



GENERAL HEALTH TESTING

Gamma-Glutamyl Transferase (GGT) Information Sheet

What is Gamma-Glutamyl Transferase (GGT)?

Gamma-glutamyl transferase (GGT) is predominantly present in liver, kidney, and pancreatic cells, as well as the spleen, heart, brain, and seminal vesicles (1). It is involved in the transfer of amino acids across cellular membranes, and it plays a key role in the gamma-glutamyl cycle for the synthesis and degradation of glutathione and the detoxification of drugs and xenobiotics (2).

Why analyse GGT?

The analysis of GGT levels is the most sensitive method for detecting liver disease. It is also a necessary analysis of samples with elevated alkaline phosphatase (ALP) to determine if the ALP abnormalities are due to skeletal disease (normal GGT) or hepatobiliary disease (elevated GGT).

What do elevated GGT levels mean?

GGT levels are elevated in liver disease. Elevated levels (5-30 times normal) are detected in cases of obstructive jaundice and metastatic neoplasms, usually more pronounced, at an earlier stage, and for longer periods than other liver enzymes. Moderate increases (2-5 times normal) are also observed with infectious hepatitis.

Individuals who consume large quantities of alcohol generally have elevated GGT, particularly those with alcoholic cirrhosis (3; 4). Specific drugs (e.g. phenytoin and phenobarbital) can also cause an increase in GGT levels (5).

Elevated GGT is also linked to an increased risk of other diseases and conditions, including atherosclerosis, heart failure, diabetes, metabolic syndrome, and several life-threatening cancers (6).

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Where can I find more info?

Visit www.genetrackdiagnostics.com for full test information, including specimen collection requirements

CONTACT US:

Email: support@genetrackdiagnostics.com

Phone: 1-888-802-0703

NOTE:

This brochure is provided for general information purposes only. It is not intended to replace medical advice from a health professional.

References:

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- (2) Courtay C, et al. (1992). Gamma-glutamyltransferase: nucleotide sequence of the human pancreatic cDNA. Evidence for a ubiquitous gamma-glutamyltransferase polypeptide in human tissues. *Biochem Pharmacol*, 43 (12), 2527-2533.
- (3) Allen JP, et al. (2004). Biomarkers of Heavy Drinking. National Institute of Alcohol Abuse and Alcoholism. [Online] August 2004.
- (4) van Beek JH, et al. (2014). The association of alcohol intake with gamma-glutamyl transferase (GGT) levels: evidence for correlated genetic effects. *Drug Alcohol Depend*, 134, 99-105.
- (5) Keeffe EB, Sunderland MC & Gabourel JD. (1986). Serum gamma-glutamyl transpeptidase activity in patients receiving chronic phenytoin therapy. *Dig Dis Sci*, 31 (10), 1056-1061.
- (6) Koenig G & Seneff S. (2015). Gamma-Glutamyltransferase: A Predictive Biomarker of Cellular Antioxidant Inadequacy and Disease Risk. *Dis Markers*, 818570.