

Ultrasounds

Ultrasounds (also referred to as **sonograms** or **scans**) use sound waves to produce images. Ultrasounds are commonly used during pregnancy to monitor fetal development.

According to the American College of Obstetricians and Gynecologists, “You should have at least one standard exam during your pregnancy, which usually is performed at 18–22 weeks of pregnancy.” This **anatomy scan** is discussed below. Other ultrasounds may be recommended, depending on your needs.

First Trimester Ultrasounds

First trimester ultrasounds are often used to rule out an **ectopic pregnancy** (a pregnancy outside the uterus), check for a **fetal heartbeat**, and estimate **gestational age** and **due date** based on the size of the developing fetus.

Some sonographers will attempt to guess the sex during late first trimester ultrasounds— however, early predictions based on ultrasounds may not be accurate.

Combined First Trimester Screening and Nuchal Translucency (NT) Scan

This optional ultrasound is performed between 11 weeks and 13 weeks + 6 days. The sonographer measures the thickness of a skin fold found at the back of the fetal neck. Increased thickness of the nuchal fold is a soft marker for **aneuploidy**, or a variation in the number of chromosomes in each cell. The most common aneuploidy is **Trisomy 21, or Down syndrome**.

The nuchal translucency scan is performed as part of the **First Trimester Combined Screening**. This screening test also involves a blood draw. Your blood will be analyzed for **Pregnancy-associated plasma protein-A (PAPP-A)** and **free beta human chorionic gonadotropin (β -hCG)**.

The First Trimester Combined Screening does not diagnose Down syndrome or any other chromosomal variation— it just tells you the approximate likelihood that an aneuploidy is present. You may choose to pursue more invasive diagnostic tests (such as **chorionic villus sampling** or **amniocentesis**) based on the results of this screening.

Some sonographers will attempt to guess the sex during late first trimester or early second trimester ultrasounds. Let your sonographer know whether or not you want to find out the sex of your baby.

For more information, please see our handout on First and Second Trimester Testing.

Anatomy Scan

The **anatomy scan** is performed between 18 and 22 weeks gestation. This is the one ultrasound that is **universally recommended**, and is required for all clients planning a birthing center birth.

Why is the anatomy scan so important? By mid-pregnancy, an ultrasound can provide detailed information about your baby's development. The sonographer will measure and examine the baby's head, trunk, limbs, and internal organs.

Before the exam begins, let your sonographer know whether or not you want to find out the sex of your baby.

The sonographer will also check the position of the **placenta, the length of your cervix,** and the **amniotic fluid** level.

Follow-Up Ultrasounds

Your midwife may recommend additional ultrasounds. More ultrasounds may be needed in order to:

- ✓ Assess the status of a pregnancy following any episodes of vaginal bleeding.
- ✓ Reassess any structures that were difficult to view during an earlier ultrasound.
- ✓ Assess your baby's growth, especially if the baby might be small or large for gestational age.
- ✓ Assess the position of the placenta, especially if the placenta was close to your cervix during an earlier ultrasound.
- ✓ Assess the amniotic fluid level.

Elective Ultrasounds

There are no known risks associated with ultrasounds. However, the American College of Obstetricians and Gynecologists (ACOG) recommends that, "ultrasound exams be performed only for medical reasons by qualified health care professionals."

Many companies now offer 3D or 4D ultrasounds to expectant parents seeking keepsake photos and videos. These ultrasounds use more energy and emit more heat than standard ultrasounds. Technicians performing commercial ultrasounds may not be properly trained.

ACOG and the FDA advise expectant parents to avoid non-medical ultrasounds.

Non-Stress Test and Biophysical Profile (NST / BPP)

A **non-stress test (NST)** and a **biophysical profile (BPP)** are often performed together near the end of pregnancy in order to assess the baby's well being.

A **non-stress test (NST)** records your baby's heart rate, movements, and your uterine contractions (if you are having Braxton hicks or labor contractions). The tests usually lasts 20 – 60 minutes, and you will be asked to press a buzzer every time you feel your baby move.

The goal of this test is to find out whether your baby's heart rate increases in response to movement or contractions.

Your non-stress test result will be **“reactive” (normal)** if your baby's heart rate increases by at least 15 beats per minute above its resting rate in response to movements, for at least 15 seconds, twice during a 20-minute period. This indicates that:

- ✓ Your baby's nervous system is mature enough to respond to stimuli.
- ✓ Your baby is getting enough oxygen through the placenta to respond to stimuli.

If your baby's heart rate does not increase during movements, or if your baby does not move for 90 minutes, your result will be **nonreactive**. This does not necessarily mean that something is wrong, but further testing will be recommended.

A **biophysical profile (BPP)** is sometimes performed near the end of pregnancy in order to assess the baby's well being.

During an NST / BPP, the following data are collected and scored:

Biophysical Attribute	Normal	Abnormal
Breathing	One breathing episode within 30 minutes	No breathing episodes within 30 minutes
Movement	2 or more movements within 30 minutes	Less than 2 movements within 30 minutes
Muscle Tone	One or more episodes of active flexion / extension	Slow or abnormal flexion / extension of limbs
Amniotic Fluid	One or more adequate pockets of fluid	Inadequate pockets of fluid
Heart Rate (Non-Stress Test)	2 or more accelerations in reaction to movement	Inadequate response to movement

This information helps your midwives to determine whether your baby is still happy and healthy inside your uterus. We usually recommend an NST / BPP if there is a concern about your baby's well being, if you are more than 41 weeks pregnant, or if other risk factors are present.