

GENESIS Obstetrics & Gynecology

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“Specializing in 3D/4D Ultrasound Imaging”

Pregnancy Ultrasound

Pregnancy ultrasound is a method of imaging the fetus and the female pelvic organs during pregnancy. The ultrasound machine sends out high-frequency sound waves which bounce off body structures to create a picture.

Alternative Names

Pregnancy sonogram; Obstetric ultrasonography; Obstetric sonogram; Ultrasound - pregnancy

How the test is performed

You will be lying down for the procedure. A clear, water-based conducting gel is applied to the skin over the area being examined to help with the transmission of the sound waves. The ultrasound transducer (a hand-held probe) is then moved over the abdomen and pelvis. This is the conventional transabdominal technique.

How to prepare for the test

Since a full bladder is necessary for improved imaging, you may be asked to drink 2 to 3 glasses of liquid 1 hour before the test. You should not urinate before the examination.

How the test will feel

There may be some discomfort from pressure on the full bladder. The conducting gel may feel slightly warm and wet. You will not feel the ultrasound waves.

What the risks are

There is no documented biologic effect on patients and their fetuses with the use of current ultrasound techniques.

Why the test is performed

There is no definitive rule as to the number of scans a woman should have during her pregnancy. Some physicians will order an ultrasound when an abnormality is suspected on clinical grounds. Dr. Baniyas with you, will determine the most appropriate scanning schedule for you.

Scans may be performed in the first trimester to:

- Confirm a normal intra-uterine pregnancy
- Assess fetal age
- Exclude abnormalities such as ectopic pregnancies or potential for miscarriage
- Assess fetal heart activity
- Determine the presence of multiple pregnancies
- Identify abnormalities of the placenta, uterus, and other pelvic structures

Scans may also be obtained in the second and third trimesters to:

- Assess fetal age, growth, position and sometimes gender
- Identify congenital malformations
- Exclude multiple pregnancies
- Evaluate the placenta, amniotic fluid, and remaining structures of the pelvis

“The LORD is good, a stronghold in the day of trouble and He knoweth them that trust in Him”.

The total number of scans will vary depending on whether a previous scan or blood tests have detected abnormalities that require follow-up assessment.

Source: Evan Mair, M.D., Department of Radiology, Boston Medical Center, Boston, MA. Review provided by VeriMed Healthcare Network.

Diagnosis and assessment of early pregnancy.

The gestational sac can be visualized as early as the [four and a half weeks](#) of gestation and the yolk sac at about five weeks.

Threatened miscarriage

The viability of the fetus can be documented in the presence of [vaginal bleeding](#) in early pregnancy. Fetal heart motion is usually detectable by 7 weeks. If this is observed, the probability of a continued pregnancy is greater than 97 percent. Missed abortion and blighted ovum will usually give the picture of a deformed gestational sac and [absence of fetal poles](#) or heart beat.

Ultrasonography is also indispensable in the early diagnosis of [ectopic pregnancies](#) and [molar pregnancies](#).

Determination of gestational age and assessment of fetal size.

Fetal body measurements reflect the gestational age of the fetus. This is particularly true in early gestation. In patients with uncertain last menstrual periods, such measurements must be made as early as possible in pregnancy to arrive at a correct [dating](#) for the patient.

The following measurements are usually made:

a) **The Crown-Rump Length (CRL)**

This measurement can be made between 7 to 13 weeks and gives very accurate estimation of the gestational age. Dating with the CRL can be within 3-4 days of the last menstrual period.

b) **The Biparietal Diameter (BPD)**

The diameter between the 2 sides of the head. This is measured after 13 weeks. It increases from about 2.4 cm at 13 weeks to about 9.5 cm at term. Different babies of the same weight can have different head size, therefore dating in the later part of pregnancy is generally considered unreliable.

c) **The Femur Length (FL)**

Measures the longest bone in the body and reflects the longitudinal growth of the fetus. Its usefulness is similar to the BPD. It increases from about 1.5 cm at 14 weeks to about 7.8 cm at term.

d) **The Abdominal Circumference (AC)**

The single most important measurement to make in late pregnancy. It reflects more of fetal size and weight rather than age. Serial measurements are useful in monitoring growth of the fetus.

The weight of the fetus at any gestation can also be estimated. Lookup charts are available. For example, a BPD of 9.0 cm and an AC of 30.0 cm will give a weight estimate of roughly 2.85 kg.

Placental Localization

Ultrasonography is very helpful in the diagnosis of [placenta previa](#), and other placental abnormalities.

Multiple pregnancies

Ultrasonography is valuable in determining the number of fetuses and their presentations.

Amniotic Fluid Assessment

Hydramnios and oligohydramnios, excessive or decreased amount of amniotic fluid can be detected by ultrasound.

Fetal malformations

Some structural abnormalities in the fetus can be detected by an ultrasound scan. Ultrasound can also assist in other diagnostic procedures in prenatal diagnosis such as [amniocentesis](#)

Transvaginal Scan

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Ultrasound scanning can be done with the probe placed in the vagina of the patient. This method usually provides better images in patients who are not pregnant or are in the early stages of pregnancy. Fetal cardiac pulsation can be observed as early as 6 weeks of gestation. Vaginal scans are very helpful in the early diagnosis of ectopic pregnancies.

Is ultrasound safe?

It has been over 35 years since ultrasound was first introduced into obstetrics and gynecology. Unlike X-rays, ionizing irradiation is not present and harmful fetal effects associated with such irradiation have not been found to occur. Harmful effects in cells of experimental animals or humans have not been demonstrated in the large amount of **studies** that have so far appeared in the medical literature dealing with the use of diagnostic ultrasound in the clinical setting.

Patient Initials

Date