

METABOLIC ASSOCIATED FATTY LIVER DISEASE AND EXERCISE

PUBLIC

WHAT IS METABOLIC ASSOCIATED FATTY LIVER DISEASE (MAFLD)?

Often just called 'fatty liver', and previously known as non-alcoholic fatty liver disease (NAFLD), metabolic associated fatty liver disease (MAFLD) is a chronic liver disease associated with an excess amount of fat within the liver. It is the most common liver disease worldwide affecting about 1 in 4 adults. Many individuals are unaware that they have this condition. MAFLD is associated with overweight (particularly around the waistline), type 2 diabetes and high blood fats, blood pressure and high blood sugar levels. MAFLD can lead to more severe liver disease such as liver cirrhosis (advanced liver scarring) and liver cancer.

HOW IS METABOLIC ASSOCIATED FATTY LIVER DISEASE TREATED?

The first treatment advice for MAFLD is weight loss with changes to diet and exercise. The weight loss target for the greatest liver benefit is at least 7-10 % of body weight. Even if you don't lose weight, improving diet and exercising regularly can still help. Exercise helps to keep your muscles strong, and if you have healthy muscles, your overall metabolism can improve. As well as diet and exercise, your doctor can prescribe some medications that can help to manage associated issues such as blood pressure, blood sugar and cholesterol.

HOW DOES EXERCISE HELP WITH METABOLIC ASSOCIATED FATTY LIVER DISEASE?

Exercise has direct benefits on fatty liver including:

- Reducing liver fat
- Improving blood sugar control
- Improving blood pressure
- Improving blood fats like cholesterol and triglycerides

Exercise has other benefits for people with fatty liver including:

- Assisting with weight loss and weight management
- Improving cardiorespiratory fitness
- Improving body composition by reducing fat and/or increasing muscle mass
- Improving muscle strength and endurance
- Improving mental health
- Improving quality of life

Regular exercise can play a role in preventing the development of other conditions linked with MAFLD such as type 2 diabetes and heart disease, as well as reducing liver damage associated with the progression of fatty liver.



HOW DO I GET STARTED?

If you have any questions as to whether, or what type of exercise is right for you, you should seek guidance from your medical practitioner and a referral to an accredited exercise professional (such as an Accredited Exercise Physiologist or Physiotherapist). These professionals can conduct appropriate screening to determine what type of exercise will be both safe and beneficial for you, and can tailor a program to suit your goals, preferences and exercise abilities. This is particularly important if you are starting a new exercise program, or significantly changing your current exercise program. Visits to these allied health professionals may be covered by your private health insurance and Medicare (under a chronic disease management plan which can be developed by your General Practitioner).

If you are also being managed by other health professionals such as a cardiologist or an endocrinologist or diabetes specialist, it is important to let them know of your intentions to commence an exercise program.

WHAT TYPE OF EXERCISE IS BEST?

- It is important to choose exercises that you enjoy so that you will stick to your exercise plan in the long-term.
- Aerobic exercise (such as brisk walking, cycling, swimming, jogging, dancing and team sports) is particularly beneficial for the management of fatty liver and also improves the health of your heart, blood vessels and your aerobic fitness.
- Resistance training are exercises that increase your strength (such as body weight exercises, resistance band exercises, circuit training and weightlifting). Resistance exercise can also help to promote healthy muscles and bones.
- You should aim to achieve 150-300 minutes per week of aerobic exercise at a 'moderate' to 'vigorous' exercise intensity (see the Table below). Including two to three non-consecutive days per week of resistance training in addition to your aerobic exercise may provide additional health benefits.
- It is important to select activities that are within your physical capabilities to prevent the risk of injury and to work with an accredited exercise professional if you have any musculoskeletal or other health concerns.



RECOMMENDED EXERCISE TARGETS FOR PATIENTS WITH MAFLD

Mode	Frequency	Intensity	Duration
Aerobic training (examples: walking, jogging, cycling, swimming, dancing)	3-7 days per week	Moderate intensity: 55-69 % HRmax# Rating of perceived exertion^ (RPE/10) 3-4 At this intensity you should be able to maintain a conversation uninterrupted. Or Vigorous intensity: 70-89 % HRmax RPE 5-6 At this intensity you should not be able to maintain a conversation uninterrupted. Or A combination of moderate and vigorous exercise intensity	150-300 minutes Start at 5-10 minutes and increase gradually to 30-60 minutes per session. Or 75-150 minutes Start at 5-10 minutes and increase gradually to 20-30 minutes per session. Or Aiming for 150-300 total minutes per week Total minutes = minutes of moderate + (2 x minutes of vigorous)
Resistance Training (examples: machine weights, circuit training, resistance bands, body weight exercise)	2-3 non-consecutive days per week, <i>in addition</i> to aerobic exercise prescription	Moderate to vigorous: 8-12 exercises* 2-4 sets 8-10 repetitions** 1-2 minutes rest between sets **target a weight that you can lift 8-10 times. If you cannot lift the weight at least 8 times, it is too heavy, and if you can lift it more than 10 times, it is too light.	30-60 mins

#HRmax, maximal heart rate: your maximal heart rate is the maximal number of times your heart can beat per minute and is predicted based on your age and calculated as (220 - age).
 ^RPE, rating of perceived exertion: your RPE is a subjective rating out of 10 describing 'how hard you feel you are working' considering both your heart and lungs and your muscles. *1 repetition maximum: your 1 repetition maximum is the maximal weight that you can lift only once with good technique. 70-84% 1-RM equates to a weight that you can lift at least 8 times, but no more than 10 times before fatigue, in one set. *examples of exercises that may be selected: squats, calf raises, lunges, chest press, seated row, shoulder press, biceps curl, triceps extension, prone hold.

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If you have any concerns about the safety of your patient in commencing an exercise program, please consider referral to a Sport and Exercise Physician.



REFERENCES AND FURTHER INFORMATION

1. Johnson NA, Keating SE, and George J. Exercise and the liver: implications for therapy in fatty liver disorders. *Seminars in Liver Disease*, 2012; 32: 1-15
2. Romeo-Gomez M, Zelber-Sagi S, Trenell M. Treatment of NAFLD with diet, physical activity and exercise. *Journal of Hepatology*, 2017; 67:829-846

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