
- tumors and congenital vascular malformations
- reduced or absent blood flow to various organs, such as the testes or ovary
- increased blood flow, which may be a sign of infection

Who interprets the results and how do I get them?

A radiologist, a doctor trained to supervise and interpret radiology exams, will analyze the images. The radiologist will send a signed report to the doctor who requested the exam. Your doctor will then share the results with you. In some cases, the radiologist may discuss results with you after the exam.

You may need a follow-up exam. If so, your doctor will explain why. Sometimes a follow-up exam further evaluates a potential issue with more views or a special imaging technique. It may also see if there has been any change in an issue over time. Follow-up exams are often the best way to see if treatment is working or if a problem needs attention.

What are the benefits vs. risks?

Benefits

- Most ultrasound scanning is noninvasive (no needles or injections).
- Occasionally, an ultrasound exam may be temporarily uncomfortable, but it should not be painful.
- Ultrasound is widely available, easy to use, and less expensive than most other imaging methods.
- Ultrasound imaging is extremely safe and does not use radiation.
- Ultrasound scanning gives a clear picture of soft tissues that do not show up well on x-ray images.
- Ultrasound provides real-time imaging. This makes it a good tool for guiding minimally invasive (http://www.radiologyinfo.org) procedures such as needle biopsies (http://www.radiologyinfo.org) and fluid aspiration.

Risks

- Standard diagnostic ultrasound (http://www.radiologyinfo.org) has no known harmful effects on humans.

What are the limitations of abdominal ultrasound?

Ultrasound waves are disrupted by air or gas. Therefore, ultrasound is not an ideal imaging technique for the air-filled bowel or organs obscured by the bowel. Ultrasound is not as useful for imaging air-filled lungs, but it may be used to detect fluid around or

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within the lungs. Similarly, ultrasound cannot penetrate bone, but may be used for imaging bone fractures or for infection surrounding a bone.

Large patients are more difficult to image by ultrasound because greater amounts of tissue weaken the sound waves as they pass deeper into the body and need to return to the transducer for analysis.

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