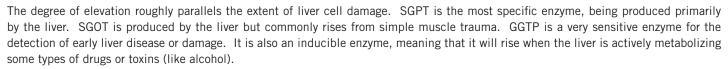


Liver Tests

Liver enzymes are commonly tested upon life insurance application. Although they may be produced by other tissues in the body, an unexplained elevation of one or more of these enzymes is a concern for impaired liver function. The liver tests most commonly encountered by the underwriter include:

- ▶ SGOT (serum glutamic oxaloacetic transaminase), also known as AST (aspartate aminotransferase)
- ▶ SGPT (serum glutamic pyruvic transaminase), also known as ALT (alanine aminotransferase)
- ▶ GGTP or GGT (gamma-glutamyl transferase or transpeptidase)

Elevations of SGOT and SGPT are usually caused by some type of liver damage that allows enzymes to "leak out" of cells.



Many impairments may cause elevations in one or more of the liver enzymes:

- ▶ Hepatitis, especially viral hepatitis (See Rx for Success-Hepatitis A,B,C)
- ▶ Cirrhosis
- ▶ Fatty liver, often associated with diabetes, obesity, elevated blood fats, or excess alcohol
- ▶ Liver cancer or metastases
- ▶ Alcohol use
- ▶ Some medications, such as Dilantin, phenobarbital, allopurinol, and many others
- ▶ A variety of infiltrative diseases of the liver
- ▶ Biliary obstruction, including conditions such as gallstones, primary biliary cirrhosis, cancer, and cholangitis

The goal in underwriting abnormal liver tests is to determine the underlying cause and then classify the risk accordingly. Many of the conditions listed above are quite serious.

In summary, when faced with the situation of abnormal liver enzymes, an underwriter will consider the degree of elevation, the clinical history, and the current physical findings. 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 prior to the blood draw?
- ▶ Has the client been evaluated by his or her own physician for chronic elevations?

The underwriter will also consider the condition of the blood specimen, in particular hemolysis, which could affect the test results. A non-fasting state does not affect any of the liver enzymes.

To get an idea of how a client with abnormal liver tests would be viewed in the underwriting process, see page 2.

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Ratings for Liver Test

• Rate for cause or see below.

If the cause is unknown and there is significant elevation of only one test:				
Bilirubin:	Ma vakio v			
• ≤ 6.0 mg/dl	No rating			
• > 6.0 mg/dl	Decline			
Alkaline phosphatase				
• Age $>$ 20 years \le 3X laboratory reference range	No rating			
• Age $<$ 20 years \le 5X laboratory reference range	No rating			
• Others	Individual consideration			
AST:				
• ≤ 5X normal	No rating			
• > 5X normal	Decline			
ALT:				
• ≤ 4X normal	No rating			
• > 4X - 5X normal	Table B			
• > 5X normal	Decline			
GGTP:				
• ≤ 4X normal	No rating			
• > 4X - 5X normal	Table B			
• > 5X normal	Decline			

If the cause is unknown and there is elevation of two or more (AST, ALT, GGTP) with no significant elevation of bilirubin or ALP, rate for highest enzyme.			
• ≤ 2X normal	No rating		
• > 2X but ≤ 3X normal	Table B		
• > 3X but ≤ 4X normal	Table D		
• > 4X but ≤ 5X normal	Table F		
• > 5X normal	Individual consideration		

For entering the tables, the following values will be considered significant elevations:

• AST, ALT	50 U/L		
• GGTP	> 65 U/L		
• Bilirubin	≥ 2 mg/dl		
• ALP			
• 20 Years, non-pregnant	• 1.5X adult laboratory reference range		
• ≤ 20 Years	5X adult laboratory reference range		
• Pregnant	3X adult laboratory reference range		

To get an idea of how a client with a history of liver tests would be viewed in the underwriting process, feel free to use the Ask "Rx" -pert Underwriter for an informal quote.

Liver Tests - Ask "Rx" -pert Underwriter (ask our experts)

Producer		Phone	Fax			
Client		Age/DOB	Sex			
If your client has elevated liver enzymes, please answer the following:						
1. How long has this abnormality been present?	(years)					
2. Please give the date and results of the most recent liver e	nzyme tests.					
a) AST/SGOT						
b) ALT/SGPT						
c) GGTP						
d) ALP						
e) Bilirubin						
3. Have these results been						
\square Increasing \square Fluctuating up and down						
☐ Decreasing ☐ Unknown						
☐ Stable						
4. Does your client drink alcohol? (answer all that apply)						
\square Yes, please note amount and frequency						
□No						
☐ Drinking pattern changed recently						
5. Is your client on any medications (prescription and/or non	ı-prescription)	?				
☐ Yes, please give details						
□No						
6. Please check if your client has had any further studies for evaluation:						
a) Hepatitis A, B, or C $\hfill\Box$	Normal	□ Abnormal				
b) Iron studies $\ \square$	Normal	□ Abnormal				
c) Liver ultrasound, CT scan, or MRI	Normal	□ Abnormal				
d) Liver biopsy □	Normal	□ Abnormal				
e) No further evaluations*						
7. Does your client have any other major health problems (ex: heart disease, etc)?						
☐ Yes, please give details						
□No						
After reading the Rx for Success on Liver Tests, please feel fro	ee to use this i	Ask "Rx" -pert Underwr	iter for an informal quote.			

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