

# Evaluation of Mildly Elevated Liver Transaminase Levels in the Asymptomatic Patient

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**H**ave you ever had a clinic patient, who is otherwise asymptomatic, but with an incidental finding of mildly elevated (less than five times normal) transaminases? This is not an uncommon occurrence. The National Health and Nutrition Examination Survey found elevated liver transaminase levels in up to 8.9 percent of the survey population. This topic will cover the evaluation of this laboratory abnormality, and what to do about it.

## HISTORY

Common things to keep in mind always include, substance use history (e.g., alcohol causes at least 10 percent of mildly elevated

### Some Medications Associated with LFT abnormalities

Acarbose	NSAIDs
Acetaminophen	Omeprazole
Allopurinol	Pyrazinamide
Amiodarone	Rifampin
Baclofen	Risperidone
Bupropion	SSRIs
HAART	Statins
Herbals	Tetracyclines
Isoniazid	Trazodone
Ketoconazole	Valproic acid
Lisinopril	(Depakote)
Losartan	
Methotrexate	

transaminases), evidence suggesting metabolic syndrome (30% of Americans have NAFLD), and family history (e.g., hemachromatosis). Finally, never forget medications! See the inset to the left for possible iatrogenic culprits of transaminase levels.

### *Specific to the Clinical Scenario*

The differential for the cause of mildly elevated liver transaminases is broad. The history is always very important to guide what diagnostic pathway you lead yourself down. For example, celiac disease, hypo- and hyperthyroid, hemolysis, and strenuous exercise can all be culprits. Early COPD may suggest  $\alpha_1$ -antitrypsin deficiency. Travel

history and exposures may suggest a myriad of infectious processes, including Lyme disease, Q-fever, leptospirosis.

## DIAGNOSTIC WORKUP

### *Initial Testing*

Taking a stepwise approach, begin with the most common things. Start with lipid panel, fasting glucose (or HgbA1c), chronic hepatitis panel, and iron studies. You may also consider ultrasonography and evaluation of liver synthetic function. Note: statins often cause an elevation of transaminases, but this resolves in 70 percent of cases, so do not hang your hat on this too often. Finally, if the patient is otherwise asymptomatic and you have no answer from labs, you can always repeat the LFT's in 2-4 weeks. If the repeated test is normal in someone who is

### The Top 5 Causes

1. Non-alcoholic Fatty Liver Disease
2. Alcohol
3. Medications
4. Viral Hepatitis
5. Hemachromatosis



### Less Common Causes of Elevated Transaminases

- $\alpha_1$ -antitrypsin deficiency
- Autoimmune hepatitis
- Wilson Disease
- Celiac disease
- Polymyositis

otherwise asymptomatic, you can be reassured (with the exception of viral hepatitis, especially hepatitis C, which may have fluctuating LFT's). Thirty percent of adults with have normal LFTs on retesting!

## NEXT STEPS

There is not much evidence to guide evaluation, so your history of clinical judgment is key. As noted in the algorithm to the right, treating what you think is the cause (e.g., alcohol, lipid levels, diabetes control) and reevaluating in a few months is reasonable. If your history and workup do not suggest anything, consider testing for rarer causes (e.g., Wilson's Disease) and biopsy for further workup.

## CONCLUSIONS

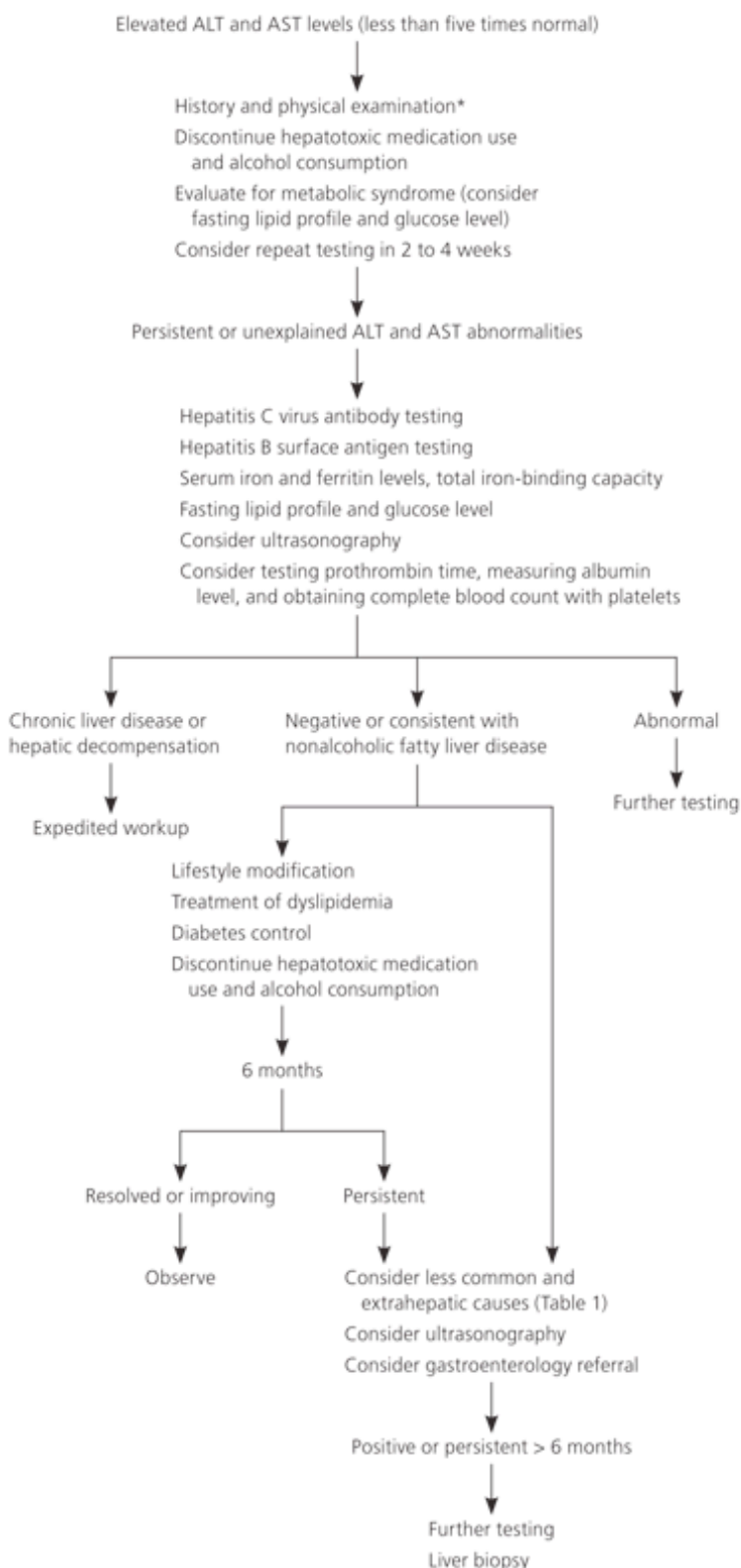
- Think carefully before even ordering LFTs on your asymptomatic patient. The USPSTF does not even recommend routine testing of LFTs. Random testing of transaminases may lead you down a diagnostic rabbit hole!
- As always, focus on history and physical to guide your evaluation.
- Start with the common things and use a stepwise approach in testing, eventually progressing to rarer diseases
- Retesting with be normal in 30 percent of patients! If your patient is asymptomatic, do not be afraid to use time to figure it out!

## REFERENCES

Oh, RC. TR Husted et al. Causes and evaluation of mildly elevated liver transaminase levels. American Family Physician. 2011. 84(9):1003-1008.

A-Z Topic Guide. U.S. Preventive Services Task Force. April 2013.

<http://www.uspreventiveservicestaskforce.org/uspsttopics.htm#Ltopics>. Accessed April 29, 2013.



\*—If the history or physical examination suggests a diagnosis, targeted testing should be pursued.