

If a conflict arises between a Clinical Payment and Coding Policy and any plan document under which a member is entitled to Covered Services, the plan document will govern. If a conflict arises between a CPCP and any provider contract pursuant to which a provider participates in and/or provides Covered Services to eligible member(s) and/or plans, the provider contract will govern. "Plan documents" include, but are not limited to, Certificates of Health Care Benefits, benefit booklets, Summary Plan Descriptions, and other coverage documents. Blue Cross and Blue Shield of Illinois may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. BCBSIL has full and final discretionary authority for their interpretation and application to the extent provided under any applicable plan documents.

Providers are responsible for submission of accurate documentation of services performed. Providers are expected to submit claims for services rendered using valid code combinations from Health Insurance Portability and Accountability Act approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing Editor, American Medical Association, Current Procedural Terminology, CPT[®] Assistant, Healthcare Common Procedure Coding System, ICD-10 CM and PCS, National Drug Codes, Diagnosis Related Group guidelines, Centers for Medicare and Medicaid Services National Correct Coding Initiative Policy Manual, CCI table edits and other CMS guidelines.

Claims are subject to the code edit protocols for services/procedures billed. Claim submissions are subject to claim review including but not limited to, any terms of benefit coverage, provider contract language, medical policies, clinical payment and coding policies as well as coding software logic. Upon request, the provider is urged to submit any additional documentation.

Gamma-glutamyl Transferase in Adults

Policy Number: CPCPLAB056

Version 1.0

Approval Date: September 25, 2025

Plan Effective Date: January 1, 2026

Description

The Plan has implemented certain lab management reimbursement criteria. Not all requirements apply to each product. Providers are urged to review Plan documents for eligible coverage for services rendered.

Reimbursement Information:

NOTE: This policy is specific to individuals 18 years of age or older. Criteria below do not apply to individuals less than 18 years of age.

1. For individuals with elevated alkaline phosphatase activity, serum GGT testing no more than once every two weeks **may be reimbursable**.
2. To assess for liver injury, function, and/or disease, serum GGT testing no more than once every two weeks **may be reimbursable** for individuals with at least **one** of the following:
 - a. Chronic alcohol use;
 - b. Long-term drug therapy known to have a potential for causing liver toxicity;
 - c. Exposure to hepatotoxins;
 - d. Viral hepatitis, amoebiasis, tuberculosis, psittacosis, or similar infections that may cause hepatic injury;
 - e. Primary or secondary malignant neoplasms of the digestive system;
 - f. Diabetes mellitus;
 - g. Malnutrition;
 - h. Disorders of iron and mineral metabolism;
 - i. Sarcoidosis;
 - j. Amyloidosis;
 - k. Lupus;
 - l. Hypertension;
 - m. Gastrointestinal disease;
 - n. Pancreatic disease;
 - o. To assess liver function subsequent to liver transplantation.
3. For asymptomatic individuals, serum GGT testing during a wellness visit or a general exam without abnormal findings **is not reimbursable**.

Procedure Codes

The following is not an all-encompassing code list. The inclusion of a code does not guarantee it is a covered service or eligible for reimbursement.

Codes
82977

References:

1. Vroon D, Israili Z. *Clinical Methods: The History, Physical, and Laboratory Examinations*. 3rd edition. 1990.
2. Singh M, Tiwary S, Patil D, Sharma D, Shukla V. Gamma-Glutamyl Transpeptidase (GGT) As A Marker In Obstructive Jaundice. *The Internet Journal of Surgery*. 2006;9(2)
3. Dillon JF, Miller MH. Gamma glutamyl transferase 'To be or not to be' a liver function test? *Ann Clin Biochem*. Nov 2016;53(6):629-631. doi:10.1177/0004563216659887
4. Dixit S, Singh P. Usefulness of Gamma Glutamyl Transferase as Reliable Biological Marker in Objective Corroboration of Relapse in Alcohol Dependent Patients. *J Clin Diagn Res*. Dec 2015;9(12):Vc01-vc04. doi:10.7860/jcdr/2015/14752.6895
5. Koenig G, Seneff S. Gamma-Glutamyltransferase: A Predictive Biomarker of Cellular Antioxidant Inadequacy and Disease Risk. *Dis Markers*. 2015;2015:818570. doi:10.1155/2015/818570
6. Ndrepepa G, Kastrati A. Gamma-glutamyl transferase and cardiovascular disease. *Ann Transl Med*. Dec 2016;4(24):481. doi:10.21037/atm.2016.12.27
7. Newsome PN, Cramb R, Davison SM, et al. Guidelines on the management of abnormal liver blood tests. *Gut*. Jan 2018;67(1):6-19. doi:10.1136/gutjnl-2017-314924
8. Gowda S, Desai PB, Hull VV, Math AA, Vernekar SN, Kulkarni SS. A review on laboratory liver function tests. *Pan Afr Med J*. Nov 22 2009;3:17.
9. AACC. Gamma-Glutamyl Transferase (GGT). <https://www.labtestsonline.org/tests/gamma-glutamyl-transferase-ggt>
10. LabCorp. γ-Glutamyl Transferase (GGT). <https://www.labcorp.com/tests/001958/glutamyl-transferase-ggt>
11. Kwo PY, Cohen SM, Lim JK. ACG Clinical Guideline: Evaluation of Abnormal Liver Chemistries. *Am J Gastroenterol*. Jan 2017;112(1):18-35. doi:10.1038/ajg.2016.517
12. Yamada J, Tomiyama H, Yambe M, et al. Elevated serum levels of alanine aminotransferase and gamma glutamyltransferase are markers of inflammation and oxidative stress independent of the metabolic syndrome. *Atherosclerosis*. Nov 2006;189(1):198-205. doi:10.1016/j.atherosclerosis.2005.11.036

13. Friedman L. Approach to the patient with abnormal liver biochemical and function tests. Updated April 8, 2025.
<https://www.uptodate.com/contents/approach-to-the-patient-with-abnormal-liver-biochemical-and-function-tests>
14. Xing M, Gao M, Li J, Han P, Mei L, Zhao L. Characteristics of peripheral blood Gamma-glutamyl transferase in different liver diseases. *Medicine (Baltimore)*. 2022;101(1):e28443-e28443. doi:10.1097/md.00000000000028443
15. Wang RQ, Zhang QS, Zhao SX, et al. Gamma-glutamyl transpeptidase to platelet ratio index is a good noninvasive biomarker for predicting liver fibrosis in Chinese chronic hepatitis B patients. *J Int Med Res*. Dec 2016;44(6):1302-1313. doi:10.1177/0300060516664638
16. Lee J, Kim MY, Kang SH, et al. The gamma-glutamyl transferase to platelet ratio and the FIB-4 score are noninvasive markers to determine the severity of liver fibrosis in chronic hepatitis B infection. *Br J Biomed Sci*. Jul 2018;75(3):128-132. doi:10.1080/09674845.2018.1459147
17. Wang Z, Song P, Xia J, Inagaki Y, Tang W, Kokudo N. Can gamma-glutamyl transferase levels contribute to a better prognosis for patients with hepatocellular carcinoma? *Drug Discov Ther*. Jun 2014;8(3):134-8. doi:10.5582/ddt.2014.01025
18. Lothar T. Enzymes *Clinical Laboratory Diagnostics* 2022:chap 1.
<https://www.clinical-laboratory-diagnostics.com/k01.html>
19. Haijer FW, Van Vliet CB, Brusse-Keizer MGJ, Van der Palen JAM, Kerbert-Dreteler MJ, Kolkman JJ. Gamma-Glutamyl Transferase: A Friend against Cholestatic Itch? A Retrospective Observational Data Analysis in Patients with Extrahepatic Cholestasis. *International Journal of Hepatology*. 2023;2023(1):2903171. doi:10.1155/2023/2903171
20. Lippi I, Perondi F, Meucci V, Bruno B, Gazzano V, Guidi G. Clinical utility of urine kidney injury molecule-1 (KIM-1) and gamma-glutamyl transferase (GGT) in the diagnosis of canine acute kidney injury. *Vet Res Commun*. Jun 2018;42(2):95-100. doi:10.1007/s11259-018-9711-7
21. Sette LH, Almeida Lopes EP. Liver enzymes serum levels in patients with chronic kidney disease on hemodialysis: a comprehensive review. *Clinics (Sao Paulo)*. 2014;69(4):271-8. doi:10.6061/clinics/2014(04)09
22. Noborisaka Y, Ishizaki M, Yamazaki M, Honda R, Yamada Y. Elevated Serum Gamma-Glutamyltransferase (GGT) Activity and the Development of Chronic Kidney Disease (CKD) in Cigarette Smokers. *Nephrourol Mon*. Nov 2013;5(5):967-73. doi:10.5812/numonthly.13652

23. Lee DY, Han K, Yu JH, et al. Prognostic value of long-term gamma-glutamyl transferase variability in individuals with diabetes: a nationwide population-based study. *Scientific Reports*. 2020/09/21 2020;10(1):15375. doi:10.1038/s41598-020-72318-7
24. Engelken FJ, Bettschart V, Rahman MQ, Parks RW, Garden OJ. Prognostic factors in the palliation of pancreatic cancer. *Eur J Surg Oncol*. May 2003;29(4):368-73. doi:10.1053/ejso.2002.1405
25. Gori E, Pierini A, Lippi I, Boffa N, Perondi F, Marchetti V. Urinalysis and Urinary GGT-to-Urinary Creatinine Ratio in Dogs with Acute Pancreatitis. *Vet Sci*. Mar 13 2019;6(1)doi:10.3390/vetsci6010027
26. Ramandi A, George J, Behnouch AH, et al. The Association Between Serum Gamma-Glutamyl Transferase and Gastrointestinal Cancer Risk: A Systematic Review and Meta-Analysis. *Cancer Medicine*. 2025;14(2):e70581. doi:10.1002/cam4.70581
27. Wang H, Zheng H, Cao X, et al. Association between serum γ -glutamyl transferase and advanced colorectal adenoma among inpatients: a case-control study. *Front Oncol*. 2024;13doi:10.3389/fonc.2023.1188017
28. Nivukoski U, Bloigu A, Bloigu R, Aalto M, Laatikainen T, Niemela O. Liver enzymes in alcohol consumers with or without binge drinking. *Alcohol*. Aug 2019;78:13-19. doi:10.1016/j.alcohol.2019.03.001
29. Choe YM, Lee BC, Choi IG, Suh GH, Lee DY, Kim JW. Combination of the CAGE and serum gamma-glutamyl transferase: an effective screening tool for alcohol use disorder and alcohol dependence. *Neuropsychiatr Dis Treat*. 2019;15:1507-1515. doi:10.2147/ndt.s203855
30. Grundy SM. Gamma-glutamyl transferase: another biomarker for metabolic syndrome and cardiovascular risk. *Arterioscler Thromb Vasc Biol*. Jan 2007;27(1):4-7. doi:10.1161/01.atv.0000253905.13219.4b
31. Lee MY, Hyon DS, Huh JH, et al. Association between Serum Gamma-Glutamyltransferase and Prevalence of Metabolic Syndrome Using Data from the Korean Genome and Epidemiology Study. *Endocrinol Metab (Seoul)*. Dec 2019;34(4):390-397. doi:10.3803/enm.2019.34.4.390
32. Chung HS, Lee JS, Kim JA, et al. gamma-Glutamyltransferase Variability and the Risk of Mortality, Myocardial Infarction, and Stroke: A Nationwide Population-Based Cohort Study. *J Clin Med*. Jun 12 2019;8(6)doi:10.3390/jcm8060832
33. Ndrepepa G, Colleran R, Kastrati A. Gamma-glutamyl transferase and the risk of atherosclerosis and coronary heart disease. *Clin Chim Acta*. Jan 2018;476:130-138. doi:10.1016/j.cca.2017.11.026

34. Arasteh S, Moohebbati M, Avan A, et al. Serum level of gamma-glutamyl transferase as a biomarker for predicting stenosis severity in patients with coronary artery disease. *Indian Heart J.* Nov - Dec 2018;70(6):788-792. doi:10.1016/j.ihj.2017.11.017
35. Celik O, Cakmak HA, Satilmis S, et al. The relationship between gamma-glutamyl transferase levels and coronary plaque burdens and plaque structures in young adults with coronary atherosclerosis. *Clin Cardiol.* Sep 2014;37(9):552-7. doi:10.1002/clc.22307
36. Kim Y-G, Park G-M, Lee SB, et al. Association of gamma-glutamyl transferase with subclinical coronary atherosclerosis and cardiac outcomes in non-alcoholics. *Scientific Reports.* 2020/10/22 2020;10(1):17994. doi:10.1038/s41598-020-75078-6
37. Xu T, Wang W, Zhai L, et al. Serum Gamma-glutamyl Transferase Levels Predict Functional Outcomes after Aneurysmal Subarachnoid Hemorrhage. *Biomed Environ Sci.* Mar 2017;30(3):170-176. doi:10.3967/bes2017.024
38. Yao T, Li J, Long Q, et al. Association between Serum Gamma-glutamyl transferase and Intracranial Arterial Calcification in Acute Ischemic Stroke Subjects. *Sci Rep.* Dec 27 2019;9(1):19998. doi:10.1038/s41598-019-56569-7
39. Korantzopoulos P, Tzimas P, Kalantzi K, et al. Association between serum gamma-glutamyltransferase and acute ischemic nonembolic stroke in elderly subjects. *Arch Med Res.* Oct 2009;40(7):582-9. doi:10.1016/j.arcmed.2009.07.012
40. Yang W, Kang DW, Lee SH. Effects of Gamma-Glutamyl Transferase on Stroke Occurrence Mediated by Atrial Fibrillation. *J Clin Neurol.* Jan 2020;16(1):60-65. doi:10.3988/jcn.2020.16.1.60
41. Kaneko K, Yatsuya H, Li Y, et al. Association of gamma-glutamyl transferase and alanine aminotransferase with type 2 diabetes mellitus incidence in middle-aged Japanese men: 12-year follow up. *J Diabetes Investig.* May 2019;10(3):837-845. doi:10.1111/jdi.12930
42. Kunutsor SK, Abbasi A, Adler AI. Gamma-glutamyl transferase and risk of type II diabetes: an updated systematic review and dose-response meta-analysis. *Ann Epidemiol.* Nov 2014;24(11):809-16. doi:10.1016/j.annepidem.2014.09.001
43. Nano J, Muka T, Ligthart S, et al. Gamma-glutamyltransferase levels, prediabetes and type 2 diabetes: a Mendelian randomization study. *Int J Epidemiol.* Oct 1 2017;46(5):1400-1409. doi:10.1093/ije/dyx006
44. De Silva NMG, Borges MC, Hingorani AD, et al. Liver Function and Risk of Type 2 Diabetes: Bidirectional Mendelian Randomization Study. *Diabetes.* Aug 2019;68(8):1681-1691. doi:10.2337/db18-1048
45. Shibabaw T, Dessie G, Molla MD, Zerihun MF, Ayelign B. Assessment of liver marker enzymes and its association with type 2 diabetes mellitus in Northwest Ethiopia. *BMC Res Notes.* Oct 29 2019;12(1):707. doi:10.1186/s13104-019-4742-x

46. Yoo D, Kim R, Jung YJ, Han K, Shin CM, Lee JY. Serum gamma-glutamyltransferase activity and Parkinson's disease risk in men and women. *Sci Rep*. Jan 27 2020;10(1):1258. doi:10.1038/s41598-020-58306-x
47. Andrews SJ, Goate A, Anstey KJ. Association between alcohol consumption and Alzheimer's disease: A Mendelian randomization study. *Alzheimers Dement*. Feb 2020;16(2):345-353. doi:10.1016/j.jalz.2019.09.086
48. Hong SH, Han K, Park S, et al. Gamma-Glutamyl Transferase Variability and Risk of Dementia in Diabetes Mellitus: A Nationwide Population-Based Study. *J Clin Endocrinol Metab*. Mar 1 2020;105(3)doi:10.1210/clinem/dgaa019
49. Yavuz BB, Yavuz B, Halil M, et al. Serum elevated gamma glutamyltransferase levels may be a marker for oxidative stress in Alzheimer's disease. *Int Psychogeriatr*. Aug 2008;20(4):815-23. doi:10.1017/s1041610208006790
50. Huang CF, Yeh ML, Tsai PC, et al. Baseline gamma-glutamyl transferase levels strongly correlate with hepatocellular carcinoma development in non-cirrhotic patients with successful hepatitis C virus eradication. *J Hepatol*. Jul 2014;61(1):67-74. doi:10.1016/j.jhep.2014.02.022
51. Hu YC, Liu H, Liu XY, et al. Value of gamma-glutamyltranspeptidase-to-platelet ratio in diagnosis of hepatic fibrosis in patients with chronic hepatitis B. *World J Gastroenterol*. Nov 7 2017;23(41):7425-7432. doi:10.3748/wjg.v23.i41.7425
52. Liu CF, Zhou WN, Lu Z, Wang XT, Qiu ZH. The associations between liver enzymes and the risk of metabolic syndrome in the elderly. *Exp Gerontol*. Jun 2018;106:132-136. doi:10.1016/j.exger.2018.02.026
53. Wang S, Zhang J, Zhu L, et al. Association between liver function and metabolic syndrome in Chinese men and women. *Sci Rep*. Mar 20 2017;7:44844. doi:10.1038/srep44844
54. Ndrepepa G, Holdenrieder S, Cassese S, et al. A comparison of gamma-glutamyl transferase and alkaline phosphatase as prognostic markers in patients with coronary heart disease. *Nutr Metab Cardiovasc Dis*. Jan 2018;28(1):64-70. doi:10.1016/j.numecd.2017.09.005
55. Conigrave KM, Degenhardt LJ, Whitfield JB, Saunders JB, Helander A, Tabakoff B. CDT, GGT, and AST as markers of alcohol use: the WHO/ISBRA collaborative project. *Alcohol Clin Exp Res*. Mar 2002;26(3):332-9. doi:10.1111/j.1530-0277.2002.tb02542.x
56. Rosoff DB, Charlet K, Jung J, et al. Association of High-Intensity Binge Drinking With Lipid and Liver Function Enzyme Levels. *JAMA Netw Open*. Jun 5 2019;2(6):e195844. doi:10.1001/jamanetworkopen.2019.5844
57. Jousilahti P, Rastenyte D, Tuomilehto J. Serum gamma-glutamyl transferase, self-reported alcohol drinking, and the risk of stroke. *Stroke*. Aug 2000;31(8):1851-5. doi:10.1161/01.str.31.8.1851

58. Mujawar SJ, Suchitra G, Kosandal KA, Choudhari S, Inamdar NA, Ahmed KB. Evaluation of salivary gamma-glutamyl transpeptidase as a biomarker in oral squamous cell carcinoma and precancerous lesions. *J Oral Maxillofac Pathol*. Sep-Dec 2020;24(3):584-584. doi:10.4103/jomfp.JOMFP_73_20
59. Li S, Liao X, Pan Y, Xiang X, Zhang Y. Gamma-glutamyl transferase levels are associated with the occurrence of post-stroke cognitive impairment: a multicenter cohort study. *BMC Neurology*. 2022/02/23 2022;22(1):65. doi:10.1186/s12883-022-02587-4
60. Andrade R, Aithal G, Björnsson E, et al. EASL Clinical Practice Guidelines: Drug-induced liver injury. *J Hepatol*. Jun 2019;70(6):1222-1261. doi:10.1016/j.jhep.2019.02.014
61. Thursz M, Gual A, Lackner C, et al. EASL Clinical Practice Guidelines: Management of alcohol-related liver disease. *J Hepatol*. Jul 2018;69(1):154-181. doi:10.1016/j.jhep.2018.03.018
62. Berzigotti A, Tsochatzis E, Boursier J, et al. EASL Clinical Practice Guidelines on non-invasive tests for evaluation of liver disease severity and prognosis - 2021 update. *J Hepatol*. Sep 2021;75(3):659-689. doi:10.1016/j.jhep.2021.05.025
63. Castera L, Chan H, Arrese M, et al. EASL-ALEH Clinical Practice Guidelines: Non-invasive tests for evaluation of liver disease severity and prognosis. *J Hepatol*. Jul 2015;63(1):237-64. doi:10.1016/j.jhep.2015.04.006
64. Minuk GY. Canadian Association of Gastroenterology Practice Guidelines: evaluation of abnormal liver enzyme tests. *Can J Gastroenterol*. Sep 1998;12(6):417-21. doi:10.1155/1998/943498
65. ASAM. The ASAM Clinical Practice Guideline on Alcohol Withdrawal Management. *J Addict Med*. May/Jun 2020;14(3S Suppl 1):1-72. doi:10.1097/adm.0000000000000668

Policy Update History:

Approval Date	Effective Date; Summary of Changes
09/25/2025	01/01/2026: New policy.