

Liver Tests - Part 2



A previous publication of *Rx for Success* (#3) discussed the liver enzyme tests. This issue will go into more detail as to the causes of elevation of the liver enzymes. In brief review, the major liver enzymes that are checked in an insurance profile include SGOT (*also known as AST*), SGPT (*also known as ALT*), and GGTP. The SGPT/ALT is the most specific enzyme being produced primarily by the liver. The SGOT/AST is produced by liver tissue but also by the heart, kidney, muscle, brain, pancreas, and lung. The GGTP is produced by the liver, kidney, pancreas, heart, and brain.

Excessive alcohol consumption is a common cause of elevated liver enzymes in the United States. It is estimated that 13.5% of all Americans will suffer from an alcohol abuse disorder in their lifetime. Fatty liver is the initial manifestation of alcoholic liver disease. In women, as little as 2 ounces of alcohol a day can cause fatty liver. If a person develops fatty liver and continues to drink, in 90% of the cases, the liver disease will progress to alcoholic hepatitis. Both fatty liver and alcoholic hepatitis are completely reversible if all drinking is stopped. Only 10-20% of chronic alcoholics develop irreversible or end-stage liver disease known as cirrhosis.

Some medications can raise liver enzymes. The list is not complete but some common ones are:

- *Acetaminophen*
- *Antibiotics (Penicillins, Augmentin, Erythromycin)*
- *Anesthetic agents*
- *Cholesterol lowering (Niacin, Mevacor)*
- *Anti-seizure (Dilantin, Valproic acid, Tegretol)*
- *Hormones (estrogens, androgens)*
- *Oral hypoglycemic agents used for diabetes*
- *Psychiatric (Phenothiazines, Haldol, Thorazine, Valium, barbituates)*
- *Pain medication (Darvon)*
- *Isoniazid*

In general if their medication has caused liver inflammation, the SGOT/AST and SGPT/ALT will be higher than the GGTP. However, the GGTP can be “induced” as a solitary elevation by barbituates, tranquilizers, dilantin, digoxin, and cholesterol-lowering drugs such as Mevacor. If the liver enzymes are elevated due to a medication, discontinuation of that medication will lead to normal or near normal values within weeks to a few months.

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Viral hepatitis is another significant cause of elevated liver enzymes (*See Rx for Success #18 Hepatitis A,B,C*). Hepatitis A generally does not progress to chronic liver disease. In Hepatitis B, up to 10% of patients will develop chronic liver disease. In Hepatitis C, the majority of cases go on to develop chronic liver disease. Other viruses, such as Cytomegalovirus (*CMV*) and Epstein Barr Virus (*EBV*), can also elevate liver enzymes.

In addition, biliary obstruction (gallstones, primary biliary cirrhosis, cancer, cholangitis) and fatty liver (*often due to alcohol, obesity, diabetes, or high lipids*) will elevate liver enzymes. Some of these conditions are quite serious.

Incidentally, the condition of the blood specimen could affect the liver enzymes. A hemolyzed blood specimen will increase all three liver enzymes. A non-fasting state does not affect any of the liver enzymes. These conditions are indicated by the laboratory on transmission of results and are taken into consideration by the underwriters.

In summary, when faced with the situation of elevated liver enzymes, some follow-up investigation might help clarify the picture.

- *Was the applicant taking a medication that was not initially mentioned?*
- *Was there a documented viral illness in the days to weeks prior to the blood draw?*
- *Was the condition of the specimen normal?*
- *Has the client been evaluated by their own physician for chronic liver enzyme elevations?*

To get an idea of how a client with abnormal liver tests would be viewed in the underwriting process, see Part 3 (*Rx 132*).

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