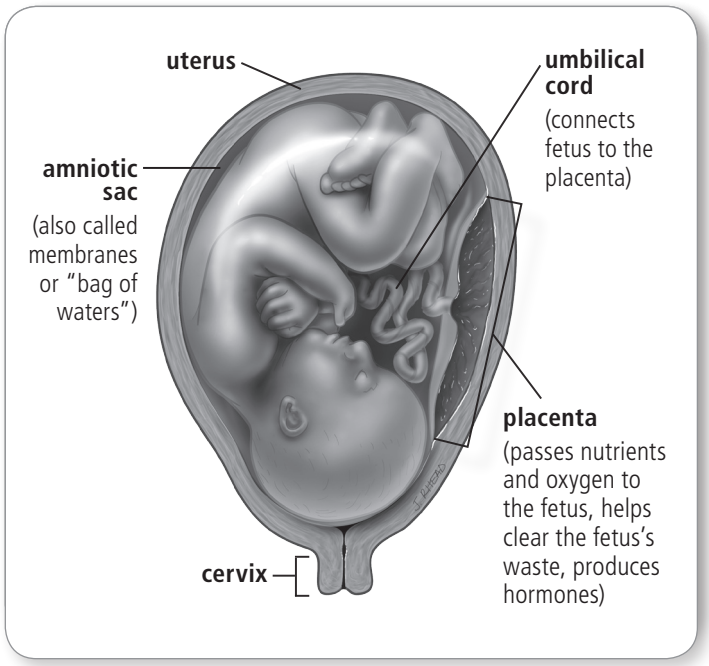
Intermountain® Healthcare

Fetal Testing: *nonstress test, amniotic fluid assessment, and biophysical profile*

Testing and monitoring are a normal part of care during pregnancy. But some pregnancies require extra testing to check the health of the **fetus** (the unborn baby). As part of this, some tests assess the function of the **placenta**, the organ that nourishes the fetus in the **uterus** (womb), and measure the amount of **fluid in the amniotic sac**. See the picture at right.

This handout describes three of these special fetal tests — the nonstress test, amniotic fluid assessment, and biophysical profile. You may have one or more of these tests. Very often, they're done together.



Why do I need special fetal testing?

Special testing allows your doctor or midwife to monitor your pregnancy more closely. It's done in a wide variety of situations — any time the medical team wants more information. Your doctor or midwife will explain why testing is recommended for you. Fetal testing is commonly done in situations such as these:

- **If you have a chronic medical condition** such as diabetes.
- **If you have a pregnancy-related condition** such as preeclampsia.
- **If you had a problem in an earlier pregnancy.** A previous preterm birth or a stillbirth may also warrant additional fetal testing now.
- **When signs or other test findings raise questions.** For example, your baby may be moving less than normal, or may seem to be smaller than expected. A previous ultrasound may have shown that your baby has an abnormality or that there is too much or too little fluid inside the amniotic sac.
- **If you are pregnant with more than one baby.** Multiple gestation pregnancies have a higher chance of problems than other pregnancies.
- **If your pregnancy has lasted longer than 40 weeks.** After 40 weeks of pregnancy, the risk to your baby can increase.
- **If the sac around the fetus has ruptured (premature rupture of membranes, or PPROM).** PPROM carries risks to the fetus, and testing can help detect a problem.

What do the tests tell us?

Different tests give different information. (See the back of this handout for information on three common tests.) Generally, these tests give information about your baby's health, which is then used to guide decisions about your care and the baby's delivery. Note that unlike other ultrasound tests, these tests aren't used to diagnose abnormalities.

When the tests suggest that the baby is doing well, the findings are called "reassuring." Reassuring findings are common, and usually mean that your care and pregnancy can continue as before. At other times, the testing suggests that your care should change or your baby should be delivered. Occasionally, further testing is recommended.

The medical staff doing the testing will share any findings with you and your doctor or midwife.

How do I prepare for fetal testing?

Fetal testing is done at the hospital or clinic and lasts 30 to 90 minutes or so. Here's what to do before you arrive:

- Wear comfortable clothing — preferably a 2-piece outfit (a shirt and pants or a skirt). This makes it easy for your medical team to access your abdomen.
- Eat, drink, and urinate as you would normally. (You don't need to fast or have a full bladder for these tests.)

Note that none of the tests described here requires a needle stick — there are no IVs, injections, or blood draws.

About the NONSTRESS TEST

What? This test measures your baby's heart rate and records any contractions of your uterus.

Why? This test helps gauge your baby's well being. Normally, a baby's heart will beat faster (**accelerate**) when he moves. This suggests that the placenta is delivering enough oxygen to your baby's brain and heart and that he is doing well.

How? You'll lie down or recline, and two straps with monitors will be placed around your abdomen. One monitor measures your baby's heart rate and the other picks up any contractions. The data is recorded by a machine.

Good to know:

- If your baby has 2 heart rate accelerations within 20 minutes, this reassuring finding is called "reactive."
- If your baby isn't moving much, he may be asleep. In this case, you may be asked to drink or eat something cold or sweet. Or, the team may use a noisemaker to try to wake him up.
- If you stop hearing your baby's heartbeat during the test, it's because he has moved away from the monitor.
- This test is completely safe for your baby. Your baby may startle if a noisemaker is used, but that won't hurt him.

About the AMNIOTIC FLUID ASSESSMENT

What? This test estimates the amount of fluid surrounding your baby. Amniotic fluid cushions the baby and helps protect the umbilical cord from too much squeezing. Most of the fluid is sterile (clean) urine from the baby.

Why? Measuring the fluid around the baby helps your medical team gauge how well the placenta is working. If there is too little fluid, it could be because the placenta isn't working well, and the baby's body is compensating. More blood is being directed to the baby's brain, and less is going to the kidneys and other organs. As a result, the kidneys are producing less urine, so there is less fluid.

How? This test relies on ultrasound, a technology that uses sound waves to make an image of your baby. The nurse or medical technician will have you lie down on your back and will move the ultrasound transducer over your abdomen. You'll be able to see your baby on the monitor as the nurse or technician carefully measures the pockets of fluid that surround the baby. When all areas have been measured, the measurements are added up to give your baby a score called an **amniotic fluid index**, or **AFI**.

Good to know:

- It's normal for the amount of fluid to decrease toward the end of the pregnancy. Your medical team will compare the AFI score to established guidelines. In most situations, an AFI between about 10 cm and 26 cm is reassuring.
- If your amniotic sac has broken, a lower volume of fluid is expected.
- If you are carrying twins or other multiples, the amniotic fluid will be measured differently.

About the BIOPHYSICAL PROFILE (BPP)

What? This test combines several assessments into a single score that indicates your baby's well being.

Why? The BPP score may give your medical team a more comprehensive view of your baby's health.

How? This test uses the same technology and techniques as the nonstress test and the amniotic fluid assessment. Points are assigned in five areas, as indicated below:

- Nonstress tests (2 points for a reactive result)
- Amniotic fluid assessment (2 points for adequate fluid)
- Fetal muscle tone assessment (2 points for a clenched hand or an extension of the arm or leg)
- Fetal movements (2 points for 3 movements in 30 minutes)
- Fetal breathing movements (2 points for hiccups or continuous breathing for 30 seconds — note that here, "breathing" means your baby is exercising her breathing muscles by drawing amniotic fluid (not air) into her lungs)

Good to know:

- A profile score of 8 to 10 points is considered reassuring.

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