

# A

Abdominal aorta ultrasound see **Abdominal ultrasound**

Abdominal aortic aneurysm see **Aortic aneurysm**

Abdominal hernia see **Hernia**

Abdominal thrust see **Heimlich maneuver**

## Abdominal ultrasound

### Definition

Ultrasound technology allows doctors to “see” inside a patient without resorting to surgery. A transmitter sends high frequency sound waves into the body, where they bounce off the different tissues and organs to produce a distinctive pattern of echoes. A receiver “hears” the returning echo pattern and forwards it to a computer, which translates the data into an image on a television screen. Because ultrasound can distinguish subtle variations between soft, fluid-filled tissues, it is particularly useful in providing diagnostic images of the abdomen. Ultrasound can also be used in treatment.

### Purpose

The potential medical applications of ultrasound were first recognized in the 1940s as an outgrowth of the sonar technology developed to detect submarines during World War II. The first useful medical images were produced in the early 1950s, and, by 1965, ultrasound quality had improved to the point that it came into general medical use. Improvements in the technology, application, and interpretation of ultrasound continue. Its low cost, versatility, safety and speed have brought it into the top drawer of medical imaging techniques.

While **pelvic ultrasound** is widely known and commonly used for fetal monitoring during **pregnancy**, ultrasound is also routinely used for general abdominal imaging. It has great advantage over x-ray imaging technologies in that it does not damage tissues with ionizing radiation. Ultrasound is also generally far better than plain x rays at distinguishing the subtle variations of soft tissue structures, and can be used in any of several modes, depending on the need at hand.

As an imaging tool, abdominal ultrasound generally is warranted for patients afflicted with: chronic or acute abdominal **pain**; abdominal trauma; an obvious or suspected abdominal mass; symptoms of liver disease, pancreatic disease, **gallstones**, spleen disease, kidney disease and urinary blockage; or symptoms of an abdominal **aortic aneurysm**. Specifically:

- **Abdominal pain.** Whether acute or chronic, pain can signal a serious problem—from organ malfunction or injury to the presence of malignant growths. Ultrasound scanning can help doctors quickly sort through potential causes when presented with general or ambiguous symptoms. All of the major abdominal organs can be studied for signs of disease that appear as changes in size, shape and internal structure.
- **Abdominal trauma.** After a serious accident, such as a car crash or a fall, internal bleeding from injured abdominal organs is often the most serious threat to survival. Neither the injuries nor the bleeding are immediately apparent. Ultrasound is very useful as an initial scan when abdominal trauma is suspected, and it can be used to pinpoint the location, cause, and severity of hemorrhaging. In the case of puncture **wounds**, from a bullet for example, ultrasound can locate the foreign object and provide a preliminary survey of the damage. The easy portability and versatility of ultrasound technology has brought it into common emergency room use, and even into limited ambulance service.
- **Abdominal mass.** Abnormal growths—tumors, cysts, abscesses, scar tissue and accessory organs—can be