

Managing NASH (non-alcoholic steatohepatitis) through diet and lifestyle



General advice

1. Weight loss



5% weight loss improves steatosis.
10% weight loss improves steatohepatitis.

Weight loss is tough; a recent study showed that only 10% of people trying to lose weight through lifestyle intervention lose 10% of their weight; 12% lose 5-7%.

2. Diet modification



Reduce intake of processed, low fiber, high sugar foods.

Increase intake of high fiber, nutrient dense foods.

3. Include more physical activity

Exercise can reduce strain on your liver and improve fatty liver disease.



Weight Loss

- It requires a multifaceted approach including diet, exercise, stress management, and sleep.
- Focus on small, sustainable lifestyle changes.
- Plan your meals whenever possible
- Consistent habits drive progress
- Avoid pass/fail mindset
- Think quality 80-90% of the time - no one is perfect!

Diet Modification

- Eliminate or reduce alcohol.
- Try alcohol free mixed drinks like Perrier and a splash of cranberry.
- Stick to alcoholic drinks you sip slowly, like wine.
- Eliminate hydrogenated oils, including pressed oils.
- Eliminate high fructose corn syrup (HFCS).
- Reduce saturated fats.
- Reduce sodium – 1,500 and 2300 mg per day.
- Reduce added sugars.
- Reduce processed grains (white flour, baked products, snacks, convenience foods).

- All fruits are good but limit fruits to 3 cups per day.
- Watermelon, cantaloupe, pineapple and grapes are all good but limit to 1 cup per sitting.
- Eat whole grains and complex carbohydrates (potatoes, sweet potatoes, brown rice, quinoa, oats, etc.).
- Eat lean proteins (tuna, fish, shellfish, chicken, turkey).
- If vegetarian focus on beans, tofu, lentils, seitan.
- Antioxidant rich foods which include mostly fruits, vegetables, nuts and seeds.

Consider the Mediterranean Diet

- Monounsaturated fats (MUFAs) like nuts, seeds, avocado and olive oil
- Omega-3 Fatty Acids such as fish, nuts and seeds.
- Fruits and vegetables.
- MD, low in saturated fats and animal protein, high in antioxidants, fiber and MUFA, and with an adequate omega-3 to omega-6 fatty balance, represents an healthy dietary pattern, which has been shown to decrease CVD, MetS, and type 2 diabetes. Although MD seems particularly attractive for its potential to improve liver status.

- MD may have a significant impact on the composition and diversity of the microbiota. As MD is characterized by a high dietary fiber intake, it promotes beneficial modification of the gut microbiota with decreased Firmicutes and increased Bacteroides, which have been shown to ameliorate obesity, inflammation and related metabolic alterations. Polyphenols contained in MD induce an increase in Bifidobacteria, associated with various metabolic benefits such as plasma cholesterol reduction and a decrease of C-reactive protein (CRP).

Supplements to consider

- Omega 3 Fish Oil – 1000 MG- can raise Omega 3 levels.
- Probiotics – can improve liver disease.

Intake of *Lactobacillus plantarum* might be beneficial in certain metabolic disorders by reducing BMI, improving blood pressure, decreasing cholesterol and reducing fat oxidation.

Lactobacillus plantarum can be found in fermented vegetables such as kimchi, fermented beets, pickled cucumbers, pickled beans and sauerkraut. Other sources include fermented juice drinks and green olives. Although no exact dose is recommended, many over-the-counter supplements contain anywhere from 3 billion to 10 billion CFU.

Lactobacillus delbrueckii subsp. bulgaricus with *Streptococcus thermophilus* has shown a significant improvement in a marker of non-alcoholic fatty liver disease after taking 500 million CFU of *L. bulgaricus* and *S. thermophilus* daily.

All yogurt containing live and active cultures will have *L. delbrueckii subsp. bulgaricus* (or *L. bulgaricus*) and *S. thermophilus*. However, the combination can be found in supplements.

Physical Activity and Exercise

- Abdominal obesity is a major risk factor for NAFLD (more important than BMI).
- Individuals who exercise have less visceral fat than those who are sedentary.
- Exercise increases insulin sensitivity and improves blood lipids independent of weight loss.
- Decreased hepatic steatosis, inflammation, and disease progression
- Both intermittent and daily exercise are beneficial.
- Combined exercise (aerobic + resistance training) more effective than aerobic alone.
- Keep moving! It doesn't have to be in a gym. Any activity helps liver function and decreases inflammation. **DON'T UNDERESTIMATE WALKING!**

Recommendations:

- 150-300 minutes a week of moderate-intensity or 75-150 minutes a week of vigorous-intensity aerobic physical activity.
- Muscle-strengthening activities that involve all major muscle groups 2 or more days per week.