

November 9, 2007

Printer Friendly

## In this issue

Life Extension Update Exclusive

Higher vitamin D levels linked to reduced telomere shortening

Health Concern

Chronic inflammation

Featured Products

Vitamin D Capsules

C-reactive protein blood test

Life Extension

Check out our new look!

Life Extension Update Exclusive

### Higher vitamin D levels linked to reduced telomere shortening

The November, 2007 issue of the *American Journal of Clinical Nutrition* published an article describing the discovery of British and American researchers of an association between longer telomeres and increased levels of vitamin D. Telomeres are caps on the ends of chromosomes which have been found to shorten with age, as well as with increased oxidative stress and inflammation. The finding suggests that vitamin D may play a role in slowing the onset of age-related diseases.

Dr J. Brent Richards at King's College, London School of Medicine and colleagues studied 2,160 female twins aged 19 to 79 for the current research. Blood samples were analyzed for serum vitamin D levels, C-reactive protein (CRP, a marker of inflammation) and additional factors, and telomere length was measured in the DNA of peripheral white blood cells (leukocytes).

As expected, older participants had shorter telomeres; however, leukocyte telomere length (LTL) was greater among subjects whose levels of vitamin D were high compared to those with low concentrations, a finding which persisted after adjustment for age and other factors. Participants in the top one-third of serum vitamin D levels had telomeres that averaged 107 base pairs longer than those in the lowest third, equivalent to a five year difference in chronologic aging.

Telomere length was also greater in those with lower C-reactive protein levels than in subjects with higher concentrations. When participants who had the highest CRP and lowest vitamin D concentrations were compared with those who had the lowest CRP and highest vitamin D levels, the difference in telomere length was equivalent to 7.6 years of aging.

In a subset analysis of vitamin D supplement users, those who supplemented were also found to have longer telomeres than those who did not supplement with the vitamin.

In their discussion concerning mechanisms of action, the authors note that inflammation and oxidative stress are key determinants in the biology of aging, and that vitamin D decreases mediators of systemic inflammation such as interleukin-2 and tumor necrosis factor-alpha. While habits that increase oxidative stress and inflammation may be difficult to change, they observe that "vitamin D concentrations are easily modifiable through nutritional supplementation or sunshine exposure."

"Although both LTL and serum vitamin D concentrations decrease with age and are thus possible markers of aging in general, we have shown that the positive association between LTL and vitamin D concentrations is independent of age and many other covariates," the authors conclude. "Longitudinal studies or randomized controlled trials of supplementation exploring the effect of vitamin D on LTL will be necessary to unequivocally establish the relation between vitamin D and leukocyte telomere dynamics; but for the moment, our data suggest another potential benefit of vitamin D—on the aging process and age-related disease."

Health Concern

## Inflammation

While some doctors are finally catching on to the fact that elevated C-reactive protein increases heart attack and stroke risk, they still know little about its other dangers. Even fewer practicing physicians understand that pro-inflammatory cytokines are an underlying cause of systemic inflammation that is indicated by excess C-reactive protein in the blood.

It is well established the elevated C-reactive protein, IL-6 and other inflammatory cytokines indicate significantly greater risks of contracting or dying from specific diseases (heart attack, stroke, Alzheimer's disease, etc.).

A group of doctors wanted to ascertain if C-reactive protein and IL-6 could also predict the risks of all-cause mortality. In a study published in the American Journal of Medicine, a sample of 1,293 healthy elderly people were followed for a period of 4.6 years (Harris et al. 1999). Higher IL-6 levels were associated with a twofold greater risk of death. Higher C-reactive protein was also associated with a greater risk of death, but to a lesser extent than elevated IL-6. Subjects with both high C-reactive protein and IL-6 were 2.6 times more likely to die during follow up than those with low levels of both of these measurements of inflammation.

<http://www.lef.org/protocols/prtcl-146.shtml>

### Featured Products

#### Vitamin D Capsules

The two most important forms of vitamin D are cholecalciferol (D3), which is derived from our own cholesterol and ergocalciferol (D2), a plant analogue derived from the diet. The cholecalciferol supplied by the Life Extension Buyers Club is synthetic, but its form is identical to that which is derived from cholesterol and synthesized by sunlight on the skin. Cholecalciferol Vitamin D is essential for bone growth and maintenance of bone density.



<http://www.lef.org/newshop/items/item00251.html>

#### C-Reactive Protein Blood Test

This test is used to assess risk of cardiovascular and peripheral vascular disease.

<http://www.lef.org/newshop/items/itemLC120766.html>



## Life Extension

### Check out our new look

If you haven't noticed, Life Extension's website has a new look! You'll find your favorite features, such as Life Extension Daily News, What's Hot, Life Extension magazine and more, with an updated appearance, eye-catching graphics, and improved ease of use. Additionally, RSS feed is now available for Life Extension Daily News to make it easier for you to stay up to date on the latest reports from news media around the world.

The new Life Extension website features the following changes:

Styles:

- Style sheets have changed to incorporate the latest features and make the site faster to load while also more adaptable to your browser's preferences.

- Fonts are now totally flexible, adapting to each user's browser preferences.

#### Home Page:

- Latest Features: Combined into one dynamic module, Life Extension's Latest Features is the highlighted area for the new Magazine, What's Hot articles, and latest Products.

- Health Concerns: Exposing the top ten most-navigated Health Concerns, this area introduces Life Extension's Disease Prevention and Treatment book. If you wish to browse more Health Concerns, they are just a click away.

- Daily News: Daily News articles are displayed in a larger area for your reading pleasure

- Life Extension Products: Expanded in this new design, the Products module introduces a visitor to Life Extension's commitment to quality and innovation, and introduces the top categories of their product line.

- Linked Websites: Featured at the bottom of the page are Life Extension's partner websites and companies, with their respective descriptions and a link to their websites.

#### Secondary Pages:

- Products: You can find your product category conveniently grouped into six major areas – Antiaging & Longevity, Health & Well Being, Diet & Energy, Vitamins & Minerals, Herbal & Phyto Extracts, and Beauty & Personal Care.

- Health Concerns: Navigating the many protocols at Life Extension is easier than ever in this categorized page. Health Concerns are now broken into 18 major groups.

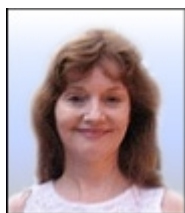
#### Content Pages:

- All content pages have been given a facelift. They now feature quick links on the right for navigation between related pages, and a top navigation featuring Printer Friendly, Save as PDF, Email this Page, among other functions.

Visit [www.lef.org](http://www.lef.org) and tell us what you think!

If you have questions or comments concerning this issue or past issues of *Life Extension Update*, send them to [ddye@lifeextension.com](mailto:ddye@lifeextension.com) or call 954 202 7716.

For longer life,



Dayna Dye  
Editor, Life Extension Update  
[ddye@lifeextension.com](mailto:ddye@lifeextension.com)  
954 766 8433 extension 7716  
[www.lef.org](http://www.lef.org)

Sign up for Life Extension Update at <http://mycart.lef.org/Memberships/NewsSubscription.aspx>

Help spread the good news about living longer and healthier. Forward this email to a friend!

View previous issues of Life Extension Update in the Newsletter Archive.

All Contents Copyright © 1995-2009 Life Extension Foundation All rights reserved.

**LifeExtension**<sup>®</sup>

These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease. The information provided on this site is for informational purposes only and is not intended as a substitute for advice from your physician or other health care professional or any information contained on or in any product label or packaging. You should

not use the information on this site for diagnosis or treatment of any health problem or for prescription of any medication or other treatment. You should consult with a healthcare professional before starting any diet, exercise or supplementation program, before taking any medication, or if you have or suspect you might have a health problem. You should not stop taking any medication without first consulting your physician.