

Mediterranean Diet May Help Slow Aging

Megan Brooks | December 04, 2014

A new analysis suggests yet another potential health benefit of the Mediterranean diet. In the Nurses' Health Study, greater adherence to the Mediterranean diet was associated with greater telomere length, a biomarker of aging.

"The health benefits of greater adherence to the Mediterranean diet — reduction of overall mortality, increased longevity and reduced incidence of chronic diseases, especially major cardiovascular diseases — have been consistently demonstrated," Immaculata De Vivo, MPH, PhD, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts, told *Medscape Medical News*.

"Our results further support the health benefits of adherence to the Mediterranean diet and provide some insight into the underlying physiologic mechanism behind this association. Following a diet closer to the Mediterranean diet can prevent accelerated telomere shortening," she said.

The study was published December 2 in the *British Medical Journal*.

Telomere Protection

Telomeres are repetitive DNA sequences at the ends of chromosomes that progressively shorten with age. Shorter telomeres are associated with shorter life expectancy and greater risk for age-related diseases. Obesity, cigarette smoking, and other lifestyle factors have been linked to shorter telomere length. Oxidative stress and inflammation speed up telomere shortening.

The Mediterranean diet is rich in fruits, vegetables, nuts, legumes, unrefined grains, olive oil, and fish, with a moderate amount of alcohol intake and low intake of dairy products, meat, and poultry.

"Fruits, vegetables, olive oil and nuts — key components of the Mediterranean diet — have well known antioxidant and anti-inflammatory effects that could balance out the 'bad effects' of smoking and obesity," Dr De Vivo commented.

Multiple nested case-control studies have been conducted within the Nurses' Health Study blood subcohort to investigate the association between leukocyte telomere length and cancer, cardiovascular disease, and cognitive function, among others, the researchers write.

The current analysis included data on 4676 healthy middle-aged women from the Nurses' Health Study selected as healthy controls (free of major chronic diseases, including cancer and cardiovascular disease) from nested case-control studies within the overall study. The study has been tracking the health of more than 120,000 US nurses since 1976. The women completed detailed food questionnaires and had a blood test to measure telomere length.

For each, the researchers calculated a diet score ranging from 0 to 9 points, with a higher score representing greater adherence to the Mediterranean diet.

The main outcome was the association between relative telomere lengths in peripheral blood leukocytes measured by quantitative real-time polymerase chain reaction and the Mediterranean diet score.



Dr Immaculata De Vivo

As expected, younger women had longer telomeres ($P < .001$). After adjustment for potentially confounding factors, such as obesity, smoking, and physical activity, greater adherence to the Mediterranean diet was significantly associated with longer telomeres.

According to the researchers, each 1-point increase in diet score corresponded on average to 1.5 fewer years of telomere aging. A 3-point change would correspond to 4.5 fewer years of telomere aging on average. This is similar to the difference between smokers and nonsmokers (4.6 years), active and less active women (4.4 years), and women with high phobic anxiety scores and low phobic anxiety scores (6 years), the researchers say.

None of the individual dietary components was significantly associated with telomere length.

"A future research question should be aimed at determining which components of the Mediterranean diet are driving this association," Dr De Vivo said. "This would allow more insight into the biological mechanism as well as provide a basis for increased public education for informed lifestyle choices." Similar studies in men would also be of interest, she said.

Evidence-Based Diet

In an editorial published with the study, Peter Nilsson, MD, PhD, Lund University, Sweden, says the Mediterranean diet is the "cornerstone of dietary advice in cardiovascular disease prevention, and the fact that it also links with a biomarker of slower ageing is reassuring."

This new study, Dr Nilsson told *Medscape Medical News*, "adds important information" to explain some of the effects of the Prevención Dieta Mediterránea (PREDIMED) study published in the *New England Journal of Medicine* in 2013.

The PREDIMED study, which was carried out in Spain, a Mediterranean country, found that a Mediterranean diet protected against cardiovascular disease in persons at high cardiovascular risk.

The Mediterranean diet, Dr Nilsson said, "is one of the few evidence-based diets. I could guess that the anti-inflammatory and anti-oxidative stress capacity of this diet could contribute to the finding."

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