Abstract

J Aging Res. 2011 Feb 21;2011:790378.

Physical activity and telomere biology: exploring the link with aging-related disease prevention.

Ludlow AT, Roth SM.

Department of Kinesiology, School of Public Health, University of Maryland, College Park, MD 20742-2611, USA.

BACKGROUND: Physical activity is associated with reduced risk of several age-related diseases as well as with increased longevity in both rodents and humans. Though these associations are well established, evidence of the molecular and cellular factors associated with reduced disease risk and increased longevity resulting from physical activity is sparse. A long-standing hypothesis of aging is the telomere hypothesis: as a cell divides, telomeres shorten resulting eventually in replicative senescence and an aged phenotype.

FINDINGS: Several reports have recently associated telomeres and telomere-related proteins to diseases associated with physical inactivity and aging including cardiovascular disease, insulin resistance, and hypertension. Interestingly several reports have also shown that longer telomeres are associated with higher physical activity levels, indicating a potential mechanistic link between physical activity, reduced age-related disease risk, and longevity.

SUMMARY: The primary purpose of this review is to discuss the potential importance of physical activity in telomere biology in the context of inactivity- and age-related diseases. A secondary purpose is to explore potential mechanisms and important avenues for future research in the field of telomeres and diseases associated with physical inactivity and aging.

PMID: 21403893

FREE FULL TEXT

Visit us at www.spectracell.com or call us at 800.227.LABS (5227)

SPECTRACELL LABORATORIES
ADVANCED CLINICAL TESTING