Regardless of Weight Loss, Exercise Benefits People With NAFLD

Regular exercise reduced liver fat accumulation and lowered liver stiffness.

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Researchers from Japan found that exercise promoted a variety of improvements in liver health for people with non-alcoholic fatty liver disease (NAFLD), regardless of whether they lost weight. These findings were recently published in JHEP Reports.

Arising from the accumulation of fat in the liver, NAFLD and its more severe form, non-alcoholic steatohepatitis (NASH), are responsible for a growing proportion of advanced liver disease worldwide. As a result of inflammation, NAFLD can lead to the buildup of scar tissue (fibrosis), cirrhosis (advanced scarring) and even liver cancer.

With no effective approved medical therapies, disease management is dependent on lifestyle changes such as weight loss and exercise. Previous research has found that exercise, regardless of weight loss, has a positive effect on NAFLD. To understand why this might be, Junichi Shoda, MD, PhD, of the University of Tsukuba, in Japan, and colleagues studied the impact of exercise on the liver, skeletal muscle and fat-storing adipose tissue.

The researchers compared data from Japanese men with NAFLD and obesity who were prescribed a three-month exercise routine and data from those who consumed a restricted diet, meant to lead to weight loss, for the same amount of time.

Independent of the effect of weight loss, participants who followed the exercise program showed a 9.5% reduction in liver steatosis (fat accumulation) and and a 6.8% reduction in liver stiffness (a measure of liver fibrosis) for every 1% reduction in body weight. Exercise also led to a 16.4% drop in their FibroScan-AST score, a measure that helps identify individuals at risk for progressive NASH.

“We found that exercise had considerable weight-loss-independent benefits for the liver through a number of mechanisms,” wrote the researchers. “This suggests that exercise is important for NAFLD patients, regardless of whether they lose weight.”

In addition to these liver-related changes, the team noticed that those in the exercise group showed a decrease in fat-storing tissues, even while muscle mass was maintained. They also saw

an increase in muscle strength (by 11.6%), reduced inflammation and oxidative stress, and changes in levels of organokines, which are chemicals (for example, leptin and adiponection) that influence inflammation, glucose and lipid metabolism, fat distribution and other biological processes.

The team found that a lot of high-intensity exercise reduced liver steatosis and improved liver enzyme and organokine profiles. Improvements in organokine imbalance, lower inflammation and oxidative stress were all implicated.

“We tracked hepatic parameters, reduction in adipose tissue, increase in muscle strength, reductions in inflammation and oxidative stress, changes in organokine concentrations and expression of target genes of Nrf2, an oxidative stress sensor,” said Shoda in a press release.

“Patients on exercise regimens may become demotivated and drop out if they do not experience significant weight loss,” he continued. “Therefore, moderate to vigorous intensity exercise should be integrated in all NAFLD therapeutic regimens, and patients at risk for NASH should be encouraged to persevere with moderate to high-intensity exercise regardless of whether or not they lose weight.”

Click here to read the study in JHEP Reports.

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