



FREQUENTLY ASKED QUESTIONS

FAQ098

PREGNANCY

Special Tests for Monitoring Fetal Health

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Why may special tests be needed during pregnancy?

Special testing during pregnancy most often is done when there is an increased risk of pregnancy complications or **stillbirth**. This can occur in the following situations:

- High-risk pregnancy (a woman has had complications in a previous pregnancy or has a pre-existing health condition such as **diabetes mellitus** or heart disease)
- Problems during pregnancy, such as fetal growth problems, **Rh sensitization**, or high blood pressure
- Decreased movement of the **fetus**
- Pregnancy that goes past 42 weeks (**postterm pregnancy**)
- **Multiple pregnancy** with certain complications

When during pregnancy are special tests performed?

Special testing usually is started between 32 weeks and 34 weeks of pregnancy. Testing may be started earlier if problems are particularly serious or there are multiple risk factors.

How often are special tests done?

How often the tests are done depends on the condition that prompted the testing, whether the condition remains stable, and results of the testing. Some tests are repeated weekly. In certain situations, tests may be done twice weekly.

What are the types of special tests?

The tests used to monitor fetal health include fetal movement counts, the nonstress test, biophysical profile, modified biophysical profile, contraction stress test, and **Doppler ultrasound exam** of the umbilical artery.

What are fetal movement counts?

If you have felt fetal movement less often than what you think is normal, your health care professional may ask you to keep track of the fetus's movements. Fetal movement counting (also called "kick counts") is a test that you can do at home. There are different ways kick counts can be done. Your health care professional will tell you how often to do it and when to notify him or her.

What is a nonstress test?

The nonstress test measures the fetal heart rate in response to fetal movement over time. The term "nonstress" means that during the test, nothing is done to place stress on the fetus.

How is the nonstress test performed?

This test may be done in the health care professional's office or in a hospital. The test is done while you are reclining or lying down and usually takes at least 20 minutes. A belt with a sensor that measures the fetal heart rate is placed around your abdomen. The fetal heart rate is recorded by a machine.

What do the results of a nonstress test mean?

If two or more **accelerations** occur within a 20-minute period, the result is considered reactive or "reassuring." A reactive result means that for now, it does not appear that there are any problems. A nonreactive result is one in which not enough accelerations are detected in a 40-minute period. It can mean several things. It may mean that the fetus was asleep during the test. If this happens, the test may last 40 more minutes, or the fetus may be stimulated to move with sound projected over the mother's abdomen. A nonreactive result can occur if the woman has taken certain medications. It also can mean that the fetus is not getting enough **oxygen**.

What is a biophysical profile?

A biophysical profile (BPP) may be done when results of other tests are nonreassuring. It uses a scoring system to evaluate fetal well-being in these five areas:

1. Fetal heart rate
2. Fetal breathing movements
3. Fetal body movements
4. Fetal muscle tone
5. Amount of **amniotic fluid**

Each of the five areas is given a score of 0 or 2 points, for a possible total of 10 points.

How is the biophysical profile performed?

A BPP involves monitoring the fetal heart rate (the same way it is done in a nonstress test) as well as an **ultrasound exam**. During an ultrasound exam, a device called a **transducer** is rolled gently over your abdomen while you are reclining or lying down. The transducer creates sound waves that bounce off of the internal structures of the body. The transducer receives these echoes, which are converted into images displayed on a computer screen for the technician to view.

What do the results of a biophysical profile mean?

A score of 8–10 is reassuring. A score of 6 is equivocal (neither reassuring nor nonreassuring). If you have an equivocal score, depending on how far along you are in your pregnancy, you may have another BPP within the next 12–24 hours, or it may be decided to deliver the baby. A score of 4 or less means that further testing is needed. Sometimes, it means that the baby should be delivered early or right away.

No matter what the score is, not enough amniotic fluid means that more frequent testing should be done or delivery may need to be considered.

What is a modified biophysical profile?

A modified BPP is done for the same reasons that a BPP is done. The modified BPP combines a nonstress test with an amniotic fluid assessment that is performed using ultrasound. It is less cumbersome but can be just as useful as the BPP in predicting fetal well-being.

How is the modified biophysical profile performed?

The fetal heart rate is monitored in the same way it is done for the nonstress test. Ultrasound is used to measure how much amniotic fluid there is in four areas of your **uterus**.

What do the results of a modified biophysical profile mean?

If test results are nonreactive, it could mean that the fetus is having trouble getting enough oxygen. Results of the amniotic fluid measurement give an idea of how well the **placenta** is working. If the amniotic fluid level is low, it could mean that there is a problem with blood flow in the placenta. A full BPP or contraction stress test may be needed to confirm results.

What is a contraction stress test?

The contraction stress test helps your health care professional see how the fetal heart rate reacts when the uterus contracts. The contraction stress test sometimes is used if other test results are positive or unclear.

How is the contraction stress test performed?

In this test, belts with sensors that detect the fetal heart rate and uterine contractions are placed across your abdomen. To make your uterus contract mildly, you may be asked to rub your nipples through your clothing or you may be given **oxytocin**.

What do the results of a contraction stress test mean?

If the fetal heart rate does not decrease after a contraction, the result is normal (negative). A decrease in heart rate after most contractions is a positive result (the results are concerning to the health care professional). Results also can be equivocal (the results are not clear) or unsatisfactory (there were not enough contractions to produce a meaningful result).

What is a Doppler ultrasound exam of the umbilical artery?

Doppler ultrasound is used to check the blood flow in the umbilical artery, a blood vessel located in the **umbilical cord**. Doppler ultrasound is used with other tests when the fetus shows signs of not growing well.

How is the Doppler ultrasound exam performed?

You will be reclining or lying down for this test. A transducer is rolled gently over your abdomen to project sound waves. An image of the artery that is being examined is shown on a computer screen.

What do the results of a Doppler ultrasound exam mean?

A normal test result is one that shows normal blood flow in the umbilical artery. If the test shows problems with the blood flow in the placenta, it can mean that there is a decrease in the amount of oxygen being delivered to the fetus.

Glossary

Accelerations: Increases in the heart rate of a fetus.

Amniotic Fluid: Fluid in the sac that holds the fetus.

Diabetes Mellitus: A condition in which the levels of sugar in the blood are too high.

Doppler Ultrasound Exam: A type of ultrasound in which sound waves can tell how fast an object is moving. Doppler ultrasound can be used to find the heartbeat of a fetus or how fast blood is moving through a vein or artery.

Fetus: The stage of human development beyond 8 completed weeks after fertilization.

Multiple Pregnancy: A pregnancy where there are two or more fetuses.

Oxygen: An element that we breathe in to sustain life.

Oxytocin: A hormone made in the body that can cause contractions of the uterus and release of milk from the breast.

Placenta: An organ that provides nutrients to and takes waste away from the fetus.

Postterm Pregnancy: A pregnancy that extends beyond 42 weeks.

Rh Sensitization: The presence of Rh antibodies in the bloodstream of an Rh-negative person. This happens when an Rh-negative person's blood comes into contact with Rh-positive blood.

Stillbirth: Birth of a dead fetus.

Transducer: A device that sends out sound waves and translates the echoes into electrical signals.

Ultrasound Exam: A test in which sound waves are used to examine inner parts of the body. During pregnancy, ultrasound can be used to check the fetus.

Umbilical Cord: A cord-like structure containing blood vessels. It connects the fetus to the placenta.

Uterus: A muscular organ in the female pelvis. During pregnancy, this organ holds and nourishes the fetus.

If you have further questions, contact your obstetrician–gynecologist.

FAQ098: This information was designed as an educational aid to patients and sets forth current information and opinions related to women's health. It is not intended as a statement of the standard of care, nor does it comprise all proper treatments or methods of care. It is not a substitute for a treating clinician's independent professional judgment. Please check for updates at www.acog.org to ensure accuracy.

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