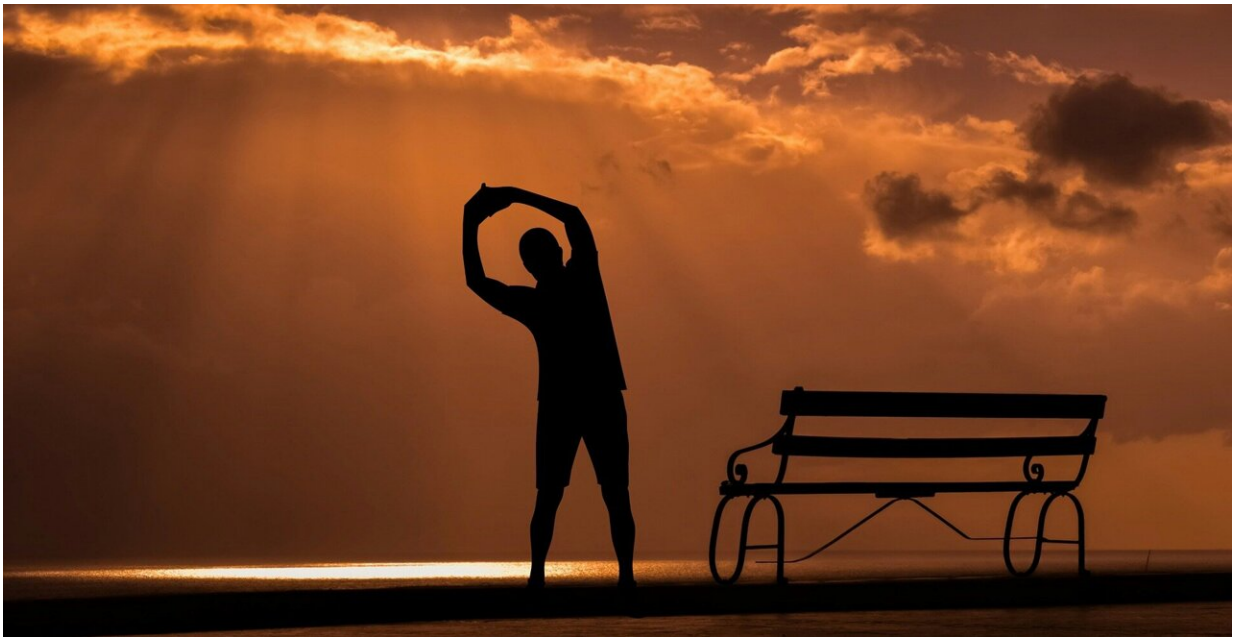


Exercise during middle age may prevent age-related chronic diseases

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Middle-aged endurance athletes have better control of blood pressure and higher arterial elasticity (a noninvasive measure of cardiovascular risk) than sedentary adults in the same age group. They also displayed comparable levels of these factors compared to young adults, thanks to regular aerobic exercise, according to new results from a joint study by physiologists in Texas and Japan. The findings offer strong indications that improvements in blood pressure control and vascular elasticity may

contribute to better cerebral blood flow regulation in middle-aged people. The study is published ahead of print in the *Journal of Applied Physiology* and has been chosen as an APSselect article for December.

Midlife arterial stiffness is linked to a higher risk of stroke and dementia later in life, along with a greater risk of age-related chronic conditions such as [high blood pressure](#), chronic kidney disease and diabetes. The scientists conducting this study set out to investigate how regular aerobic exercise during midlife could mitigate the aforementioned maladies by improving age-related deteriorations of cerebral blood flow regulation, short-term [blood pressure control](#) and arterial elasticity.

The study was conducted in 20 middle-aged athletes (ages 45 to 64) with at least 10 years of aerobic training and in 20 adults younger than 45 and 20 middle-aged sedentary adults. Researchers defined regular aerobic exercise in this study as running, cycling, swimming or multimodal training with moderate-to-vigorous intensity.

The long-term benefits of this study potentially mean significant improvements to human health. "Our findings have an important clinical implication," said co-researcher Takashi Tarumi, Ph.D., of the National Institute of Advanced Industrial Science and Technology in Tsukuba, Japan. "Regular aerobic exercise during midlife may prevent these age-related chronic diseases and extend a healthy lifespan."

More information: Tsubasa Tomoto et al, Midlife aerobic exercise and dynamic cerebral autoregulation: associations with baroreflex sensitivity and central arterial stiffness, *Journal of Applied Physiology* (2021). [DOI: 10.1152/jappphysiol.00243.2021](https://doi.org/10.1152/jappphysiol.00243.2021)

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