

Metabolic Health and Metabolic Syndrome

- ✓ Metabolic health refers to how your body digests and absorbs nutrients from the food that you eat.
- ✓ Metabolic health problems occur when you have unhealthy spikes in blood sugar or insulin, or with elevated blood fats or systemic inflammation.
- ✓ When metabolic health is compromised, this is referred to as metabolic syndrome.
- ✓ Individuals with three or more of the following have metabolic syndrome:
 - ☐ Excess body fat, especially around the waist
 - ☐ High triglycerides
 - ☐ High blood pressure
 - ☐ Low HDL cholesterol (also known as “good” cholesterol)
 - ☐ High fasting blood sugar
- ✓ It is estimated that one-third of adults in the United States have metabolic syndrome. Many individuals with metabolic syndrome do not have symptoms and do not know that they have it.
- ✓ Individuals with metabolic syndrome have a higher risk of stroke, heart disease, and type 2 diabetes—even if they do not have symptoms. They also have a higher risk of liver disease, which is described in more detail below.
- ✓ Metabolic syndrome is preventable. It is also reversible.

Risk Factors for Metabolic Syndrome

- ✓ There are multiple risk factors for metabolic syndrome. Many of these risks can be reduced through healthy lifestyle changes.
- ✓ Risk factors for metabolic syndrome include health behaviors and genetic factors:
 - ☐ High-fat diet
 - ☐ History of heavy drinking
 - ☐ Little or no physical activity
 - ☐ Older age
 - ☐ Body mass index (BMI) greater than 25
 - ☐ Family history of diabetes
 - ☐ Smoking

Alpha-1 Antitrypsin Deficiency, Liver Health, and Metabolic Health

- ✓ Alpha-1 antitrypsin deficiency can lead to liver disease.
- ✓ Metabolic syndrome can lead to the liver diseases described below.
- ✓ Metabolic dysfunction-associated steatotic liver disease (MASLD) is when fat builds up in the liver. This was previously referred to as “fatty liver disease.” You can have MASLD, even if you are not obese. It is common for healthcare providers to diagnose alpha-1 liver disease as MASLD.
- ✓ Metabolic dysfunction-associated steatohepatitis (MASH) is the advanced stage of MASLD.
- ✓ Individuals with MASH have inflammation of the liver. This is additive to Alpha-1 liver disease as a risk for liver scarring. Chronic inflammation can cause scarring of the liver, which is called cirrhosis.
- ✓ Individuals can have liver disease without any symptoms. It is possible to have a severe liver condition before you become aware of it.

Managing Metabolic Syndrome

- ✓ Treatment for metabolic syndrome usually involves lifestyle changes, including:
 - ☐ Eating a healthy diet
 - ☐ Limiting alcohol
 - ☐ Being physically active
 - ☐ Avoiding tobacco products
 - ☐ Losing weight
- ✓ Individuals with metabolic syndrome may be prescribed medications to help lower blood pressure, lower LDL cholesterol and raise HDL cholesterol, increase weight loss, or improve insulin metabolism.
- ✓ Relatively new options for improving metabolic health are the GLP-1 Receptor Agonists (GLP-1 RAs). More information about these medications is in the document focused on GLP-1 RAs located [here](#).
- ✓ Two medications have been FDA-approved specifically for MASH. Both medications are approved for individuals with MASH who have moderate to advanced liver scarring. Neither medication is approved to treat cirrhosis. Resmetirom (Rezdiffra™) was approved by the FDA in March 2024 and semaglutide (Wegovy®) was approved by the FDA in August 2025.