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Our Mission

* Develop and institutionalize programs addressing the grave disparities in education, health, healthcare, and economic development faced by the African community.

* Defend the human and civil rights of African people.

Healthy Connections

JUNE 2010

Anti-Aging Benefits of Exercise

A recent study shows that long term physical activity has an anti-aging effect at the cellular level, suggesting exercise could prevent aging of the cardiovascular system.

Two groups of trained professional athletes were compared with those who were not trained athletes. The blood cells of the individuals with long-term exercise training showed molecular indicators of reduced aging.

Intensive exercise prevented shortening of telomeres, a protective effect against aging of the cardiovascular system, according to research reported in *Circulation: Journal of the American Heart Association*.

Researchers measured the length of telomeres — the DNA that bookends the chromosomes and protects the ends from damage — in blood samples from two groups of professional athletes and two groups who were healthy nonsmokers, but not regular exercisers.

The telomere shortening mechanism limits cells to a fixed number of divisions and can be regarded as a “biological clock.” Gradual shortening of telomeres through cell divisions leads to aging on the cellular level and may limit lifetimes. When the telomeres become critically short the cell undergoes death.

“The most significant finding of this study is that physical exercise of the professional athletes leads to activation of the important enzyme telomerase and stabilizes the telomere,” said Ulrich Laufs, M.D., the study’s lead author and professor of clinical and experimental medicine in the department of internal medicine at Saarland University in Homburg, Germany.

“This is direct evidence of an anti-aging effect of physical exercise. Physical exercise could prevent the aging of the cardiovascular system, reflecting this molecular principle.”

Essentially, the longer telomere of athletes is an efficient telomere. The body’s cells are constantly growing and dividing and eventually dying off, a process controlled by the chromosomes within each cell. These chromosomal “end caps” — which have been likened to the tips of shoelaces, preventing them from fraying — become shorter with each cell division, and when they’re gone, the cell dies. Short telomeres limit the number of cell divisions, Laufs said. In addition, the animal studies of Laufs and colleagues show that the regulation of telomere stabilizing proteins by exercise exerts important cellular functions beyond the regulation of telomere length itself by protecting from cellular deterioration and programmed cell death.

Excerpt from: <http://www.newsroom.heart.org/index.php?s=43&item=901>

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