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Lower home temperature in winter is associated with lower waist measurement

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Elderly adults are bigger around the middle when they turn up the heat inside their homes during the cold season and have smaller waistlines when their homes stay cool, new research finds. Investigators from Japan will present their study results Friday at the Endocrine Society's 98th annual meeting in Boston.

"Although cold exposure may be a trigger of cardiovascular disease, our data suggest that safe and appropriate cold exposure may be an effective preventive measure against obesity," said the study's lead investigator, Keigo Saeki, MD, PhD, of Nara Medical University School of Medicine Department of Community Health and Epidemiology, Nara, Japan.

Cold exposure activates thermogenesis, to generate body heat, in brown fat. This type of fat is the good calorie-burning fat that prior research found most humans have. However, Saeki said the association between the amount of cold exposure and obesity in real life remains unclear.

He and his colleagues used data from 1,103 participants in the HEIJO-KYO study, a community-based study in Japan, to investigate the association between housing environment and health in home-dwelling older adults. The participants had an average age of 72, and all stayed home in the daytime. Almost 47 percent of the group were men.

For each year of the study (2010 to 2014), the subjects underwent measurement of their abdominal, or waist, circumference before the study began in October and after it ended in April. Waist circumference

measures belly fat and can help predict the risk of developing diseases such as diabetes and heart disease.

Additionally, the researchers measured the participants' indoor home temperature every 10 minutes for one 48-hour period in the daytime during the same cold season. The average temperature outside on the measurement days was about 48 degrees Fahrenheit, or 8.7 degrees Celsius, the investigators reported. Participants were divided into four groups based on their average indoor temperature during the daytime.

Results showed that the 64 participants whose indoor temperatures were lowest (50°F or lower/10°C or lower) had an average waist circumference of 32 inches (81.3 cm). Their waist measurement was 1.4 inches smaller than that of the 164 participants with the highest housing temperature (68°F or higher/20°C or higher), whose waistlines measured 33.4 inches (84.9 cm) on average. This difference was statistically significant, according to the researchers, and remained significant when they adjusted for factors including age, sex, physical activity, total calorie intake and socioeconomic status.

According to the U.S. National Institutes of Health, the risk of disease is high with a waist circumference greater than 35 inches for women (88 cm) and more than 40 inches (102 cm) for men.

According to Saeki, to establish a safe and appropriate cold exposure for prevention from obesity, we need further study about the minimum amount of cold exposure to activate calorie-burning brown fat.

Provided by The Endocrine Society

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