



ANTENATAL TESTING

Antepartum or antenatal testing involves the use of electronic fetal monitoring (EFM) and ultrasound (US) to assess the well-being of your baby.

Who Needs Antenatal Testing?

Antepartum testing can start as early as 24 weeks but usually begins after 32 weeks of pregnancy depending on the mother's physical status. The testing results reflect how well the placenta is functioning and its ability to adequately supply blood and oxygen to your baby. The testing is routinely done for pregnancies at risk for maternal and/or fetal complications. Some of these risks include:

- Any chronic illness in the mother, such as high blood pressure, diabetes, or autoimmune diseases.
- Advanced maternal age (age 35 or older at the time of delivery).
- Problems with previous pregnancies, such as a history of stillbirth or preterm labor or delivery.
- fetal complications, such as too small or too large for gestational age, birth defects, twins, or other multiple gestations.
- Problems in current pregnancy, including pregnancy-induced high blood pressure (preeclampsia), gestational diabetes, too little or too much amniotic fluid (the liquid surrounding the fetus), or problems with the umbilical cord, such as marginal cord insertion or 2 vessel cord.
- Decreased fetal movement.
- Post-date or post-term pregnancy. After 40 weeks of pregnancy, the placenta may no longer be capable of meeting the baby's needs. This can be indicated by the FHR pattern, amniotic fluid status, and fetal movement patterns.



What is Antenatal Testing?

There are quite a few different tests that we can use to assess fetal well-being. However, we are only going to cover the least invasive ones in this handout.

Fetal Kick Counts

Fetal movement should be determined daily after 28 weeks by all pregnant women, regardless of risk status. Fetal movement counting should be done around the same time each day, such as after supper. Simply document how long it takes to feel 10 fetal movements. Call your healthcare provider if there are fewer than 10 movements in a 10-hour period or immediately if there are no movements in any 10-hour period. You should always report significant decreases in fetal activity from the baby's normal pattern. This daily monitoring of FM by all pregnant women is the least expensive and easiest of all antepartum tests to perform.

Doppler Flow Studies

Doppler flow studies examine the blood flow in the umbilical artery and the baby's middle cerebral artery. If this is abnormal, it may mean that the placental is not receiving adequate blood flow to supply oxygen and nutrients for your baby.



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Non-Stress Test (NST)

The NST is performed with an electronic fetal monitor (EFM) that traces the fetal heart rate (FHR) and the presence of any contractions. You will be seated comfortably in a recliner and the EFM is applied to your abdomen. You will have 2 or more (multiple pregnancy) transducers belted on your abdomen, one is to listen to the FHR, and the other is to monitor for contractions. The NST indirectly provides information about fetal status by the observation of FHR accelerations that occur with fetal movement. If a fetus is not receiving adequate oxygen from the placenta, the FHR will not accelerate, but if the oxygen supply is sufficient, accelerations will be noted. The minimum amount of time required for an NST is 30 minutes. During those 30 minutes, there must be two accelerations in the FHR that are 15 beats above the baseline FHR and last for 15 seconds, often called the 15 by 15 rule. Depending upon the conditions, however, it may sometimes take up to 60 to 90 minutes to obtain definitive results.



Usually, a report of normal results for NSTs provides reassurance that the fetus is healthy and should remain so for three to four days, at which time repeat testing will be necessary. A normal NST is reported as being reactive, which means the fetal heart is "reacting" to movement such that the FHR is accelerating 15 beats per minute above the baseline FHR for 15 seconds twice within a 20-minute period of time. A non-reactive NST is one that fails to meet this criterion. For an extremely preterm fetus, a normal NST is reported as being reactive for gestational age, which indicates the FHR demonstrated two accelerations of 10 beats per minute above baseline for 10 seconds over a 20–30 minute period. Typically, the central nervous system is not completely mature until approximately 32 weeks gestational age, and a report of reactive for gestational age takes this into consideration. It is important to remember that a normal result does not guarantee that no problems are present. Although very rare in occurrence, false normal results can be observed.

Biophysical Profile

The biophysical profile (BPP) is performed by an ultrasound exam. The sonographer assesses the fetus for the presence of the following:

- Gross fetal movement, i.e., kicking and moving around
- Fetal tone, i.e., making a fist
- Breathing movements (which the mother can often perceive as hiccoughs)
- Amniotic fluid volume



A score of 0 or 2 points is assigned to each observation with the results of the NST also adding 2 points for a total possible score of 10 points. BPP's should be performed on a weekly basis in high risk pregnancies. In some extremely high risk pregnancies, they may be performed twice a week. A normal BPP report without an NST is 8 points and 10 points with a reactive NST. Six points is suspicious and requires further evaluation with a repeat BPP within 24 hours or prolonged monitoring in a hospital setting. A total of 4 points is not reassuring and requires immediate evaluation by prolonged EFM.

Risks and Precautions

There are no significant risks to the mother or the fetus from the non-stress test (NST), the biophysical profile (BPP), or doppler flow studies. Ultrasound waves utilized in detecting the FHR and for the BPP are painless and safe. They do not employ harmful radiation. There is no evidence that sound waves cause any harm to the mother or the baby.

Aftercare

If the test results are acceptable, the pregnant woman is instructed to continue following her current medical regimen, and return for additional testing on the dates prescribed.

It is extremely important that you come to all of your appointments — every one is important!



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