Elevated ALT/AST < 5x Upper Limit of Normal Algorithm

Elevated ALT/AST
On 2 or More Occasions
At Least 3 Months Apart

**NOTE**
Non-Liver Causes of ALT/AST Elevation:
Adrenal disease     Thyroid disease     Celiac disease

1. Consider these FIRST
   - Non-Alcoholic Fatty Liver Disease (NAFLD)
   - Fatty Liver-Alcohol
   - Hep B or Hep C

   - Check lipids, fasting glucose, A1C
   - RUQ Ultrasound

   - • HBsAg
   - • HBsAb
   - • HCVAb

Decision

NEGATIVE workup
AIH, HHC, Hep B & Hep C, Wilson and no sx advanced liver disease

Lifestyle modification, review drugs, OTCs, herbs
Continued ALT/AST Follow Up

Persistently abnormal ALT/AST (>3 months)

POSITIVE workup
Hep B, Hep C, autoimmune markers, iron saturation > 45%, low ceruloplasmin or fatty liver with worsening labs

Consider referral to Liver Specialist for possible liver biopsy

2. Consider these SECOND
   - Hereditary Hemochromatosis (HHC) or Wilson Disease
   - Autoimmune Hepatitis (AIH) In women, also in men with h/o autoimmune disorder

   - HHC:
     - Fe Profile, Ferritin
     - Wilson:
     - Ceruloplasmin if < 45y

   - • ANA
   - • SMA/Actin
   - • IgG

**NOTE**
NAFLD frequently seen with metabolic syndrome