

AFP Testing

Introduction

Every pregnant woman hopes that her baby will be healthy at birth. It is helpful for your doctor to know as much as possible about the health of your developing baby early in pregnancy. The AFP (alpha-fetoprotein) screening test is helpful in identifying high risk pregnancies and some types of birth defects. The AFP test is done by taking a sample of blood from the mother's arm when a woman is between 16 and 18 weeks pregnant. This testing is optional for each patient.

What is AFP Testing?

AFP (alpha-fetoprotein) is a protein which is made by all unborn babies. AFP can be measured in the mother's blood. When there is too much or too little AFP in the mother's blood, it is a signal to the doctor to check the pregnancy more carefully. The AFP screening test identifies women who may be further along, or not as far along, in their pregnancy as they thought. It can also pick up twins and help to identify women who may be at risk of having a premature delivery or a low birth weight baby. The test can also identify women who are carrying a baby with a neural tube defect, or other severe birth defects such as a kidney or abdominal wall defect.

What are Neural Tube Defects?

Neural tube defects are quite rare. Out of 1,000 pregnant women, only one or two will have a baby born with a neural tube defect. Neural tube defects are birth defects in which the brain or part of the spinal cord does not form normally, and may not be covered with skin or bone. In the first weeks of pregnancy, when the developing baby is less than one inch long, the brain and spinal cord begin to form. They form from a structure along the back of the developing baby called the neural tube. The top of the tube develops into the brain; the rest of the tube becomes the spinal cord. Neural tube defects occur when the neural tube does not close properly to form the brain or spinal cord. The exact causes of neural tube defects are unknown, but heredity plays a part.

The two major types of neural tube defects are anencephaly and spina bifida.

Anencephaly occurs when the brain and head do not develop normally. Babies with anencephaly are almost always stillborn or die shortly after birth.

Spina bifida can either be open or closed. Open spina bifida - sometimes called "open spine" occurs when the lower part of the neural tube is open and the spinal cord and nerves are exposed outside the body. Some babies with open spina bifida die. Those that survive infancy usually have medical problems, some more severe than others.

Most children with open spine also have hydrocephalus (water on the brain). A few are mentally retarded, but most are not. Many children with open spina bifida cannot control their bowels and bladder. These children will also frequently have loss of sensation in the lower part of the body. They often require operations, braces, and physical therapy to walk and to have a chance to lead as normal a life as possible.

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In closed spina bifida. The spinal cord is not exposed outside the body, but is covered with skin which has grown over the defect. Closed spina bifida creates the same handicaps, but is usually less severe. Closed spina bifida is usually not detected by AFP testing.

Research continues into the causes and treatment of neural tube defects. It is hoped that in the coming years, advances in medical science will make it possible to prevent these disorders altogether. Meanwhile, AFP testing offers the best available means for early diagnosis of anencephaly and open spina bifida.

Other Information about AFP Testing . . .

The AFP blood test is only a screening test. Remember, a positive blood test does not necessarily mean something is wrong. An elevated AFP may mean that the pregnancy is further along than you thought, that there are twins, or that other conditions are present. Less than 5 out of every 100 women whose blood test is positive will be carrying a baby with a neural tube defect. **If the blood test is positive, either high or low, other tests will be needed to find out if something is really wrong.** These tests include a sonogram (sound wave picture), possibly more blood work, and possibly amniocentesis (drawing fluid from the bag of water).

The AFP Test gives the doctor important information. Identifying high risk pregnancies early will help your doctor manage your pregnancy appropriately. Clearly, it is very important for the doctor to know if the baby has a severe birth defect. Twins or a change in due date will change the plans for delivery. Recent studies have shown that low AFP might also be significant. Low AFP is associated with a higher risk of miscarriage and with a higher chance of having a baby with a chromosome disorder, such as Down Syndrome. Some neural tube defects, if diagnosed early, can be treated with prenatal surgery (and although this procedure cannot restore lost neurological function, it may prevent additional loss from occurring, improving the long term outcome for the baby.) If a problem is identified, you and your doctor can discuss the care for you and your baby.

If An AFP Test is Normal, Can The Mother Be Certain Everything Is All Right With The Baby?
No. Although the AFP test is useful, it does not guarantee a normal baby. It will pick up most, but not all cases of neural tube defects. There are also other kinds of problems which the AFP test cannot detect. But remember, most babies are healthy. !!

If you have further questions regarding the Alpha-Fetal Protein Test, please consult your doctor.

Resources for this information: Maryland Dept of Health and Mental Hygiene www.fha.maryland.gov Feb 2011
NIH http://www.ninds.nih.gov/disorders/spina_bifida/detail_spina_bifida.htm

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