

PRESS RELEASE

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University students are less physically active and more sedentary than older adults in their 70s, NUS study finds

- *Month-long health tracker data from nearly 2,000 adults in Singapore showed that university students accumulate the lowest physical activity and highest sedentary time compared to working age and old adults*
- *Older adults aged 67–80 were the most active group, averaging 100 minutes more daily physical activity than students*
- *Reallocating just 30 minutes per day from sedentary time to physical activity or sleep was associated with meaningful improvements in obesity and cardiovascular health markers*
- *Findings challenge long-held assumptions about age-related inactivity and highlight young adulthood as a critical window for public health intervention*

Singapore, 14 September 2026 — Researchers at the Centre for Sleep and Cognition at the NUS Yong Loo Lin School of Medicine (NUS Medicine) have found that on average, university students are significantly less physically active and more sedentary than community-dwelling older adults in their 70s – upending conventional expectations that physical activity declines with age.

The study, titled [*Physical activity in university students compared to working age and older adults: wearable-based evidence and cardiometabolic health implications*](#), has been published in BMC Medicine. It analysed four weeks of continuous wearable device (Oura Ring) data from 1,967 adults across three Singaporean cohorts – university students (mean age ~20 years), working-age adults (mean age ~41 years), and community-dwelling older adults (mean age ~74 years) – found that university students accumulated an average of only 320 minutes of daily physical activity, compared to 347 minutes in working-age adults and 420 minutes in older adults. Conversely, students logged the highest sedentary time at 634 minutes per day (over 10.5 hours), compared to 581 minutes for working adults and 501 minutes for older adults.

Students also allocated the least time for sleep (432 minutes per day), compared to working adults (446 minutes) and older adults (456 minutes), although older adults had the shortest actual sleep time due to more fragmented sleep.

Activity patterns across the week

Inspection of activity patterns further revealed striking differences between the groups. Older adults maintained consistent physical activity throughout the day on both weekdays and weekends. In contrast, students' weekday activity was largely confined to transitions between classes, and declined even further on weekends – by approximately 30 minutes – suggesting that

even on days without classes, opportunities for additional movement were not taken. Among working adults, activity was concentrated around commuting times and lunch breaks on weekdays as expected, with a later and more evenly distributed pattern on weekends.

Dr Ju Lynn Ong, Research Assistant Professor at the Centre for Sleep and Cognition, NUS Medicine, and first author of the study said, “These patterns suggest that the daily routines of younger adults, which could be highly shaped by academic schedules, digital lifestyles, and the increasing convenience of food delivery and ride-hailing services, are contributing to an unprecedented level of sedentariness in a demographic that should biologically be at their most active.”

Every 30 minutes matters for cardiometabolic health

Using a compositional data analysis approach – which models physical activity, sedentary behaviour, and sleep as co-dependent components of a 24-hour day – the researchers found that reallocating time toward more physical activity and less sedentary behaviour was associated with lower cardiometabolic risk in working-age and older adults.

Dr Shuo Qin, Research Fellow at the Centre for Sleep and Cognition, NUS Medicine, and co-first author of the study said, “What is particularly notable is that simply shifting 30 minutes of sitting to any form of movement, even light activity such as walking, was associated with measurable improvements across multiple markers of obesity and arterial stiffness. These are precursors to cardiovascular disease and metabolic dysfunction.”

A call to rethink public health messaging

The findings carry significant public health implications. Physical inactivity is estimated to cost healthcare systems USD 53.8 billion (purchasing power parity-adjusted) globally, with Singapore's share estimated at USD 201 million.

Professor Michael Chee, Director of the Centre for Sleep and Cognition, NUS Medicine, and senior author of the study said, “Public health messaging around physical activity has traditionally focused on preserving mobility and independence in older adults. Our data suggest that this focus needs to be broadened – and urgently – to address the profound deficiencies in physical activity and high sedentariness that we are seeing in young adults. As these sedentary habits become embedded even earlier in life in successive generations, the potential cumulative health impact in coming decades is deeply concerning.”

The researchers emphasise that preventive strategies should not only encourage structured exercise but also consider how urban and digital environments can be redesigned to restore incidental and habitual movement in younger generations. The study also underscores the value of scalable, objective health surveillance using wearable devices to identify emerging population health risks before preventable chronic conditions develop.

Dr I-Min Lee, Professor of Medicine at Harvard Medical School, and Professor of Epidemiology at the TH Chan School of Public Health, added, ““We know from a large body of research that physical activity and sleep are crucially important for good health and well-being across all ages, and that too many people throughout the world do not reach healthy targets for these behaviours. The authors of the paper are to be commended for describing disparities in physical

activity and sleep across different ages in Singapore, an important first step towards understanding where interventions should focus.”

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About National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research, and entrepreneurship, with a focus on Asian perspectives and expertise. We have 15 colleges, faculties, and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established around 15 NUS Overseas Colleges entrepreneurial hubs around the world.

Our multidisciplinary and real-world approach to education, research, and entrepreneurship enables us to work closely with industry, governments, and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 30 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research, and cybersecurity.

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About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven, and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus in innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2026 by subject and the Quacquarelli Symonds (QS) World University Rankings by Subject 2026).

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