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Maternal Fetal Screening

Alpha-fetoprotein Triple Screening

What is AFP?

AFP (alpha-fetoprotein) is a substance (protein) that the fetus produces during pregnancy that circulates through the fetus and is necessary for normal growth and development. A small amount of AFP normally crosses the placenta and enters the blood stream. Since adults do not normally produce AFP, the amount of AFP in the blood can tell us about the health of your fetus.

What is a Neural Tube Defect?

Very early in the pregnancy, the fetus forms a structure called the neural tube. This structure develops into the brain and spinal cord. Occasionally, the development of the neural tube can be interrupted, leading to a “neural tube defect”. A neural tube defect can prevent the brain and/or spinal cord from developing fully. Spina bifida and anencephaly are conditions that result from neural tube defects. The handicaps due to these conditions range from moderate to severe.

What is Down Syndrome?

Down syndrome is a chromosome abnormality. Chromosomes contain the inherited information that instructs our bodies how to grow and develop. The correct number of chromosomes in each cell needed for normal human development is 46. Individuals with Down Syndrome inherit one too many chromosomes. The extra number 21 chromosome is why you will sometimes hear Down syndrome called “trisomy 21”.



What if I am over age 35?

The risk of Down syndrome and certain other chromosomal abnormalities (including the fetal trisomy 18 and 13) increases as a woman gets older. If you will be 35 or older when the baby is born, ask your doctor about tests that can ensure detection of chromosome abnormalities – amniocentesis, early amniocentesis, or chorionic villus sampling (CVS). All of these tests are available through Eastern Virginia Medical School.

What is AFP-Triple Screening?

Very high or low amounts of AFP in the mother's circulation have been associated with specific fetal abnormalities. If two other substances are measured along with AFP, the detection rate of the abnormalities is increased. The AFP-Triple Screen test measures the amount of three substances (AFP, estriol, and human chorionic gonadotropin) in the blood of pregnant women to detect pregnancies that have a higher risk for fetal abnormalities, as well as Trisomy 21 and Trisomy 18.

How is AFP-Triple Screening Performed?

The AFP-Triple Screen test is designed to help identify women whose pregnancies are at risk for birth defects or later pregnancy complications. Your doctor will receive important information to help better care for your pregnancy. AFP-Triple Screening identifies 85-90% of open neural tube defects (such as spina bifida or anencephaly) and approximately 60% of Down syndrome pregnancies.

What if my AFP-Triple Screen is normal?

The vast majority of patients have a normal (negative) AFP-Triple Screen test. If your results fall in the normal range, your doctor will receive a written report in one week. Because the AFP-Triple Screen is a screening test; a normal test result cannot guarantee a normal baby or pregnancy. However, a normal test result can reassure you. It means the chance of having a child with a neural tube defect or Down syndrome is not increased.

What if my AFP-Triple Screen is not normal?

In the event of an abnormal (positive) AFP-Triple Screen, your doctor will be notified immediately and will inform you. **A positive test does not necessarily mean that your baby will have a birth defect or other problem.** It will prompt your doctor and others to look more closely at the pregnancy.

The most common cause for you to have a positive AFP-Triple Screen with a high AFP is that your pregnancy is farther along than you thought or that you are carrying more than one fetus (twins). If an ultrasound (sonogram) has not already been performed, your doctor may order one to determine what might be the cause of the AFP elevation. If an abnormality such as a neural tube defect is identified with ultrasound, amniocentesis may be offered.

The most common reason for you to have a positive AFP-Triple Screen test with a low AFP is that your pregnancy is not as far along as you thought. Again, an ultrasound might be suggested and in some cases, an amniocentesis might be offered to rule out Down syndrome.

What is the AFP-Quad Screen?

Recently some laboratories have begun offering and publicizing a “new” test which might be able to identify a Down syndrome pregnancy more easily. The test is currently being evaluated locally to test its utility. Although the test is now available, you may be charged for it if your insurer declines payment.

Eastern Virginia Medical School

Eastern Virginia Medical School is the referral center in Hampton Roads for Specialized services in obstetrics and gynecology and clinical genetics.

Eastern Virginia Medical School’s laboratories provide the highest quality of patient care. These laboratories are fully licensed, and are headed by board-certified physicians and scientists.

The Division of Maternal-Fetal Medicine at EVMS provides the region’s largest and most comprehensive physician group trained in the diagnosis and management of high risk pregnancies. The division’s director of prenatal diagnosis and reproductive genetics is the only obstetric geneticist in Hampton Roads. Patients referred to the Division of Maternal-Fetal Medicine receive complete genetic counseling and support from the program’s highly qualified genetic counselors and physicians.