

## Telomeres: The Long & Short of It

Telomeres are biomarkers which control cellular aging. Similar to an aglet of a shoestring, they keep chromosomes and DNA from unraveling. The longer, the better as a rule. Stress and trauma can shorten, while increasing positive affect can lengthen them. We have direct influence over their length through our lifestyle choices.

### Quick Telomere Age Test

(From *The Immortality Edge*, Fossel et al., 2011)

Start with your chronological age and add or subtract from it based on the answers to the following questions:

1. Do you exercise for at least forty-five minutes three or more times a week? If yes, subtract five years.
2. Do you smoke cigarettes? Add ten years.
3. Do you currently drink three or more drinks of alcohol on a daily basis? Add seven years.
4. Do you sleep between seven and nine hours most nights? Subtract five years.
5. If you are male and your waist is less than thirty-six inches, subtract five years. If you are female and your waist is less than thirty-two inches, likewise, subtract five years.
6. Do you take fish oil? If you take 3,000 milligrams a day or more, subtract five years.
7. Generally speaking, are you happy? Subtract seven years.
8. Do you eat fried foods more than twice a week? Add three years. (pp. 17-18).

## Lifestyle Changes May Lengthen Telomeres

A small UCSF pilot study shows for the first time that changes in diet, exercise, stress management and social support can result in longer telomeres, the parts of chromosomes that affect aging.

Here are some lifestyle changes undertaken by study participants:

### 1 DIET



High in whole foods, plant-based protein, fruits, vegetables; Low in fat (10% of calories) and refined carbohydrates

### 2 EXERCISE



Moderate aerobic exercise – walking 30 minutes per day for six days a week

### 3 STRESS MANAGEMENT



Gentle, yoga-based stretching, breathing or meditation for 60 minutes daily

### 4 INCREASED SOCIAL SUPPORT



Weekly support group sessions that included moderate exercise, stress management training and counseling

Image retrieved from

UCSF

<https://www.ucsf.edu/news/2013/09/108886/lifestyle-changes-mav-lengthen-telomeres-measure-cell-ag>

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## Bibliography:

- Fernandez, E. (2013). *Lifestyle Changes May Lengthen Telomeres, A Measure of Cell Aging*. University of California, San Francisco. Retrieved from <https://www.ucsf.edu/news/2013/09/108886/lifestyle-changes-may-lengthen-telomeres-measure-cell-aging>
- Epel, E. (2012). *Emotions Stress and Rate of Telomere Shortening: Are Our Cells Listening to Us?* University of California TV. Retrieved from [https://www.youtube.com/watch?v=Nb\\_zt96UiUY](https://www.youtube.com/watch?v=Nb_zt96UiUY)
- Fossel, Blackburn, & Woyanowski. (2011). *The Immortality Edge: Realize the Secrets of Your Telomeres for a Longer, Healthier Life*. Wiley & Sons, Inc.
- Wolinsky, H. (2011). *Testing Time for Telomeres*. U.S. National Library of Medicine. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3166469/>
- Moskowitz et al., J. (2012). *A Positive Affect Intervention for People Experiencing Health Related Stress*. U.S. National Library of Medicine. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3498769/>