

# Ultrasound Scan

## What Is It?

An ultrasound scan, sometimes called a sonogram, is a procedure that uses high-frequency sound waves to create an image of part of the inside of the body. The images can provide valuable information for diagnosing and directing treatment for a variety of diseases and conditions.

## Preparation Before

Most ultrasound exams require no preparation. However, there are a few exceptions:

- For some scans, such as a gallbladder ultrasound, your care provider may ask that you not eat or drink for a certain period before the exam.
- Others, such as a pelvic ultrasound, may require a full bladder. Your doctor will let you know how much water you need to drink before the exam. Do not urinate until the exam is done.
- If you need a sedative to help you relax, this will be given through a small tube into the back of your hand or your arm.
- In some cases, you may also be given an injection of a harmless substance called a contrast agent before the scan, as this can make the images clearer.
- Before your ultrasound begins, you may be asked to do the following:
  - Remove any jewellery from the area being examined.
  - Remove or reposition some or all of your clothing.
  - Change into a gown.
  - You will be asked to lie on an examination table.

## Procedure Advantages

- Painless. Since an ultrasound scan involves no needles, injections or incisions, it is usually an entirely painless procedure.
- During an ultrasound, the patient is not exposed to any ionising radiation, making it far safer than an X-ray or CT scan. Furthermore, with regard to pregnancy, ultrasound scans have been used for decades and have never proven to be dangerous to the patient or the baby.
- Ultrasound scans can reveal a wealth of useful information to doctors. They can capture images of soft tissues that would show up poorly on an X-ray.
- Results are available straight away.
- Patients can watch the whole procedure if they wish.

## Possible Risks

Diagnostic ultrasound is a safe procedure that uses low-power sound waves. There are no known risks. Ultrasound is a valuable tool, but it has limitations. Sound waves don't travel well through air or bone, so ultrasound isn't effective at imaging body parts that have gas in them or are hidden by bone, such as the lungs or head.

Ultrasound may also be unable to see objects that are located very deep in the human body. To view these areas, your consultant may order other imaging tests, such as CT or MRI scans or X-rays.

## What It Involves

A small device called an ultrasound probe is used, which gives off high-frequency sound waves. You cannot hear these sound waves, but when they bounce off different parts of the body, they create “echoes” that are picked up by the probe and turned into a moving image. This image is displayed on a monitor while the scan is carried out.

Most ultrasound scans last between 15 and 45 minutes. They usually take place in a hospital radiology department and are performed either by a doctor, radiographer or sonographer.

Gel is applied to your skin over the area being examined. It helps prevent air pockets, which can block the sound waves that create the images. This safe, water-based gel is easy to remove from skin and if needed, clothing.

A trained technician (sonographer) presses a small, hand-held device (transducer) against the area being studied and moves it as needed to capture the images. The transducer sends sound waves into your body, collects the ones that bounce back and sends them to a computer, which creates the images. Sometimes, ultrasounds are done inside your body. In this case, the transducer is attached to a probe that is inserted into a natural opening in your body.

Examples include:

- **Transoesophageal echocardiogram.** A transducer, inserted into the oesophagus, obtains heart images. It is usually done while under sedation.
- **Transrectal ultrasound.** This test creates images of the prostate by placing a special transducer into the rectum.
- **Transvaginal ultrasound.** A special transducer is gently inserted into the vagina to look at the uterus and ovaries.

Ultrasound is usually painless. However, you may experience mild discomfort as the sonographer guides the transducer over your body, especially if you are required to have a full bladder or inserts it into your body.

A typical ultrasound exam takes from 30 minutes to an hour.