



Nonstress & Stress Tests During Pregnancy

There are many ways to evaluate the health and well-being of a developing baby (fetus) throughout pregnancy. If a woman has a pregnancy that is at higher risk for complications, certain tests can be done to check the baby. These tests help to see if the baby is receiving enough oxygen and nourishment through the placenta (sometimes called the “afterbirth,” the organ that connects the fetus with the mother). Sometimes mothers are tested to see if they are having contractions. This is usually done during the last 3 months of pregnancy.

Is your pregnancy at high risk?

Your pregnancy may be considered at high risk if:

- You are diabetic, you have high blood pressure, or you have another significant health condition
- Your baby’s growth has significantly slowed or stopped
- Your pregnancy has gone beyond the expected due date

There are many other reasons that your doctor or other medical professional may recommend a nonstress test as well.

Tests to evaluate Fetal Health and Well-Being

Three tests are commonly offered to women in late pregnancy if they have a high-risk pregnancy. They include:

- Nonstress test (NST)
- Contraction stress test (CST)
- Biophysical profile (BPP)

If you have a high-risk pregnancy, talk with your doctor or other medical professional about any prenatal tests you will be given. Testing is also done in low-risk pregnancies if the baby’s activity suddenly decreases. If you notice this occurring, you should call labor and delivery right away.

Nonstress test

A nonstress test (NST) checks the baby’s heart rate in response to its movements. An NST takes about 15-45 minutes. You don’t need to do anything special to prepare for it.

A device that monitors the baby is attached by a belt to your abdomen. Another monitoring device is attached to your abdomen to see if you are having any uterine contractions. Neither device poses any risk to you or the baby. Babies are usually active and as the baby moves, the monitor records the baby’s heart rate in response to its movements. If the baby is healthy, its heart rate will go up when it moves, and will stay steady when it rests, just as ours does. Sometimes, the baby will not move much because he or she could be sleeping or resting. A device that makes a loud buzzing noise may be used to wake up the baby. Often a brief ultrasound is done at the same time to check the amount of amniotic fluid (“bag of waters”).

Contraction stress test

A contraction stress test (CST) measures the effect of contractions (stress) on the baby's heart rate. You do not need to do anything special to prepare for this test.

As with a nonstress test, two monitoring devices are attached to your abdomen. One measures the baby's heart rate and the other records the uterine contractions. Then, a low dose of a medicine called pitocin may be given to you through a vein to cause the uterus to contract. Sometimes stimulation of the nipples may be used to cause uterine contractions.

A monitor records the baby's heart rate as the uterus contracts. If the baby is not receiving enough oxygen, or is under stress, the heart rate may slow down when there is a contraction. If the heart rate stays steady with contractions (or even goes up) that is generally a sign that the baby is not under stress.

Biophysical profile

A biophysical profile (BPP) uses ultrasound to evaluate the baby's health. The BPP looks at the baby's breathing pattern, body movements, muscle tone, and the amount of amniotic fluid ("bag of waters"). Often, a nonstress test is included as part of the BPP. Each feature of the BPP, including the NST if that is done, is given a score of 0 or 2. A total score of 8 or 10 is considered normal. You may have a biophysical profile done weekly towards the end of your pregnancy.

Test results

If one or all of these tests are normal, it is very likely that your baby is healthy. A test may be repeated in a few days to a week, depending on risk factors. If the test results are worrisome, your doctor or other medical professional will talk to you about what to do next. Additional tests may be ordered. In some cases, your doctor or other medical professional may determine that inducing or starting labor and delivering your baby is the safest plan.

Other resources

- Connect to our Web site at kp.org to access health and drug encyclopedias, interactive programs, health classes, and much more. You will also find featured health topics on colds and flu, allergies, asthma and other conditions.
- Contact your local Kaiser Permanente Health Education Center for health information, programs, and other resources.
- Your health and your pregnancy can be seriously affected by violence or abuse. If you are hit, hurt or threatened by a partner or spouse, there is help. Call the National Domestic Violence Hotline at 1-800-799-7233 or connect to ndvh.org

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor.