

Lecithin-Sphingomyelin Ratio (Amniotic Fluid)



Does this test have other names?

L/S ratio

What is this test?

This test measures the amount of 2 substances that are found in the amniotic fluid during pregnancy. The 2 substances are called lecithin and sphingomyelin. They are surfactants. These are chemicals made by the lungs that help them work correctly. Without surfactants, the small air sacs in your lungs (alveoli) would collapse. This would prevent oxygen from entering the bloodstream.

In the last 3 months of pregnancy, your baby's lung surfactants can freely pass into the amniotic fluid. Once the surfactant is in the amniotic fluid, your healthcare provider can measure it.

In a normal pregnancy, the amount of lecithin in the amniotic fluid continues to rise. But the amount of sphingomyelin stays about the same. Your healthcare provider will compare the amount of each surfactant. This way, your provider can find out how mature your baby's lungs are. The more lecithin there is compared with the amount of sphingomyelin, the more likely your baby's lungs are mature.

Why do I need this test?

You might need this test if you're pregnant and expected to deliver before 39 weeks. Or you may need this test if your healthcare provider doesn't know exactly how many weeks pregnant you are. You likely won't have this test if your baby may be born at less than 32 weeks. At that point, your baby's lungs will be immature. You won't need a test to show this.

In a baby growing in the uterus, the lungs are the most important factor in finding out if a baby is ready for life outside the uterus. Many healthcare providers use lab tests to predict how mature the baby's lungs are before birth.

You may be at risk for early delivery if you have any of these conditions:

- Gestational diabetes
- High blood pressure in pregnancy
- Your water breaks early (premature rupture of amniotic membranes)
- The placenta can't fully support the baby growing in the uterus (placental insufficiency)
- Rh disease (erythroblastosis)

What other tests might I have along with this test?

You may have this test as part of amniocentesis. In this procedure, your healthcare provider collects amniotic fluid to measure several other substances.

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.

Test results are given as a ratio of lecithin to sphingomyelin. The range of results are:

- A ratio of less than 1.5:1. This means that your baby's lungs are immature. If born now, your baby may have breathing problems.
- A ratio between 1.5:1 and 1.9:1. This means that your baby may be at risk for immature lungs and breathing problems.
- A ratio of more than 2:1. This means that your baby has mature lungs and is ready for life outside the uterus.

In some cases, your healthcare provider may want to see a different result. If you have diabetes or kidney disease, for instance, your provider may want the value to be greater than 3.5:1. This is to make sure that your baby's lungs are mature.

How is this test done?

This test is done with a sample of amniotic fluid. Amniotic fluid can be collected in 2 ways:

- **Amniocentesis.** Your healthcare provider will insert a long needle through your belly (abdomen) and into your uterus to collect the sample.
- **Direct collection from vaginal fluid.** If your water breaks, your provider can collect amniotic fluid from your vagina.

Does this test pose any risks?

If amniocentesis is done, the risks can include:

- Leaking of amniotic fluid. Sometimes this can lead to infection, which can lead to miscarriage early in pregnancy, or preterm labor and preterm birth later in pregnancy.
- Injury to the baby. This can happen if the needle touches the baby.
- Leaking of blood from the placenta into your own bloodstream. This can cause problems for later pregnancies.

What might affect my test results?

Many factors can affect your test results. These include:

- Fetal or maternal blood in the amniotic fluid
- Abnormally high volumes of amniotic fluid, which may give false-low test values
- Fetal meconium (stool). This is when the baby has a bowel movement in the uterus.

How do I get ready for this test?

You don't need to get ready for this test. If your water breaks early, it's important to tell your healthcare provider about the amount and color of the fluid. Tell them if it's clear, cloudy, or tinted brown, pink, or red.

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