

# Researchers evaluate impact of early adulthood cardiorespiratory fitness levels, subsequent long-term health risks

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Cardiorespiratory fitness that results from activities such as running, walking and cycling has proved to decrease one's risk of cardiovascular-

related disease and death. However, most studies focus on cardiorespiratory fitness levels in midlife, typically in people ages 45 to 64.

Researchers at the University of Alabama at Birmingham evaluated the impact of [cardiorespiratory fitness](#) levels in early adulthood, ages 18–30, and subsequent long-term health risks. Results published Feb. 28 in *JAMA Network Open* showed early-adulthood cardiorespiratory [fitness](#) and retention fitness through [midlife](#) was associated with a lower risk of nonfatal or fatal cardiovascular events.

"The importance of cardiorespiratory exercise in early adulthood is often discounted with many studies focusing on the midlife period," said Kelley Pettee Gabriel, Ph.D., professor of epidemiology in the UAB School of Public Health and lead author. "Our findings show that the level of cardiorespiratory fitness in early adulthood is related to long-term health."

Researchers used data from the Coronary Artery Risk Development in Young Adults, or CARDIA, study which includes more than 5,000 males and females ages 18–30 who self-identified as either Black or white. The study started in 1985–86, and participants underwent in-person examinations every two to five years. For this study, participants completed cardiorespiratory fitness evaluations three times, including when they were [young adults](#) and middle-aged. Information about deaths and cardiovascular events, like heart attacks, was collected every year. Findings showed for every one minute of higher early-adulthood cardiorespiratory fitness, there was a 27% lower risk in all-cause mortality in females and a 13% lower risk in males, as well as an 11% lower risk of cardiovascular events.

In a previous CARDIA study led by Gabriel, researchers estimated that one's maximum cardiorespiratory fitness declines 4.6% from ages

20–25, with an additional 10% decline every five years from ages 30–50. Participants were evaluated not only on early-adulthood levels but also by what percent those levels were retained into midlife. The new findings showed that, for every 5% of young adult cardiorespiratory fitness retained through midlife, there was an 11% lower risk of death.

"Ultimately, our findings show where you start and what you retain throughout adulthood have a significant impact on long-term health," Gabriel said. "We now know that not only is it important to build [cardiorespiratory](#) fitness in early [adulthood](#), but also that we need to minimize the decline in those levels as much as possible as we age."

**More information:** Kelley Pettee Gabriel et al, Analysis of Cardiorespiratory Fitness in Early Adulthood and Midlife With All-Cause Mortality and Fatal or Nonfatal Cardiovascular Disease, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.0842](https://doi.org/10.1001/jamanetworkopen.2023.0842)

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