

Second trimester screening (STS), also called quad screen or triple screen, is a test that can tell the chances that a pregnancy has [Down syndrome](#) (trisomy 21), [trisomy 18](#), and [open neural tube defects \(ONTDs\)](#). STS is generally done between 15 and 22 weeks of the pregnancy, and consists of a blood draw taken from mom. The triple screen measures three hormones and proteins that are in mom's blood that are coming from the pregnancy: human chorionic gonadotropin (hCG), unconjugated estriol (uE3), and alpha-fetoprotein (AFP).

- Unconjugated estriol (uE3): uE3 is made by both the baby's liver and the placenta. Levels of this hormone rise throughout the pregnancy. Babies with [Down syndrome](#) or [trisomy 18](#) tend to have lower levels of uE3.
- Human chorionic gonadotropin (hCG): hCG is hormone that is also produced by the placenta and crosses over into mom's blood stream. hCG tends to be higher in pregnancies with [Down syndrome](#) and lower in pregnancies with [trisomy 18](#).
- Alpha-fetoprotein (AFP): AFP is a protein produced in the baby's liver during the second trimester of pregnancy. The levels of AFP generally increase the further into the pregnancy you are. AFP levels tend to be higher when the baby has an [open neural tube defect \(ONTD\)](#), such as spina bifida. With [ONTDs](#), there is an opening in the skin and AFP has another 'escape route' out. AFP levels tend to be lower in pregnancies that have [Down syndrome](#) or [trisomy 18](#).

The quad screen analyzes the three previous substances, as well as inhibin-A.

- Inhibin-A: Inhibin-A comes from the placenta. Levels of this hormone in mom's blood remain relatively constant through weeks 15-18 of the pregnancy. Pregnancies with [Down syndrome](#) tend to have higher than average levels of inhibin-A, while pregnancies with [trisomy 18](#) tend to have lower levels of inhibin-A.

The lab uses information from the blood draw and about the mom (age, weight, ethnicity, etc) to calculate a risk number. The results will be broken down by each condition that was screened for. For example, a second trimester screen result may say that the chance for [Down syndrome](#) is 1 in 5,000, the chance for [trisomy 18](#) is 1 in 10,000, and the chance for [ONTDs](#) is 1 in 3,000. This means that if there were 5,000 women that had the exact same test result, only 1 would have a child with [Down syndrome](#). Likewise, if there were 10,000 women with the exact same test result, only 1 would have a child with [trisomy 18](#). And if there were 3,000 women with the exact same test results, only 1 would have a child with an [ONTD](#).

A low-risk, or negative, STS means the chances are reduced, but this test does not rule out any medical conditions. Similarly, a STS result that shows an increased risk does not mean

that the pregnancy has that condition. If your results show an elevated risk, you may be offered further testing, such as a [diagnostic prenatal test](#). It's important to remember that most people who have a 'positive' or 'high-risk' STS will go on to have healthy babies.

People choose either to do or not to do prenatal genetic screening for many reasons. It is important to remember that this testing is voluntary and is not required.

YOUR RESULTS ARE HIGH-RISK. NOW WHAT?

If you had a STS done with your primary OB-GYN, they may refer you to a high-risk pregnancy doctor called a perinatologist. You may also be referred to meet with a genetic counselor. These visits are designed to gather more information, but also to make sure you have a clear understanding of everything that is going on. It is also important during these visits to talk about the risks, benefits, and limitations of different options for further testing, including [cell-free DNA](#) or [amniocentesis](#). The choice of whether or not to undergo further testing is yours, and further testing is always voluntary.

YOUR RESULTS ARE LOW-RISK. NOW WHAT?

A low-risk test result means the chance that the pregnancy has the conditions that were screened for is reduced, but not eliminated. Depending on the lab, between 75-85% of pregnancies that have [Down syndrome](#) and [trisomy 18](#) will have a positive STS, which means that approximately 15-25% will have low-risk STS results. The chance that a pregnancy that does not have [Down syndrome](#) or [trisomy 18](#) will have a high-risk test result, or a false positive, is usually between 5-8% (depending on the lab).

How do I decide whether to get STS or not?

If you're on the fence about whether or not to pursue STS, it may be helpful to consider the following:

- If the STS shows a high risk for a condition, would you pursue additional testing, such as [amniocentesis](#)?
 - If not, would you be ok waiting until the baby is born to know for sure if they are

affected?

- Would you want this kind of information to be better prepared?
- Would you consider doing anything differently if you knew a pregnancy was affected with one of these conditions, such as placing the baby up for [adoption](#) or [not continuing the pregnancy](#)?
- Does more information with the possibility of uncertainty make you nervous or anxious?

It is important to talk with your medical provider or a genetic counselor if you have further questions or concerns.

Click [here](#) to learn more about scheduling a genetic counseling appointment for pregnancy-related questions.

Related Articles

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- [First Trimester Screening \(FTS\)](#)
First trimester screening (FTS) is a test that can give more information on the chances that a pregnancy has Down syndrome (trisomy 21) and trisomy 18 (some labs also offer screening for trisomy 13). FTS is generally performed between 11 and 14 weeks of the pregnancy, and is made up...
- [Sequential Screen](#)
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- [Cell-free DNA Screening](#)
Cell-free DNA (cfDNA) is a screening test that can be performed any time after 10 weeks of pregnancy that screens for common chromosome conditions (Down syndrome, trisomy 18, and trisomy 13), as well as sex chromosomes (XX and XY), which can also incidentally tell the sex of the baby. cfDNA...
- [Carrier Screening](#)

While most screening tests we talk about during pregnancy are designed to give us more information about the baby, genetic carrier screening is a test that gives us information about mom and dad. As you may recall from Genetics 101, we have two copies of most genes: one we get...