

# Better vitamin D status could mean better quality of life for seniors

April 25 2010

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According to legend, it was The Fountain of Youth that the famed Spanish explorer Ponce de Leon was seeking when he landed on the Floridian coast in 1513. It has long been said that he who drinks from the Fountain will have his youth restored. Without a doubt, the quest for eternal youth is as ancient as any pursuit. However, although we are now living longer than ever, there is now growing concern that quantity of years is not nearly as important as quality of those years. Indeed, as we experience the many joys of living longer, we also must deal with myriad consequences accompanying this aging trend. For instance, osteoporosis, arthritis, and other serious and often painful bone and joint diseases are much more common as we get older. And, not surprisingly, seniors often struggle daily with what was once the simple task of getting around. Hence, the obvious question in today's society concerning our longevity is "What choices can we make to help ease these inconveniences of aging?"

One area of particular interest is the role that diet plays in keeping bones and muscles strong from infancy to old age. For instance, a limited number of studies point to the possibility that optimal intake of vitamin D (the "sunshine" vitamin) might help keep our muscles strong and preserve physical function. Although there are only few longitudinal studies investigating this relationship, their findings have been mixed. To help understand this diet-health association, Dr. Denise Houston from the Sticht Center on Aging at Wake Forest University and her collaborators studied the relationship between vitamin D status and physical function in a group of relatively healthy seniors living in

Memphis, TN and Pittsburgh, PA. Their results will be presented on Sunday, April 25 as part of the scientific program of the American Society for Nutrition, composed of the world's leading nutrition researchers, at the Experimental Biology 2010 meeting in Anaheim.

This study was part of the Health, Aging, and Body Composition (Health ABC) study initially designed to assess the associations among body composition, long-term health conditions, and mobility in older adults. For Houston's segment of the investigation, she studied 2788 seniors (mean age: ~75 years) for 4 years. At the beginning of the study, they assessed vitamin D status by analyzing each person's blood for 25-hydroxyvitamin D, a precursor for activated vitamin D. At baseline and then 2 and 4 years later, the research team then determined whether circulating 25-hydroxyvitamin D was related to the participants' physical function. Specifically, they looked at how quickly each participant could walk a short distance (6 meters) and rise from a chair five times as well as maintain his or her balance in progressively more challenging positions. Each participant was also put through a battery of tests assessing endurance and strength.

When the results were tabulated, participants with the highest levels of 25-hydroxyvitamin D had better physical function. And, although physical function declined over the course of the study, it remained significantly higher among those with the highest vitamin D levels at the beginning of the study compared to those with the lowest vitamin D levels. The scientists were not surprised to learn that, in general, vitamin D consumption was very low in this group of otherwise healthy seniors. In fact, more than 90% of them consumed less vitamin D than currently recommended, and many were relying on dietary supplements.

The good news: higher circulating 25-hydroxyvitamin D is related to better physical function in seniors. But it's impossible to tell from this type of research whether increasing vitamin D intake will actually lead to

stronger muscles and preserve physical function. This is partly due to the fact that our bodies can make vitamin D if they get enough sunlight. So, it is possible that the participants with better physical function had higher vitamin D status simply because they were able to go outside more often. Indeed, the ominous "chicken-or-the-egg" question can only be answered by carefully controlled clinical intervention trials.

Nonetheless, it is possible that getting more vitamin D from foods (like fortified milk and oily fish) or supplements will help maintain youth and vitality as we enjoy longer lifespans. As Houston points out: "Current dietary recommendations are based primarily on vitamin D's effects on bone health. It is possible that higher amounts of vitamin D are needed for the preservation of muscle strength and physical function as well as other health conditions. However, clinical trials are needed to definitively determine whether increasing 25-hydroxyvitamin D concentrations through diet or supplements has an effect on these non-traditional outcomes."

Will vitamin D research lead us to The Fountain of Youth? Probably not. But paying attention to how much [vitamin D](#) we get is likely important at every age and will help enhance the "quality" component of life as we enter our senior years.

Provided by Federation of American Societies for Experimental Biology

Citation: Better vitamin D status could mean better quality of life for seniors (2010, April 25) retrieved 23 April 2024 from

<https://medicalxpress.com/news/2010-04-vitamin-d-status-quality-life.html>

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