

Inflammatory Diet Linked to Higher Liver Fat and Fibrosis

The risk of liver fibrosis rose nearly sixfold among people who consumed more inflammatory foods and nutrients.

May 28, 2024 By [Sukanya Charuchandra](#)

An inflammatory diet was linked to higher weight and body mass index as well as higher levels of liver fat among people with [metabolic dysfunction-associated steatotic liver disease \(MASLD\)](#), according to study results published in [BMC Gastroenterology](#). These findings suggest that eating less inflammatory foods may help prevent or slow progression of liver steatosis (fat accumulation) and fibrosis.

MASLD, the [new name](#) for non-alcoholic fatty liver disease (NAFLD), and its more severe form, metabolic dysfunction-associated steatohepatitis (MASH), are responsible for a growing proportion of advanced liver disease worldwide. (The authors of this study use the old terminology.) The buildup of fat in the liver can lead to fibrosis, [cirrhosis](#) and even [liver cancer](#). With [only one approved medication](#), fatty liver disease management still largely relies on lifestyle changes such as weight loss and exercise.

MASLD and MASH are associated with obesity, type 2 diabetes and other metabolic abnormalities. Diet and weight appear to affect liver disease progression by triggering inflammation, which promotes fibrosis. Jalal Moludi, PhD, of Kermanshah University of Medical Sciences in Iran, and colleagues studied how an inflammatory diet affects progression of liver damage in people with fatty liver disease.

The study enrolled people referred to the gastrointestinal clinic at Imam Reza Hospital in Mashhad, Iran. The researchers assessed the degree of liver scarring using an imaging method called FibroScan and calculated the Dietary Inflammatory Index (DII), a measure of the inflammatory potential of food.

The DII takes into account the effects of various nutrients and foods on pro-inflammatory and anti-inflammatory cytokines and other biomarkers. For example, anti-inflammatory nutrients included fiber, several vitamins, zinc, selenium, magnesium, polyunsaturated and monounsaturated fatty acids, beta-carotene, ginger, turmeric and caffeine. Inflammation-promoting nutrients included carbohydrates, saturated fatty acids, trans fat, cholesterol and iron.

Among 300 patients newly diagnosed with MASLD, those with other causes of liver damage (e.g., hepatitis B or C, autoimmune conditions, heavy alcohol use) were excluded, leaving 170 people for the analysis. Nearly two thirds were women, and the average age was approximately 40 years. In this group, 61 people (36%) had Grade 1, 66 (39%) had Grade 2 and 43 (25%) had Grade 3 steatosis. More than half (55%) had liver fibrosis.

The researchers observed that people with more severe steatosis had more inflammatory diets. Higher DII scores were also linked to higher weight and body mass index. Furthermore, increases in DII scores were associated with greater liver stiffness, an indicator of fibrosis. People with higher DII scores had a nearly sixfold greater risk of liver fibrosis than those with lower scores, despite adjusting for other relevant factors.

“This study suggests that a well-designed precision diet including putative anti-inflammatory components could specifically prevent and ameliorate the development of NAFLD in addition to obesity,” wrote the researchers. “Further studies with longitudinal or clinical trial design and large sample size are needed to clarify the causal relationship and to confirm these findings.”

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