

How fast you'll age is written in the bones, research finds

April 9 2008



Two x-rays used in Dr. Kalichman's research. The hands of a 22-year-old man at top are compared with the hands of a 74-year-old man at bottom. The two men were not related. Credit: AFTAU

Perhaps the aging process can't be stopped. But it can be predicted, and new research from Tel Aviv University indicates that people may live longer and lead healthier lives as a result.

Researchers have developed a new biological marker that represents the age of a body's bones. It reveals that the speed of physical aging is strongly influenced by genetics.

Christened the osseographic score (OSS), this new marker can be used by doctors as a scientific tool for predicting a person's general functioning and lifespan, says Tel Aviv University scientist Dr. Leonid Kalichman, an instructor at The Stanley Steyer School of Health Professions. He is a co-author of the study published in *Biogerontology* and the *American Journal of Human Biology* (2007), which was conducted in partnership with Dr. Ida Malkin and Prof. Eugene Kobylansky, both from the Sackler Faculty of Medicine at Tel Aviv University.

Add Years to Your Life

If a doctor can determine that a person is aging “biologically faster” than he or she should, measures such as vitamin supplements and exercise can help slow down the process, says Dr. Kalichman.

“While different biomarkers such as grey hair, wrinkles or elasticity of the skin can help us estimate a person's biological age, these features are hard to quantify,” he says. But with the new OSS biomarker, and treatment at a younger age, “at age 90 people can function as though they are 30,” says Kalichman.

He predicts that biological aging will be an increasingly hot topic of study in the coming years, especially in the western world where people are living longer than ever before.

Male and Female Bones Tell Different Stories

The Tel Aviv University researchers investigated the bones of about 400 Russian families – 787 men 18 to 89 years old and 723 women 18 to 90 years old. The results of the study indicated that men and women inherit different aging patterns. In men, the genes expressed are more likely to

influence how quickly they will age. For women, the genes are more likely to represent at what age visible changes in the bone will begin to appear.

The results of this new study will join a battery of other tools used by scientists who research aging and ways to fight it. Presently a research fellow at Boston University, Kalichman says, “At the end of the day, the quest of scientists and doctors is to help people function better than their chronological age — the age written on your passport.”

Source: American Friends of Tel Aviv University

Citation: How fast you'll age is written in the bones, research finds (2008, April 9) retrieved 26 April 2024 from <https://medicalxpress.com/news/2008-04-fast-youll-age-written-bones.html>

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