

MASH and you



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**Taking steps to
manage MASH**

MASH, Metabolic dysfunction-associated
steatohepatitis.



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Understanding MASH

If you have been told you have MASH or are at a high risk for developing it, you are not alone! Millions of people in the United States are living with MASH.

This booklet gives you information about how to live well with MASH. Use it to help with eating healthy and being active. If you have questions, be sure to reach out to your healthcare team.

Did you know?

About 1 out of 3 adults in the United States have some form of fatty liver disease.



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What is MASH?

MASH stands for:



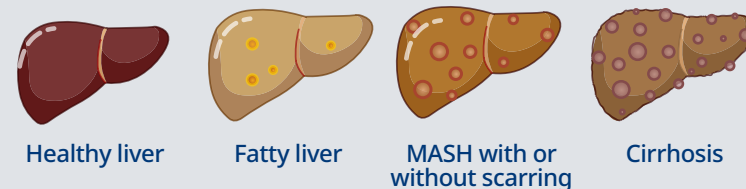
metabolic dysfunction-associated steatohepatitis.

It is an advanced form of fatty liver disease that occurs when fat builds up in your liver, causing inflammation and damage to liver cells. Over time, people living with MASH may develop liver complications, including:

- Scarring (*fibrosis*)
- The most advanced liver scarring (*cirrhosis*)
- Liver failure
- Liver cancer
- The possible need for a liver transplant

MASH is part of a larger group of liver conditions called MASLD or *metabolic dysfunction-associated steatotic liver disease*. It is also known as fatty liver disease. MASLD includes different stages of fatty liver disease.

Fatty liver disease doesn't always progress. However, in some adults, it can reach any of the stages shown here.



Causes and risk factors for MASH

MASH occurs when fat builds up in your liver and leads to inflammation and liver cell damage. This is often linked to how your body processes sugar and fat. You may be at higher risk if you have certain health conditions, including:



Excess weight or obesity, especially with a large waist size



Type 2 diabetes, prediabetes, or insulin resistance



High blood pressure



Abnormal levels of fats in your blood, which may include:

- Low HDL (“good”) cholesterol
- High triglycerides



Metabolic syndrome



Family history of cirrhosis



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Persistently elevated liver enzymes



Fatty liver



Certain genetic factors

If you are living with any of these health conditions, ask your healthcare professional whether you should be screened for MASH.

Screening for MASH with liver scarring

MASH is often called a “silent” disease. This means that you may have few or no symptoms. A healthcare professional will use various tests to assess your liver. This may include some of the blood or imaging tests listed below. Other tests may also be recommended based on your specific situation.

Blood-based tests

Check for liver inflammation and scarring

- FIB-4 (Fibrosis-4) score
 - Age
 - AST (aspartate aminotransferase) level
 - ALT (alanine aminotransferase) level
 - Platelet count
- ELF™ (Enhanced Liver Fibrosis) test

Imaging-based tests

Check for liver stiffness

- VCTE (vibration-controlled transient elastography)
- MRE (magnetic resonance elastography)



The AASLD recommends screening for MASH with liver scarring with FIB-4 every 1 to 3 years, or as often as directed by your healthcare professional.

Every 1-2 years if you have prediabetes, type 2 diabetes, or 2 or more risk factors (such as obesity, high blood pressure, or abnormal cholesterol levels)

Every 2-3 years if you do not have prediabetes or type 2 diabetes, and have less than 2 risk factors

AASLD, American Association for the Study of Liver Diseases.

Symptoms of MASH

MASH symptoms may be hard to identify. Even if you do not have any symptoms, the disease can cause harm and needs to be managed. Symptoms may occur in the presence of more advanced stages of fatty liver disease. It is best to screen, diagnose, and treat early to prevent and possibly stop disease progression. If symptoms do occur, you may experience:



Tiredness or fatigue



Abdominal pain



Nausea



Loss of appetite



Intense itchiness



Easy bruising and bleeding



Swollen belly



Yellowing of the skin (*jaundice*) or eyes

Eating for your liver

A healthier diet may help manage MASH. Your healthcare professional may recommend a reduced-calorie diet along with a healthy eating pattern to help with weight loss and slow liver damage. Try to:

- ✓ Eat more fruits, vegetables, and whole grains
- ✓ Choose unsaturated fats over saturated and trans fats
- ▲ Cut back on fat and starchy foods
- ▲ Avoid foods and drinks with added sugar and/or high fructose content
- ▲ Reduce ultra-processed foods
- ▲ Reduce or no alcohol consumption

Always speak with your healthcare professional before making any changes to your diet.

Types of fats



Unsaturated fats

Found in olive oil, canola oil, nuts, seeds, and fish



Saturated fat

Found in red meat, poultry skin, butter, and full-fat dairy products



Trans fat

Found in fried foods, some snack foods, and some baked goods

Mediterranean diet

Following a Mediterranean diet may help to lower the amount of saturated fat and cholesterol in your diet.

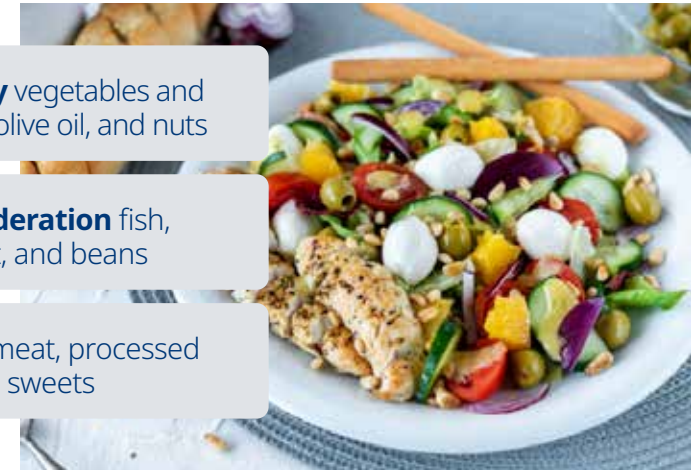


Eat mostly vegetables and fresh fruit, olive oil, and nuts

Eat in moderation fish, white meat, and beans



Limit red meat, processed meats, and sweets



Calorie-restricted DASH diet

Diets that follow a calorie-restricted **DASH** (dietary approaches to stop hypertension) eating pattern are low in saturated fat and cholesterol and high in fiber, vitamins, and minerals.



Eat fruit, vegetables, whole grains, low-fat or fat-free dairy, fish, poultry, beans, and nuts



Limit red meat, processed meat, and sugar-sweetened beverages



Staying active

Physical activity may help reduce the amount of fat in your liver and provide other health benefits. Always talk to your healthcare professional before trying any new workouts. The right amount and type of exercise can vary by person. As a general guideline, aim for:

A total of 150 minutes per week of moderate-intensity activity



OR

Increase your current activity by more than 60 minutes per week



ADD

Resistance training 2 to 3 times a week (20 to 30 min sessions)



Break it up

To reach 150 minutes of activity per week, try sessions of 30 to 60 minutes, 3 to 5 days a week.

SUN	MON	TUE	WED	THU	FRI	SAT
30 MINS.		30 MINS.		30 MINS.		60 MINS.

Example workout schedule.

If you are not currently physically active or are looking to make changes, always check with your healthcare professional first.

It is ok to start slowly and increase the amount of physical activity over time. Your goal is to do moderate intensity activity that boosts your heart rate. This doesn't mean you have to go to a gym. Depending on your fitness level, you can try:

Walking, gardening, and housework



Light jogging, biking, or swimming



Playing a sport



Managing a healthy lifestyle

Work together with your healthcare professional to create a comprehensive MASH management plan that includes adopting a healthier lifestyle. Losing even a small amount of body weight may help reduce the effects of MASH on your liver:

- 3% to 5% can reduce fat in your liver
- 10% or more may improve liver inflammation and scarring

These practical tips may help you focus on your MASH management goals.

- Follow a healthy eating plan
- Reduce the number of calories you eat
- Pay attention to portion sizes
- Limit the amount of salt and sugar in your diet
- Work with a dietitian or nutritionist, if possible
- Increase your physical activity
- Track your progress
- Build a support network of family and friends

Taking medicine

Medicines may be an important part of your MASH management plan. Talk to your healthcare professional about medicine as part of your overall MASH management plan.



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Using a Nutrition Facts label

Almost all foods that come in packages have a Nutrition Facts label. It provides key details about calories and nutrients. This can help you make food choices that support your MASH management goals.

Be sure to check the serving size and pay attention to how many calories are in 1 serving.

Try to also choose foods that are lower in saturated fat, sodium, and added sugars.

Nutrition Facts

8 servings per container

Serving size 2/3 cup (55g)

Amount per serving

Calories 230

% Daily Value*

Total Fat 8g 10%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 160mg 7%

Total Carbohydrate 37g 13%

Dietary Fiber 4g 14%

Total Sugars 12g

Includes 10g Added Sugars 20%

Protein 3g

Vitamin D 2mcg 10%

Calcium 260mg 20%

Iron 8mg 45%

Potassium 235mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



Talk with your healthcare professional about setting your specific calorie and MASH management goals.

Sticking with it

Learning you have MASH can feel overwhelming—but you're not alone. With the right plan and support, you can take steps to manage MASH.

Your liver plays a key role in digestion, energy storage, and removing harmful substances from the blood. So, if you are diagnosed with MASH, your healthcare professional will monitor your MASH over time.



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What to expect with ongoing monitoring

Monitoring MASH involves regular testing to check for improvement or progression of disease. Depending on your specific needs, your healthcare professional may recommend a combination of blood and imaging tests:

Blood tests



- FIB-4
- ELF™
- Other blood tests

Imaging-based tests

- VCTE
- MRE
- Other imaging-based tests



The goal is to use regular testing to:

- Assess risk for liver scarring
- Evaluate how your management plan is working

Following a MASH care plan

Part of managing MASH is working with your healthcare professional to build a care plan that is right for you. Your MASH care plan may include:



Assessing risk factors	Testing	Lifestyle changes	Regular follow-up
• Excess weight • Prediabetes or type 2 diabetes • High blood pressure or on a medicine for blood pressure • Abnormal levels of fats in your blood or on a medicine for cholesterol • Metabolic syndrome	• Blood tests • Imaging-based tests	• Healthy eating • Increased physical activity • Talk to your healthcare professional about medicine as part of your overall MASH management plan • Reduced or no alcohol consumption	• Regular check-ups • MASH-related blood tests and imaging* • If on a medicine for MASH, the frequency of follow-ups and testing will be determined by your healthcare professional

*These blood tests (like FIB-4) and imaging-based studies (when required) help your healthcare professional assess the severity of MASH and determine the best ongoing plan. Testing recommendations may vary based on your specific health needs.

MASH support resources

You don't have to do this alone. Several organizations offer information, support, and tools:

Liver Education Advocates	liveradvocates.org
American Liver Foundation	liverfoundation.org
Fatty Liver Foundation	fattyLiverFoundation.org
Fatty Liver Alliance	fattyLiver.ca
Community Liver Alliance	communityLiverAlliance.org



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If you have any questions or
would like assistance with any of our resources,
please call the Novo Nordisk Customer Care Center at
1-800-727-6500 (option 8 for Spanish),
Monday to Friday, from 8:30 AM to 6:00 PM EST.

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