
Bilirubin (Amniotic Fluid)

Does this test have other names?

Amniotic fluid bilirubin optical density, OD

What is this test?

This test is done to see how well your baby is developing inside you. The liquid that surrounds the baby inside your womb is called amniotic fluid. Healthcare providers check the fluid for a pigment called bilirubin to see whether your baby has a blood type that is incompatible with yours. When this happens, it may cause the baby to develop severe anemia or other problems.

Why do I need this test?

If your baby has red blood cell proteins that you don't have, your body may later mistake the baby for an intruder and attack it through your immune system. This only happens to mothers who are Rh-negative and carry babies who are Rh-positive. This is why experts recommend that you get tested on your first prenatal visit, or even earlier, to find out if you are Rh-negative. If you find out that your and your baby's blood types are not compatible, you can get treatment that will protect your baby.

You may already know whether you have blood type A, B, O, or AB. If you have had a blood type test, you might also know if you are Rh-positive or Rh-negative. This tells you whether you have a certain type of protein (antigen) called Rh factor on the surface of your red blood cells. If your red blood cells don't have this protein, you are Rh-negative. If they do, you are Rh-positive.

Your healthcare provider will test your blood to see whether you are Rh-negative. If your baby is Rh-positive or has other red cell proteins that you don't have, your body may make antibodies against your baby's blood. Your antibodies can cause some of your baby's red blood cells to break down. The blood cells contain bilirubin. This can lead to serious blood problems in your developing baby. When this happens, the bilirubin levels in the fluid surrounding the baby go up. Testing the fluid for bilirubin levels will show whether the baby has lost too many red blood cells. This way, healthcare providers can start treatment to help your baby.

Your healthcare providers may suggest this test if:

- You are Rh-negative
- You were exposed to red blood cell proteins you don't have through an earlier delivery, miscarriage, or blood transfusion
- Blood tests show that you have increasing levels of antibodies to Rh factor in your blood

Testing for bilirubin may be done after 25 weeks of pregnancy. If the lab finds evidence that your baby has an abnormal breakdown of red blood cells, healthcare providers may repeat this test as often as every 14 days.

What other tests might I have along with this test?

You may have a blood test to measure your Rh antibody levels. Before doing the amniocentesis, healthcare providers may do an ultrasound to check the location of your baby. Ultrasound is a type of imaging study that uses sound waves. After 30 weeks, a healthcare provider may also check your amniotic fluid to find out how mature your baby's lungs are. This test is called an L/S ratio.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Bilirubin is a pigment, so it can change the color of amniotic fluid, making it amber or yellow. The most common way bilirubin is measured in amniotic fluid is by finding its optical density (OD).

- A level of 0.28 OD to 0.46 OD at 28 to 31 weeks is considered low. This means your baby likely does not have an abnormal red blood cell breakdown or may have only a very mild anemia.
- A level of 0.47 OD to 0.90 OD means your baby may have moderate red cell disease. If so, the baby will likely need a blood transfusion in the womb. Your healthcare provider may also recommend an early delivery if your pregnancy has reached 32 or 33 weeks.
- A level of 0.91 OD to 1.0 OD means your baby is at risk for severe anemia from the breakdown of red blood cells. Healthcare providers call this hemolytic anemia. Your baby may need a blood transfusion in the womb. Your healthcare provider may also recommend an early delivery at 32 to 33 weeks.
- A level of less than 0.04 OD toward the end of your pregnancy means your baby is reaching maturity and is not in danger of this type of anemia.

How is this test done?

This test removes a tiny amount of the fluid in your womb for testing. The procedure to remove the fluid is known as amniocentesis. The test may be done at the hospital or at your healthcare provider's office. A healthcare provider will first rub or inject a numbing medicine into your belly. Then they will then place a long, very thin needle into your womb and take out about 5 to 10 milliliters of fluid (about 1 to 2 teaspoons). Your body will replace this fluid in a few hours. After amniocentesis, your healthcare provider may ask you not to have sex or exercise for the rest of the day. Otherwise you may return to all your normal activities.

Does this test pose any risks?

Amniocentesis is a safe procedure. But it carries a small risk of injury to the baby, rupture of membranes, miscarriage, bleeding, infection, or leaking of amniotic fluid. You should discuss these risks with your healthcare provider. You may feel a stinging sensation when the needle goes in. You may also feel some pressure or discomfort as the fluid is withdrawn. Afterward, you may have some mild cramping. Having amniocentesis may increase your risk of developing antibodies during a future pregnancy. To reduce this risk, your healthcare provider may give you an injection of a medicine called Rho (D) immune globulin (RhoGAM).

What might affect my test results?

Hemolytic anemia from the breakdown of red blood cells is the most common cause of abnormal test results. Other types of fetal problems or diseases that destroy red blood cells in the womb may lead to abnormal results too. If you have hepatitis or a sickle cell crisis while pregnant, this may also affect the results.

Your test results may be affected if you have taken any steroid medicines. Other things that can affect the results include:

- Blood in the fluid sample
- Stool from the baby in the fluid sample
- Exposure of the fluid sample to light
- The baby's blood plasma is too acidic (fetal acidosis)

How do I get ready for this test?

If you are having an ultrasound before the amniocentesis, you should drink fluids 1 hour before and arrive for the test with a full bladder if your pregnancy is 20 weeks or less. If you are 21 weeks or beyond you don't need to drink extra fluids and you can urinate before the test. Talk with your healthcare provider about any specific instructions you need to follow. No other preparations are needed.