

# Fatty liver disease

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Fatty liver, or NASH (non-alcoholic hepatic steatosis), is a condition characterized by the accumulation of excess fat (triglycerides) in the liver not caused by alcohol abuse but associated with obesity and the metabolic syndrome. It is a very prevalent condition in the U.S. rivaling in incidence with alcoholic liver disease and viral hepatitis. NASH truly is a lifestyle disease, reflecting affluence and overindulgence.

While usually just causing alarming elevations in routine liver function tests that necessitate imaging studies and liver biopsies, NASH can result in cirrhosis with liver failure and the need for transplantation. No conventional treatment that is not based on diet modification and lifestyle modification exists for NASH.

The liver is the largest gland in the body weighing approximately 3.5 pounds when healthy. It is an organ of primary importance and the only one capable of regenerating itself. Only 10 to 20 percent of a functioning liver is required to sustain life, however, removal of the liver will result in death within 24 hours.

While the liver performs more than 500 tasks, its main functions include metabolism of protein, fat and carbohydrates; storage and activation of micronutrients (vitamins and minerals); metabolism of steroids; formation and excretion of bile necessary for the emulsification and digestion of dietary fats; conversion of ammonia to urea; and action as a filter and flood chamber removing bacteria and debris from the blood. It is responsible for the detoxification of substances including drugs and alcohol.

The liver is the location of the production of “new” glucose (gluconeogenesis), cholesterol and triglycerides among other substrates. When the liver becomes fatty and enlarged, metabolism of these important substrates becomes altered. This explains the impaired glucose and cholesterol metabolism along with very high triglycerides that often coexist with alcoholism or obesity and diabetes. Moreover, individuals with diabetes progress to heart disease 70 percent faster than those without diabetes.

We’ve known for some time now that obesity and diabetes are epidemics in this country—and rapidly becoming so around the world. Heart disease is a well-known consequence of these co-morbidities but fatty liver disease remains underestimated and underappreciated. Simply put, our livers put up with a lot. The SAD diet (Standard American Diet), which includes unhealthy trans fats derived from cheap vegetable oils and refined, grain-based carbohydrates, are the top suspects, coupled with alcohol, in ruining the health of millions of American’s livers.

A diseased liver can more than double from its original size. An extreme example of this is pâté de foie gras. Ducks and geese raised for this delicacy are force-fed to the point that their livers become diseased and

swollen up to ten times their natural size! The forced consumption of high-energy food such as corn and white bread damages their poor livers and often kills them. Translation: The high energy (high calorie and carbohydrate) food as delivered by the SAD diet along with the consistent eating behavior of overindulgence equals disease for the liver. Let's not forget Morgan Spurlock's documentary "Super Size Me," where his 30-day McDonald's diet resulted in weight gain, increased cholesterol and triglyceride levels, abnormal liver function and fatty liver disease—in only 30 days!

From a dietary standpoint, it is critical to avoid hydrogenated or partially hydrogenated oils (trans fats); vegetable oils such as corn, sunflower and safflower oil; processed foods; processed meats; soft drinks; added sugars, even excess fruits and fruit juices; and acetaminophen (Tylenol).

Implementing a whole, unprocessed foods diet (such as the Salad and Salmon Diet) that is lower in its glycemic index will go a long way to restoring liver health. Important supplements for liver support and regeneration are alpha-lipoic acid, NAC, NT Factor, selenium, zinc, vitamin C (sometimes administered intravenously for greater impact) trimethylglycine (betaine), phosphatidylcholine, SAM-e, curcumin and milk thistle. An ultra-potent of green tea, EGCG has recently demonstrated impressive protective effects against NASH.

Bottom line, with early recognition and appropriate nutritional and complementary treatment, NASH can be reversed and liver function normalized before permanent damage ensues.

#### **REFERENCES:**

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