

Study Examines Effect of Moderate-Intensity Exercise on Sleep Among Older Women

A team of researchers from the University of South Carolina's [Arnold School of Public Health](#) have published findings from a study that examined the effect of moderate-intensity exercise on nightly sleep variability among older adult women participating in an exercise program.

The paper, which was published in [Behavior Sleep Medicine](#), was authored by Charity Breneman (recent postdoctoral research fellow with the [Rural and Minority Health Research Center](#)) in collaboration with co-authors from the Arnold School's [Exercise Science Department](#), the University of South Carolina's College of Nursing, and the University of Pittsburgh.

"Exercise training has been demonstrated to beneficially influence mean-level measures of sleep," Dr. Breneman says. "However, few studies have examined the impact of an exercise intervention on night-to-night variability in sleep."

With this study, the researchers investigated whether four months of moderate-intensity exercise impacted night-to-night variability in sleep among older women. Forty-nine women were randomly assigned to one of two moderate-intensity walking programs with different low vs high doses of energy expenditure. They assessed the participants' sleep parameters at baseline, two months, and post intervention and calculated nightly variability in each of the sleep parameters. They also measured cardiorespiratory fitness at baseline and post intervention using a graded treadmill test.

The authors found that nightly variability in sleep demonstrated a borderline to significantly lower amount of night-to-night variability in wake time after sleep onset and number of awakenings at post intervention in comparison to baseline. Further, higher cardiorespiratory fitness levels at baseline were associated with less time in bed and lower total sleep time variability throughout the intervention. Based on these findings, Dr. Breneman and her team concluded that participation in moderate-intensity exercise reduces the amount of nightly variability for both wake time after sleep onset and the number of awakenings over time for older women.