

# Older adults with regular activity routines are happier and do better on cognitive tests, study finds

September 12 2022

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Older adults who consistently get up early and remain active throughout the day are happier and perform better on cognitive tests than those with irregular activity patterns, according to a new study led by University of Pittsburgh researchers.

The findings, published online in *JAMA Psychiatry*, suggest that patterns of activity—not just activity intensity—are important for healthy aging and [mental health](#).

"There's something about getting going early, staying active all day and following the same routine each day that seems to be protecting [older adults](#)," said lead author Stephen Smagula, Ph.D., assistant professor of psychiatry and epidemiology at Pitt. "What's exciting about these findings is that activity patterns are under voluntary control, which means that making intentional changes to one's [daily routine](#) could improve health and wellness."

To learn more about daily activity patterns in U.S.-based older adults and identify links with mental health and cognition, Smagula and his team recruited 1,800 senior citizens aged over 65. Participants wore accelerometers—movement-detecting devices often found in smartphones and exercise trackers—on their wrists for seven days to measure activity, and they completed questionnaires to assess [depression symptoms](#) and cognitive function.

The analysis showed that 37.6% of participants rose early in the morning, stayed active throughout the day and had consistent daily routines.

"Many older adults had robust patterns: They get up before 7 a.m. on average, and they keep going; they stay active for 15 hours or so each day. They also tend to follow the same pattern day in, day out," said Smagula. "Lo and behold, those same adults were happier, less depressed

and had better cognitive function than other participants."

Another group comprising 32.6% of participants similarly had consistent daily patterns but the participants were active for an average of just 13.4 hours each day because they rose later in the morning or settled down earlier in the evening. This group had more depression symptoms and poorer cognition than the early risers.

"People often think about activity intensity being important for health, but it might be the duration of activity that matters more," said Smagula. "This is a different way of thinking about activity: You may not need to be sprinting or running a marathon but simply staying engaged with activities throughout the day."

The remaining 29.8% of participants had disrupted activity patterns in which periods of activity were erratic throughout the day and inconsistent across days. These adults had the highest rates of depression and performed worst on [cognitive tests](#).

According to Smagula, the relationship between mental health and activity patterns likely goes both ways: Depression or [cognitive impairment](#) can make it harder to follow a consistent routine, and conversely, having a disrupted activity rhythm may worsen these symptoms.

"Our findings suggest that activity pattern disruption is very common and associated with [health problems](#) in older adults," explained Smagula. "The relationship is likely bi-directional, so the good news is we think that simple changes—things everyone can try—can restore regular [activity patterns](#) and doing so may improve health."

Now, Smagula and his team are developing interventions to test their hypothesis that modifying behaviors to develop more consistent daily

routines will boost cognition and improve mental health in older adults.

Smagula said that the first step to developing a consistent routine and getting better sleep is waking up at the same time each day—no matter how tired you are.

"The other thing is having a realistic plan to keep active through the whole day. This can be really hard—especially if you're in a slump or recovering from an injury—so it's important to be reasonable with yourself," he added. "A plan could include making a list of activities you enjoy and scheduling time to meet a friend or neighbor."

Time cues, called "zeitgebers," which help set the body's internal clock, can also assist in creating a stable routine. These include sunlight, exercise and eating. Pets, who often demand meals and walks at the same time each day, can be important social zeitgebers.

"Most people are aware of the importance of good sleep and exercise, but I think what's missing from this picture is the daily (circadian) pattern of activity," said Smagula. "Having something to wake up for each morning and having a full day that you find purposeful and rewarding might be what's important for us sleeping well at night and aging well."

Other authors on the study were Swathi Gujral, Ph.D., Charles F. Reynolds III, M.D., and Gehui Zhang, B.S., all of Pitt or UPMC; Naima Covassin, Ph.D., of the Mayo Clinic; Jingen Li, M.D., Ph.D., of the Mayo Clinic and Beijing University of Chinese Medicine; Warren D. Taylor, M.D., of Vanderbilt University Medical Center; and Robert T. Krafty, Ph.D., of Emory University.

**More information:** Stephen F. Smagula et al, Association of 24-Hour Activity Pattern Phenotypes With Depression Symptoms and Cognitive

Performance in Aging, *JAMA Psychiatry* (2022). [DOI: 10.1001/jamapsychiatry.2022.2573](https://doi.org/10.1001/jamapsychiatry.2022.2573)

Provided by University of Pittsburgh

Citation: Older adults with regular activity routines are happier and do better on cognitive tests, study finds (2022, September 12) retrieved 24 June 2024 from <https://medicalxpress.com/news/2022-09-older-adults-regular-routines-happier.html>

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