

Metabolic dysfunction-associated steatotic liver disease (MASLD)

What is MASLD?

- Excessive fat accumulation in the liver

Who to screen for MASLD?

- Children greater than 7 years old with BMI \geq 95%
- Children with: Diabetes or pre-diabetes, obstructive sleep apnea, pan-hypopituitarism, and family history of MASLD

Initial screening labs (evaluating for metabolic syndrome co-morbidities as well as liver involvement)

Metabolic Syndrome

- Fasting lipid panel – if cholesterol $>$ 200 mg/dL or LDL $>$ 130 mg/dL as per AAP guidelines, refer to Cardiology/Lipid Clinic
- Hemoglobin A1c – if elevated (\geq 6.5%), refer to endocrinology

Liver Screening

- CBC (Thrombocytopenia $<$ 150,000)
- Chem 14/Complete Metabolic Panel
- Abdominal Ultrasound – to rule out structural liver disease or gallbladder disease. If there are comments suggesting “fatty infiltration,” please follow plan indicated below.

Work up

If ALT is \geq 45

- Provide dietary counseling for weight loss:
 - o No sugar-sweetened beverages (soda, juice, sports drinks, flavored milk)
 - o Encourage routine physical activity (15-20 minutes daily)
 - o Follow up in 3 months with repeat Chem 14

At 3 month follow up, if ALT \leq 45:

- Continue to emphasize lifestyle modification as above.
- Monitor liver enzymes every 3 months until ALT normalizes, then may obtain labs annually with WCC.
 - o If enzymes improve and then worsen on these periodic checks, please follow recommendations below.

If ALT remains \geq 45 (regardless of BMI changes): GI Referral

- Obtain the following workup and referral to CHLA MASLD Clinic
 - o GGT
 - o Thyroid stimulating hormone (TSH)
 - o Free T4
 - o Celiac antibody screen (tTG IgA, DGP IgA and total IgA)
 - o Ferritin
 - o Ceruloplasmin
 - o Antinuclear antibody (ANA)
 - o Liver Kidney Microsomal antibody (LKM)
 - o Smooth muscle antibody (SMA)
 - o Total IgG

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- Alpha 1 antitrypsin level (serum)
- If risk factors present:
 - Hepatitis B surface antigen
 - Hepatitis B surface antibody
 - Hepatitis C antibody