

A good night's sleep may make it easier to stick to exercise and diet goals

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People who reported getting regular, uninterrupted sleep did a better job sticking to their exercise and diet plans while trying to lose weight, according to preliminary research presented at the American Heart

Association's Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Scientific Sessions 2023. The meeting will be held in Boston, February 28-March 3, 2023, and offers the latest science on population-based health and wellness and implications for lifestyle and cardiometabolic health.

"Focusing on obtaining good sleep—seven to nine hours at night with a regular wake time along with waking refreshed and being alert throughout the day—may be an important behavior that helps people stick with their physical activity and dietary modification goals," said Christopher E. Kline, Ph.D., an associate professor in the department of health and human development at the University of Pittsburgh.

"A previous study of ours reported that better sleep health was associated with a significantly greater loss of body weight and fat among participants in a year-long, behavioral weight loss program."

The researchers examined whether good sleep health was related to how well people adhered to the various lifestyle modifications prescribed in a 12-month weight loss program. The weight-loss program included 125 adults (average age of 50 years, 91% female, 81% white) who met criteria for overweight or obesity (body mass index of 27-44) without any medical conditions requiring medical supervision of their diet or physical activity.

Sleep habits were measured at the beginning of the program, at 6 months and at 12 months, through patient questionnaires, a sleep diary and 7-day readings from a wrist-worn device that recorded sleep, waking activity and rest. These measures were used to score each participant as "good" or "poor" on six measures of sleep: regularity; satisfaction; alertness; timing; efficiency (the percentage of time spent in bed when actually asleep); and duration.

A composite sleep health score of 0-6 was calculated for each participant, with one point for each "good" measure of sleep health, with higher scores indicating better levels of sleep health.

Adherence to the weight loss program was measured by percentage of group intervention sessions attended; percentage of days in which each participant ate between 85-115% of their recommended daily calories; and change in daily duration of moderate or vigorous physical activity. Participants had an average sleep health score of 4.5 out of 6 at the start of the study, at 6 months and at 12 months.

Participants self-reported their [caloric intake](#) each day using a phone app and researchers measured participants' physical activity with an accelerometer worn at the waist for one week at a time at the start of the study, at 6 months and at 12 months.

After adjusting the sleep health scores for age, gender, race and whether or not there was a partner sharing the bed, the researchers found that better sleep health was associated with higher rates of attendance at group interval sessions, adherence to caloric intake goals and improvement in time spent performing moderate-vigorous physical activity. They found:

- Participants attended 79% of group sessions in the first six months and 62% of group sessions in the second six months.
- Participants met their daily caloric intake goals on 36% of days in the first six months and 21% in the second six months.
- Participants increased their total daily time spent in moderate-vigorous activity by 8.7 minutes in the first six months, however, their total time spent decreased by 3.7 minutes in the second six months.

The decrease in group session attendance, caloric intake and in time

spent in moderate-vigorous activity in the second six months was expected, Kline said. "As one continues in a long-term behavioral weight loss intervention, it's normal for the adherence to weight loss behaviors to decrease," he said.

Additionally, while there was an association between better sleep health scores and an increase in [physical activity](#), it was not strong enough to be statistically significant, meaning that researchers cannot rule out that the results were due to chance.

"We had hypothesized that sleep would be associated with lifestyle modification; however, we didn't expect to see an association between sleep health and all three of our measures of lifestyle modification," he said. "Although we did not intervene on sleep health in this study, these results suggest that optimizing sleep may lead to better lifestyle modification adherence. "

The study's limitations include that it did not incorporate any intervention to help participants improve their sleep, that the study sample was not recruited based upon participants' sleep health characteristics, and that the overall sample population had relatively good sleep health at baseline. The sample was also primarily white and female, so it is unclear whether these results are generalizable to more diverse populations.

"One question of interest for future research is whether we can increase adherence to lifestyle modifications—and, ultimately, increase weight loss—if we improve a person's sleep health," Kline said.

A second question for the researchers is how such an intervention would be timed to improve sleep.

"It remains unclear whether it would be best to optimize sleep prior to

rather than during attempted weight loss. In other words, should clinicians tell their patients to focus on getting better and more regular sleep before they begin to attempt weight loss, or should they try to improve their sleep while at the same time modifying their diet and activity levels?" Kline said.

Improving one's [sleep health](#) is something everyone can do to improve their cardiovascular health and is a key component of the American Heart Association's Life's Essential 8. Sleep was added in 2022 as the eighth component of optimal cardiovascular health, which includes eating [healthy food](#), being physically active, not smoking, getting enough sleep, maintaining a healthy weight and controlling cholesterol, blood sugar and blood pressure levels. Cardiovascular disease claims more lives each year in the U.S. than all forms of cancer and chronic lower respiratory disease combined, according to the 2023 Statistical Update from the American Heart Association.

"There are over 100 studies linking sleep to weight gain and obesity, but this was a great example showing how sleep isn't just tied to weight itself, it's tied to the things we're doing to help manage our own weight. This could be because sleep impacts the things that drive hunger and cravings, your metabolism and your ability to regulate metabolism and the ability to make healthy choices in general," said Michael A. Grandner, Ph.D., MTR.

Grandner is director of the Sleep and Health Research Program at the University of Arizona, director of the Behavioral Sleep Medicine Clinic at the Banner-University Medical Center in Tucson, Arizona, and was a co-author of the Association's Life's Essential 8 cardiovascular health score. "Studies like this really go to show that all of these things are connected, and sometimes sleep is the thing that we can start taking control over that can help open doors to other avenues of [health](#)."

More information: Conference:
professional.heart.org/en/meetings/epi-lifestyle

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