

Evidence Discussion – Abnormal Liver Chemistries (AB-30.1)

Liver blood tests look at how well the liver is functioning and can indicate whether there is any damage or inflammation inside the liver. Obtaining liver chemistries for both screening and diagnostic purposes are essential. When abnormalities are found they will frequently direct the provider to obtain further diagnostic testing including advanced imaging.

A liver blood test looks at the chemicals (enzymes), proteins and other substances made by the liver to assess whether levels of any of these are abnormal. The major initial tests are for alanine transaminase, aspartate transaminase, alkaline phosphatase, and gamma-glutamyl transpeptidase.

Repeating abnormal tests helps to confirm damage to the liver.

The synthetic function of the liver can be assessed by evaluating levels of albumin and vitamin-dependent clotting factors.

Iron storage, autoimmune, infectious, cholestatic, hepatocellular, drug induced, and other liver diseases are identified, followed, and diagnosed with the help of abnormal liver chemistries.

Liver chemistries are an essential part of the non-invasive diagnosis and management of liver disease.

References

1. Kwo, Paul, et al. ACG Clinical Guideline: Evaluation of Abnormal Liver Chemistries. *Am J Gastroenterol* 2017; 112:18-35.
2. O'Shea RS, Dasarathy S, McCullough AJ. ACG practice guidelines: alcoholic liver disease. *American Journal of Gastroenterology*. 2010;105:14-32.
3. American College of Radiology ACR Appropriateness Criteria® Jaundice, Revised 2018.
4. EASL Clinical Practice Guidelines: Management of cholestatic liver diseases. *Journal of Hepatology*. 2009;51(2):237-267. doi:10.1016/j.jhep.2009.04.009.
5. Fargo, MV, et al, Evaluation of Jaundice in Adults. *Am Fam Physician*, 2017;95(3):164-68.

6. Aronsohn A, Gondal B. A Systematic Approach to Patients with Jaundice. *Seminars in Interventional Radiology*. 2016;33(04):253-258. doi:10.1055/s-0036-1592331.
7. Kalas MA, Chavez L, Leon M, Taweasedt PT, Surani S. Abnormal liver enzymes: A review for clinicians. *World J Hepatol*. 2021 Nov 27;13(11):1688-1698. doi: 10.4254/wjh.v13.i11.1688. PMID: 34904038; PMCID: PMC8637680.
8. Lala V, Zubair M, Minter DA. Liver Function Tests. 2023 Jul 30. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan–. PMID: 29494096.
9. Theal RM, Scott K. Evaluating asymptomatic patients with abnormal liver function test results. *Am Fam Physician*. 1996 May 1;53(6):2111-9. PMID: 8623723.