

Nutrition and Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD)

What is MASLD?

MASLD (previously NAFLD, Non-Alcoholic Fatty Liver Disease) is a condition where there is too much fat in the liver. It is the most common type of liver disease and about 25% of adults have MASLD. In most cases it is due to a combination of eating more food than the body needs and leading an inactive lifestyle. MASLD can affect anyone, but you are more likely to have MASLD if you also have obesity and diabetes.

Why are lifestyle changes important?

The liver can become more damaged if MASLD is untreated. It can form scar tissue called fibrosis and progress to advanced liver disease called cirrhosis. If MASLD is managed early, it is possible to reduce the amount of fat in your liver which can slow down or even reverse the damage and allow your liver to recover. The best way to manage MASLD is through lifestyle changes and weight loss. As well as the benefits for your liver, weight loss can improve diabetes and reduce your risk of heart attack or stroke.

What lifestyle changes should I make?

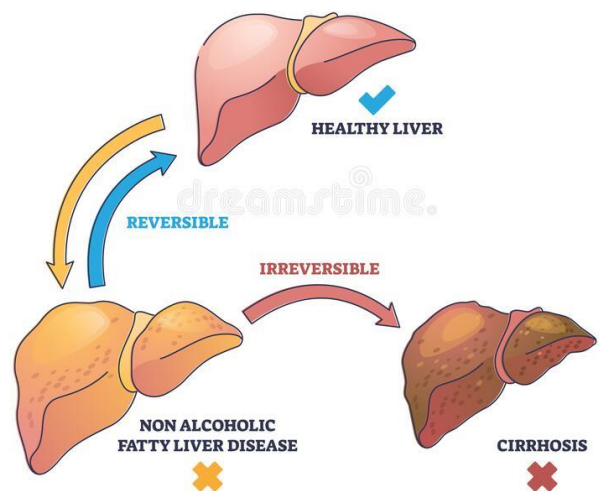
1. Lose weight
2. Stay active and exercise regularly
3. Eat a healthy diet
4. Avoid smoking and alcohol

Weight loss for MASLD

We recommend losing weight, with a goal of 7-10% weight loss. This amount of weight loss is needed to reduce liver fat as well as improve inflammation and scarring. However even smaller amounts of weight loss can have a positive effect on your health. To get started it is a good idea to work out your 10% weight loss goal. For example, if you weigh 100kg, 10% is 10kg, so your goal weight should be 90kg. Ask your doctor or nurse if you would like to know your 10% weight loss goal.

You can lose weight with many different types of diets and physical activity. However, the best changes are the ones that you can follow in the long-term that help you keep the weight off and keep your liver healthy.

LIVER DAMAGE



Staying active for MASLD

Increasing activity will help you lose weight, reduce your risk of diabetes, and help control your blood sugar levels. It is recommended to do at least 150 minutes of exercise per week over 3-5 sessions, including a combination of aerobic “cardio” exercise and resistance “strength” exercise. Some examples of these exercises are listed below.

Aerobic: brisk walking, cycling, swimming, dancing

Resistance: lifting weights, using resistance bands, pushing against your body weight

Tips for increasing activity include:

- Aim to be active every day in as many ways as you can
- Think of movement as an opportunity, not an inconvenience
- Increase your incidental exercise (e.g. walk briskly, clean the house, sit less often)
- Choose activities that you find easy and enjoyable, such as walking

It is also important to remember that exercise is essential for our mental health as well as our physical health. Exercise should be tailored to your individual needs, preferences, and abilities. We recommend speaking with a physical therapist or your healthcare team to find out what is best for you.

Healthy eating for MASLD

A Mediterranean diet is one of the best dietary patterns to follow for liver health. It has been shown to reduce the amount of fat in the liver, and most importantly, it is tasty and easy to follow! The Mediterranean diet is a plant-based diet that includes a large amount of vegetables and fruits, nuts, seeds and legumes, wholegrains, fish and seafood, and small amount of red meat and processed foods.

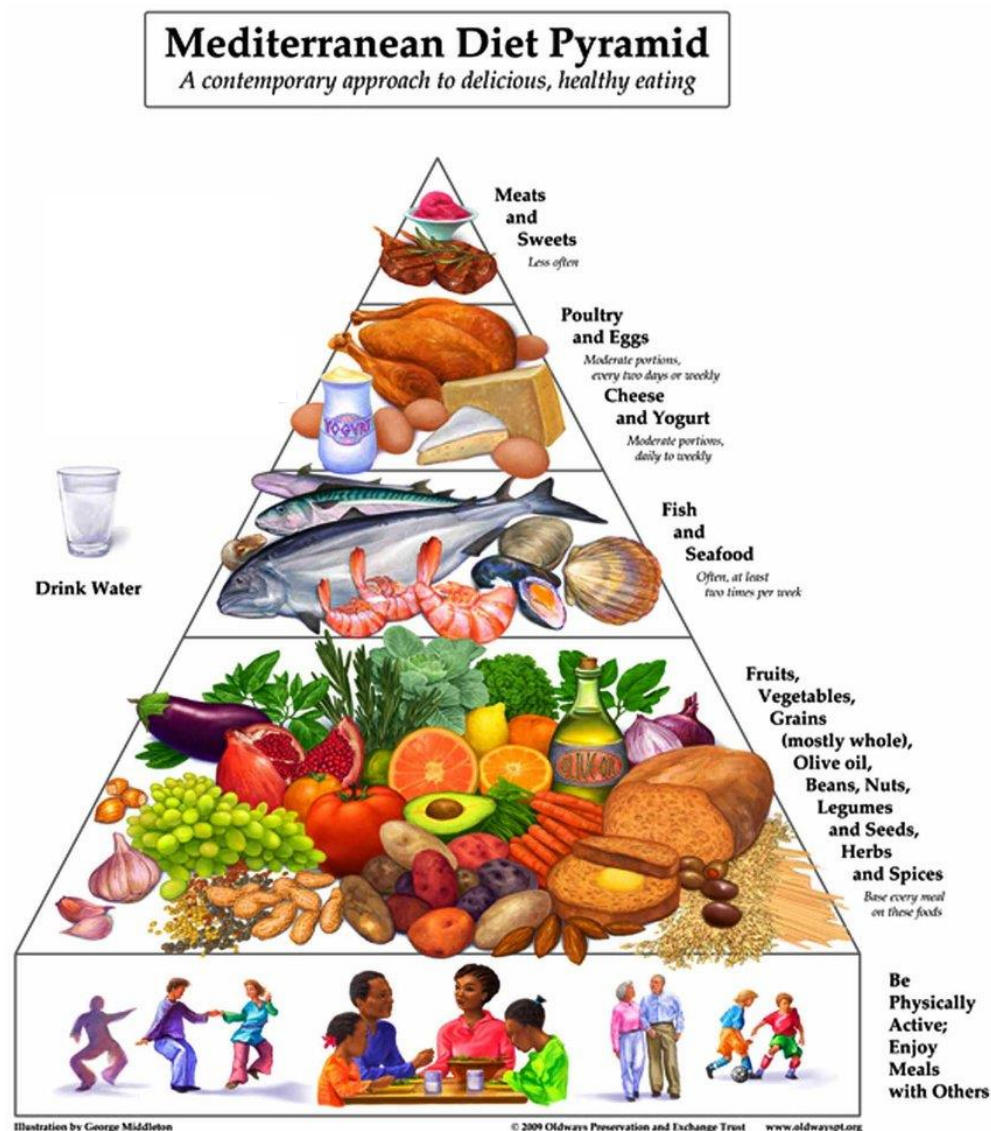


The key principles of a Mediterranean diet can be applied to most traditional patterns of eating from around the world, regardless of where you come from. Think back to what your grandparents ate before there were so many processed and convenient foods around – it would have included a lot of vegetables, grains, legumes, and a small amount of meat, similar to the key principles of a Mediterranean diet!

We have included some recommendations below about what you should eat for MASLD. It can be helpful to see a Registered Dietitian to help tailor these recommendations to your individual preferences and lifestyle.

Healthy eating for MASLD: what should I eat?

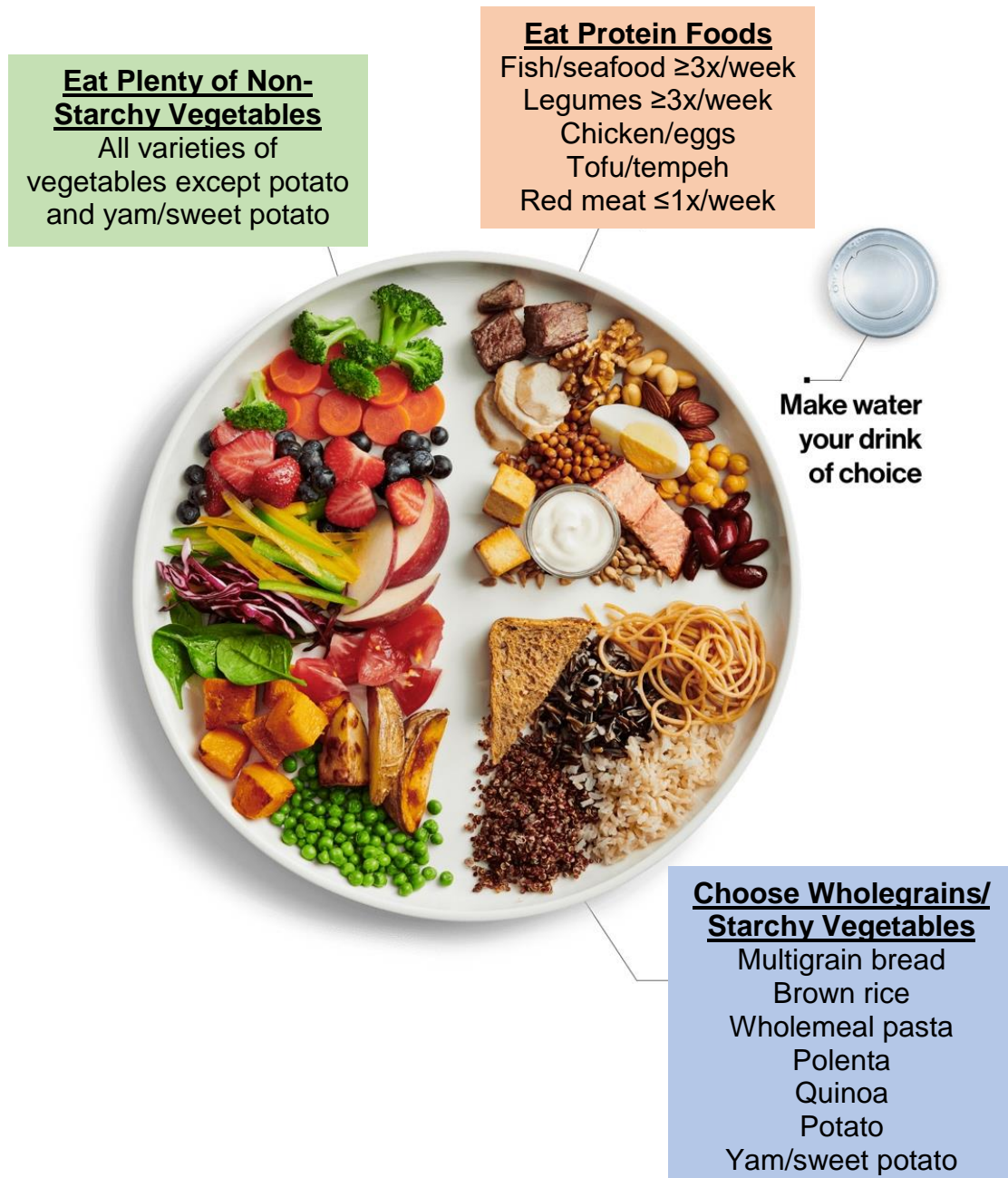
1. Base your meals on whole foods from a Mediterranean diet:
 - Include as many **vegetables** as you can with meals and snacks
 - Eat 2-3 pieces of **fruit** per day
 - Use **extra virgin olive oil** in your cooking
 - Choose **grainy breads and cereals**
 - Include **herbs and spices** in cooking
 - Include **legumes** (e.g., chickpeas, lentils, black beans), **nuts and seeds**
 - Include **fish or seafood** at least twice per week
 - Choose **white meats** (such as chicken) and **eggs**
 - Include moderate amounts of **regular or low-fat dairy**
 - **Reduce red meat** to once per week or on special occasions
 - **Avoid processed meats** (e.g., bacon, ham, sausages, salami)



2. Avoid **sugary drinks** (e.g., soft drink, cordial, energy drinks, fruit juice)
3. Avoid **packaged and processed foods** as these contain added sugar and salt
4. Avoid **saturated fats** from animal products (e.g. fat on red meat, processed meat)
5. Avoid **alcoholic drinks**, as these can make your liver disease worse

Healthy eating for MASLD: how much should I eat?

You can use the Healthy Plate Model below to help put the Mediterranean diet pyramid in perspective. When you think about your meals (especially at lunch and dinner) you should try to follow this guide for portions as best as you can.



Half of your meal should be non-starchy vegetables - they can be cooked vegetables or salad vegetables, and a wide variety is always best. A quarter of your meal should be our protein foods - this includes fish/seafood, chicken, eggs and legumes, remembering that you are limiting red meat intake to a maximum of once per week. The final quarter of your meal should be wholegrains or starchy vegetables – multigrain bread, brown rice, wholemeal pasta or other grains, potato and yam/sweet potato. For most people this typically means eating a larger portion of vegetables and reducing the amount and swapping the type of protein foods and starchy foods.

Healthy eating for MASLD: suggested meal plan

<u>Breakfast</u>	1/2 cup rolled oats or ½ cup high fibre cereal 1 cup milk or ½ cup plain Greek yoghurt 1 piece fresh fruit Handful (30g) unsalted nuts OR 2 slices multigrain bread 2 eggs or baked beans Grilled vegetables (tomato, mushrooms, spinach) Avocado
<u>Lunch</u>	2 slices multigrain bread Chicken/tuna/salmon/cottage cheese Salad vegetables (lettuce, tomato, cucumber, grated carrot, beetroot) OR Cannellini beans with small tin tuna/salmon Salad vegetables (rocket, cherry tomatoes, onion) Handful olives, small slices of feta
<u>Dinner</u>	100-120g baked fish (olive oil, lemon juice, pepper, dill) Large serve of baked vegetables ½ cup cooked brown rice or baked potato OR 100-120g chicken breast, grilled Leafy green salad vegetables (tomatoes, cucumber, onion, capsicum) ½ wholemeal pita, toasted 1tbs Greek yoghurt
<u>Snacks</u>	1-piece fresh fruit Handful unsalted nuts (any variety) 200g Greek style or natural yoghurt 3-4 multigrain crackers with cheese and tomato or avocado

Ontario Special Diet Allowance

If you have diabetes, extreme obesity (BMI > 40), high blood pressure or high blood cholesterol you may be eligible for the Ontario special diet allowance. This allowance can assist with the cost of a special diet for a medical condition. An approved health care professional must confirm your medical condition and the amount of the allowance is determined by consulting the Special Diets Schedule.

For information on applying, please visit: <https://www.ontario.ca/page/government-ontario> and search “special diet allowance”.