

# Does Exercise Lengthen Our Lives by Lengthening Our Cells' Lives?

*Exercising was beneficial for preserving telomeres in both humans and mice.*

Regular exercise improves blood pressure, insulin sensitivity, lipid profile, markers of inflammation, and abdominal fat. A team from Germany reports that, in addition, it can slow cellular aging.

The length of telomeres — the strands of DNA at the tips of chromosomes — regulates cellular aging: The longer the telomeres are, the further the cell is from programmed cell death. The length of telomeres is controlled by a complex of enzymes and proteins. The researchers allowed one group of mice to run on exercise wheels and kept another group confined; the unconfined mice had markedly increased activity of the biochemical processes that preserve telomere length and less programmed cell death in vascular endothelial tissue. The team then examined young human athletes (average age, 20), older athletes (average age, 51), and sedentary age-matched controls. Compared with controls, both athlete groups exhibited markedly higher activity of the chemistry that preserves telomere length, and older athletes had markedly longer telomeres in their lymphocytes than did sedentary controls.

**Comment:** Discovery of this critical function of telomeres — control of cellular aging — was honored with a [Nobel Prize in 2009](#). A previous study showed that regular exercise was associated with longer telomeres ([JW Gen Med Feb 14 2008](#)), and another research group found that shorter telomeres were a potent predictor of cardiovascular events ([JW Gen Med Jan 25 2007](#)). The human studies are observational: They do not prove that regular exercise lengthens your telomeres. But the experimental mouse studies reported here suggest that it could.

— [Anthony L. Komaroff, MD](#)

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