

Understanding the Triple Test

What is the Triple Test?

The Triple Test is a blood test performed during pregnancy to help you and your physician learn more about your developing baby. Its purpose is to SCREEN for possible neural tube defects, Down syndrome and Trisomy 18 in the developing baby. The laboratory will measure three substances in your blood: alpha-fetoprotein (AFP), human chorionic gonadotropin (hCG) and estriol.

AFP is a substance made by the baby that enters the amniotic fluid (the bag of water surrounding the baby) and the mother's bloodstream. A small amount of AFP is normally found in the amniotic fluid and the mother's blood. When the amount is high, it is a signal to your physician to look further for the possibility of a neural tube defect.

Estriol and hCG come from the developing baby and placenta and can be measured in the mother's blood. A woman who is carrying a baby with Down syndrome may have lower blood levels of AFP and estriol and higher blood levels of hCG than women with unaffected babies. A woman who is carrying a baby with Trisomy 18 may have lower blood levels of AFP, estriol and hCG than women with unaffected babies. The AFP, estriol and hCG values are factored together with information about you (your age, gestational age, weight, race, and diabetic status) and risks for Down syndrome and Trisomy 18 are provided

It is very important to remember that this is a SCREENING test and will not tell for certain that the baby has a problem.

Why should someone consider having a Triple Test?

The Triple Test has been available to pregnant women for many years now and can provide you and your physician with the important information about your

pregnancy. MSAFP (Maternal serum AFP) may lead to the detection of up to 85% of open neural tube defects when used in conjunction with diagnostic procedures such as ultrasound and amniocentesis. Abnormal Triple Test results followed by ultrasound and amniocentesis may lead to the detection of 60 to 70% of Down syndrome pregnancies and many Trisomy 18 pregnancies. In addition to providing information about potential neural tube defects, Down syndrome and Trisomy 18 the Triple Test may provide information that could help to identify twins, find certain other abnormalities that may be present and alert your physician to increased risks for other pregnancy complications.

A normal Triple Test is a SCREENING test and does not guarantee that you will have a healthy baby. The test is simply not able to detect every pregnancy with a neural tube defect, Down syndrome or Trisomy 18. Thus, some women with a normal Triple Test result may still have a baby with a neural tube defect, Down syndrome or Trisomy 18.

Who should have the Triple Test?

Triple Test screening may be offered to all pregnant women, regardless of their maternal age or family history. In most cases, the Triple Test provides reassurance that the baby is developing normally. It is important for you to understand the benefits and the limitations of the Triple Test. Discuss any questions or concerns with your physician.

When do I get the Triple Test?

The Triple Test can be performed any time between 15 and 21.9 weeks after the first day of your last menstrual period. The highest detection rate for open neural defect is 16 to 18 weeks.

The results of the test, with a full explanation, are generally available to your physician within 48 to 96 hours.

What is a Neural Tube Defect?

The neural tube is part of the unborn baby that develops into the spine and brain. In approximately one in every 500 developing babies, there is a defect in the development of the neural tube, resulting in either spina bifida or anencephaly. Spina bifida means, "open spine". Children born with open spine require surgery to close the opening. They also may have various medical problems, such as trouble with bowel and bladder control, walking and learning. The degree of disability varies from one child to the next depending on the size and location of the opening. Anencephaly, a more severe abnormality involving incomplete development of the brain and skull, usually results in death before or shortly after birth.

Am I at risk for having a baby with a Neural Tube Defect?

Any one can have a baby with neural tube defect. If someone in your family was born with a neural tube defect, you need to discuss this with your physician, since your baby has a greater risk of a neural tube defect. If you have no family history, then your risk is no greater than the general population risk. However, you should be aware that most babies with neural tube defects are born to parents with no family history to such problems.

What is Down Syndrome?

Down syndrome is a disorder caused by an extra chromosome, a structure that contains genetic material that determines physical and mental characteristics. Children with Down syndrome have abnormalities that may include mental retardation, heart defects and other health problems.

What is Trisomy 18?

Trisomy 18 is another disorder caused by an extra chromosome. Children with Trisomy 18 also have mental retardation, heart defects and other health problems but are more severely affected and generally die in early childhood. Trisomy 18 is much less common than Down syndrome.

Am I at risk for having a baby with Down Syndrome or Trisomy 18?

As with neural tube defects, anyone can have a child with Down syndrome or Trisomy 18. The chances of having a baby with Down syndrome or Trisomy 18 depend on your age. As a woman gets older, her chances increase. In general, a woman 35 years old or older is offered prenatal testing (amniocentesis or chorionic villus sampling) based on her age alone.

What if my result is screen positive for Down Syndrome or Trisomy 18?

Low MSAFP and estriol combine with high hCG concentrations may be found in pregnancies with Down syndrome. Low levels of MSAFP, estriol and hCG are often found in pregnancies with Trisomy 18. These abnormal Triple Test results also may be due to a pregnancy that is less far along than what was thought previously. Following an abnormal result, some physicians may recommend an ultrasound to verify the baby's age or amniocentesis to study the baby's chromosomes.

What if my MSAFP result is elevated?

An elevated MSAFP result does not necessarily indicate that the baby has a neural tube defect. Since the levels of MSAFP depend, among other factors, on the age of the developing fetus, a test result may appear to be high, but may not be if the baby's age has been miscalculated. There are also other possible causes, including twin pregnancy, vaginal bleeding and the presence of less common birth defects. Occasionally, MSAFP results are elevated for no apparent reason.

What does a negative screen mean?

A negative screen means that your baby probably does not have a neural tube defect, Down syndrome or Trisomy 18. Further testing is not required. A negative screen however, does not guarantee that your baby will not have some form of birth defect.