Poor Sleep May Play Role in MASLD Development

People with MASLD woke up 55% more often in the night compared with those without the common liver disease.

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A new study found that metabolic dysfunction-associated steatotic liver disease (MASLD), formerly known as non-alcoholic fatty liver disease, may contribute to fragmented sleep patterns, Health Day reports.

Often referred to as "silent diseases," MASLD and its more severe form, metabolic dysfunction-associated steatohepatitis (MASH), are responsible for a growing proportion of advanced liver disease, mirroring a global rise in obesity. Over time, fat accumulation in the liver can lead fibrosis, cirrhosis and liver cancer.

Many experts consider MASLD part of metabolic syndrome, a cluster of conditions—including high blood pressure, elevated blood sugar, abnormal cholesterol and triglyceride levels and excess fat around the waist—that raise the risk for cardiovascular disease and other health problems.

In the United States, about 38% of adults have MASLD, according to the National Institutes of Health. By 2040, this rate is projected to increase to over 55%.

Our bodies need adequate sleep to function. Insufficient sleep is associated with overeating and weight gain. What's more, adequate sleep improves mood and overall quality of life. The American Academy of Sleep Medicine recommends that adults should get at least seven hours of sleep a night.

Earlier studies have indicated that MASLD might disturb a person's sleep cycle, but such studies relied on sleep questionnaires, according to researchers.

Published in Frontiers in Network Physiology, the new study recruited 46 adults with MASLD, MASH or MASH with cirrhosis and eight people with alcohol-related liver disease. All participants with MASLD were obese and about 80% had metabolic syndrome.

To track their sleep patterns, researchers had participants wear wrist monitors.

Those with MASLD slept the same amount as a group of health volunteers and spent the same amount of time in bed. People with MASLD, however, woke up 55% more often in the night compared with healthy individuals. They also lay 113% longer awake after having first fallen asleep, according to researchers.

What's more, about 32% of people with MASLD reported sleep disturbances related to stress compared with 6% of healthy participants.

"The underlying mechanism presumably involves genetics, environmental factors and the activation of immune responses -- ultimately driven by obesity and metabolic syndrome," said corresponding author Sofia Schaeffer, a postdoctoral researcher at the University of Basel's Center for Gastrointestinal and Liver Diseases in Switzerland, in a news release.

Halfway through the study, researchers provided participants with tips to help improve their sleep, but they had no effect.

"A single sleep hygiene education session didn't suffice to sustainably impact on the circadian rhythm in either patients with MASLD or healthy controls," said senior researcher Christine Bernsmeier, a professor at the University of Basel. "Future studies should explore perpetual sleep counseling sessions or interventions such as light therapy in combination with other lifestyle changes to improve the sleep-wake cycle in patients with MASLD."

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