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Long naps, daytime sleepiness tied to greater risk of metabolic syndrome

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Taking long naps or being excessively tired during the day is associated with a higher risk for developing metabolic syndrome, according to a study scheduled for presentation at the American College of Cardiology's 65th Annual Scientific Session.

Specifically, napping for 40 minutes or longer was associated with a steep increase in the risk of developing metabolic syndrome—a collection of health conditions such as high blood pressure, high cholesterol, excess fat around the waist and high blood sugar that all increase a person's risk for heart disease. Being overtired during the day was also associated with an increased risk of metabolic syndrome.

"Taking naps is widely prevalent around the world," said Tomohide Yamada, M.D., Ph.D., diabetologist at the University of Tokyo and lead author of the study. "So, clarifying the relationship between naps and metabolic disease might offer a new strategy of treatment, especially as metabolic disease has been increasing steadily all over the world."

This meta-analysis evaluated data from 21 observational studies involving 307,237 Asian and Western subjects and builds on previous work by Yamada and his colleagues that tied lengthy naps and daytime sleepiness to a greater prevalence of heart disease and type-2 diabetes. This study is the group's largest analysis to date of data collected from a number of countries.

Participants reported their daytime sleepiness by answering questions

like, "Do you have a problem with sleepiness during the day," and their napping habits by answering questions like "Do you take a daytime nap" or "Do you sleep during the day." Researchers compared participants' answers to their history of metabolic syndrome, type-2 diabetes and obesity.

The results showed a J-shaped relationship between time spent napping and metabolic syndrome risk. Subjects who napped for less than 40 minutes did not show any increased risk for metabolic syndrome, but beyond 40 minutes, risk sharply rose. Napping for 90 minutes appeared to increase metabolic syndrome risk by as much as 50 percent, as did being excessively tired during the day. Interestingly, there was a slight dip or decrease in the risk of metabolic syndrome among those napping less than 30 minutes.

As previously reported, napping for longer than an hour or being excessively tired during the day each corresponded to a 50 percent increase in type-2 diabetes. The study did not show a relationship between time spent napping and obesity, despite the close links between obesity, diabetes and metabolic syndrome.

An earlier study by Yamada and colleagues, published in the June 2015 issue of Sleep tied naps longer than an hour to an 82 percent increase in cardiovascular disease and a 27 percent increase in all cause death. They also presented data at the Annual Meeting of the European Association for the Study of Diabetes in September 2015 that showed diabetes risk increased by 56 percent if subjects were fatigued and by 46 percent if they took naps longer than an hour.

Interestingly, all three studies showed a slight decrease in risk for their respective conditions when subjects napped for under a half an hour, though Yamada said more studies are needed to confirm this finding. The National Sleep Foundation advocates naps of 20 and 30 minutes to

improve alertness without leaving sleepers groggy afterward.

"Sleep is an important component of our healthy lifestyle, as well as diet and exercise," Yamada said. "Short naps might have a beneficial effect on our health, but we don't yet know the strength of that effect or the mechanism by which it works."

Still, the results demonstrate a need for more research on how people's sleep habits influence metabolic syndrome and cardiovascular disease. All told, one in three American adults do not get enough sleep, according to the U.S. Centers for Diseases Control and Prevention.

Yamada said future research should aim to identify the potential cardiovascular benefits of short naps, as well as the mechanism by which long naps, daytime sleepiness and metabolic syndrome influence each other, and whether clinicians might eventually be able to use a patients' nap habits as a predictor for other health problems. Although this study included data from more than 300,000 participants, it may not be representative of the world population. Data was also dependent on self-reporting nap times, as opposed to objectively measuring sleep time in a lab or with a sleep tracker.

More information: The study, "Daytime Napping, Daytime Sleepiness and the Risk Of Metabolic Diseases: Dose-Response Meta-Analysis Using Restricted Cubic Spline Model," will be presented on April 3, 2016, at 9:45 a.m. CT/10:45 a.m. ET/3:45 p.m. UTC at the American College of Cardiology's 65th Annual Scientific Session in Chicago. The meeting runs April 2-4.

Provided by American College of Cardiology