Abstract

J Hum Nutr Diet. 2016 Aug 22. [Epub ahead of print]

Longitudinal associations between micronutrient consumption and leukocyte telomere length.

Lee JY, Shin C, Baik I.

Department of Foods and Nutrition, College of Natural Sciences, Kookmin University, Seoul, Korea; Department of Internal Medicine, Korea University Ansan Hospital, Ansan-si, Korea.

BACKGROUND: There are few studies on the association between nutrient intake and telomere length, which may reflect cumulative oxidative stress and indicate biological ageing. In the present study, we evaluated longitudinal associations between the consumption of micronutrients, including antioxidant nutrients and B vitamins involved in one-carbon transfer pathways, and leukocyte telomere length (LTL).

METHODS: The study included 1958 middle-aged and older Korean men and women (age range at baseline: 40-69 years) from a population-based cohort. We collected dietary information at baseline using a semiquantitative food frequency questionnaire (June 2001 to January 2003) and assessed the consumption of micronutrients, including vitamins A, B₁, B₂, B₃, B₆, B₉ (folate), C and E, as well as calcium, phosphorus, potassium, iron and zinc. We measured LTL using a real-time polymerase chain reaction at the 10-year follow-up examination (February 2011 to November 2012).

RESULTS: In the multiple regression model adjusted for potential confounders, LTL was positively associated with the consumption of vitamin C (P < 0.05), folate (P = 0.05) and potassium (P = 0.05) in all participants. In the age-stratified analysis, the association between the consumption of vitamin C (P < 0.01), folate (P < 0.05) and potassium (P < 0.05) with LTL was significant only among participants aged <50 years.

CONCLUSIONS: Our findings suggest that the earlier consumption of vitamin C, folate and potassium, which are abundant in fruits and vegetables, can delay biological ageing in middle-aged and older adults.

PMID: 27550625