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Medical Encyclopedia: Alpha fetoprotein

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Alternative names

Fetal alpha globulin; AFP

Definition

This is a blood test that measures the amount of alpha fetoprotein (AFP).

How the test is performed

Blood is drawn from a vein on the inside of the elbow or the back of the hand. The puncture site is cleaned with antiseptic, and an elastic band is placed around the upper arm to apply pressure and restrict blood flow through the vein. This causes veins below the band to fill with blood.

A needle is inserted into the vein, and the blood is collected in an air-tight vial or a syringe. During the procedure, the band is removed to restore circulation. Once the blood has been collected, the needle is removed, and the puncture site is covered to stop any bleeding.

For an infant or young child:

The area is cleansed with antiseptic and punctured with a sharp needle or a lancet. The blood may be collected in a pipette (small glass tube), on a slide, onto a test strip, or into a small container. Cotton or a bandage may be applied to the puncture site if there is any continued bleeding.

How to prepare for the test

There is no special preparation.

How the test will feel

When the needle is inserted to draw blood, some people feel moderate pain, while others feel only a prick or stinging sensation. Afterward, there may be some throbbing.

Why the test is performed

AFP is a protein normally produced by the liver and yolk sac of a fetus. AFP levels decrease soon after birth; AFP probably has no normal function in adults.

AFP is measured to:

- diagnose or monitor fetal distress or fetal abnormalities

- diagnose some liver disorders
- screen for and monitor some cancers.

During pregnancy, this test, along with the examination of amniotic fluid (amniocentesis), can help detect fetal spina bifida or other defects of the fetus' neural tube associated with elevated levels of AFP.

Normal Values

Males or nonpregnant females: less than 40 micrograms/liter

What abnormal results mean

Greater-than-normal levels of AFP may indicate:

- cancer in testes, ovaries, biliary (liver secretion) tract, stomach, or pancreas
- cirrhosis of the liver
- liver cancer
- malignant teratoma
- recovery from hepatitis

During pregnancy, increased levels of AFP may indicate:

- fetal defects
 - spina bifida
 - anencephaly
 - omphalocele
 - tetralogy of Fallot
 - duodenal atresia
 - Turner's syndrome
- intrauterine death (usually results in a miscarriage)

Additional conditions under which the test may be performed:

- testicular cancer

What the risks are

The risks associated with having blood drawn are:

- excessive bleeding
- fainting or feeling lightheaded
- hematoma (blood accumulating under the skin)
- infection (a slight risk any time the skin is broken)
- multiple punctures to locate veins

Special considerations

Veins and arteries vary in size from one patient to another and from one side of the body to the other. Obtaining a blood sample from some people may be more difficult than from others.

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Updated by: Daniel R. Alexander, M.D., Department of Internal Medicine, St. Mary's Hospital, Leonardtown, MD. Review provided by VeriMed Healthcare Network.



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