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Medical Encyclopedia: Gamma-glutamyl transpeptidase

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Alternative names

Gamma-GT; GGTP; GGT

Definition

This is a test to measure the amount of the enzyme GGT in the blood.

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

The health care provider may advise you to stop taking any drugs that can affect the test (see special considerations).

For infants and children:

The preparation you can provide for this test depends on your child's age and experience. For specific information regarding how you can prepare your child, see the following:

- Infant test or procedure preparation (birth to 1 year)
- Toddler test or procedure preparation (1 to 3 years)
- Preschooler test or procedure preparation (3 to 6 years)
- Schoolage test or procedure preparation (6 to 12 years)
- Adolescent test or procedure preparation (12 to 18 years)

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

This test is used to detect diseases of the liver, bile ducts, and kidney; and to differentiate liver or bile duct (hepatobiliary) disorders from bone disease.

GGT participates in the transfer of amino acids across the cellular membrane and in glutathione metabolism. High concentrations are found in the liver, bile ducts, and the kidney.

GGT is measured in combination with other tests. In particular, ALP is increased in hepatobiliary disease and bone disease. GGT is elevated in hepatobiliary disease, but not in bone disease. So, a patient with an elevated ALP and a normal GGT probably has bone disease, not hepatobiliary disease.

Normal Values

The normal range is 0 to 51 IU/L.

Note: IU/L = international units per liter

What abnormal results mean

Greater-than-normal levels may indicate:

- Congestive heart failure
- Cholestasis (congestion of the bile ducts)
- Cirrhosis
- Hepatic (liver) ischemia (blood deficiency)
- Hepatic (liver) necrosis (tissue death)
- Hepatic tumor
- Hepatitis
- Hepatotoxic drugs

What the risks are

- Excessive bleeding
- Fainting or feeling light-headed
- Hematoma (blood accumulating under the skin)
- Infection (a slight risk any time the skin is broken)
- Multiple punctures to locate veins

Special considerations

Drugs that can increase GGT levels include alcohol, phenytoin, and phenobarbital.

Drugs that can decrease GGT levels include clofibrate and oral contraceptives (birth control pills).

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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