

A recent study concludes that higher vitamin E intakes appear to be associated with increased bone mineral density and decreased fracture risk.

## Low serum vitamin E levels are associated with higher risk of bone fracture

Recent studies have indicated that oxidative stress may be a contributing factor in the development of osteoporosis and fractures. A new study investigated the potential association between serum alpha-tocopherol (Vitamin E) concentrations and the risk of hip fractures.

The study, published online in the journal *Osteoporosis International*, included 21,774 Norwegian men and women aged 65-79 that were part of a community-based health study. Serum Vitamin E concentrations were measured at the beginning of the study and subjects were followed for 11 years.

During the course of the follow up, 1,168 hip fractures were reported in the men and women. After adjusting for smoking, month of blood sample, BMI, education, physical inactivity, self-rated health, and serum 25-hydroxyvitamin D (25(OH)D), serum vitamin E levels showed a linear inverse association with hip fracture risk. Among subjects in the lowest quartile (25%) of serum Vitamin E, the risk of hip fracture was 51% higher than those whose levels were among the top 25%.

In this population, low serum vitamin E concentrations were associated with an increased risk of hip fractures. These results confirm the findings of two recent cohort studies which also found an increased risk of bone fracture among older adults with low serum vitamin E concentrations. The researchers suggest that in addition to its antioxidant effect, vitamin E could have a direct role in bone remodeling. However, further research is needed to clarify the role of vitamin E in maintaining bone health.

Holvik K et al. Low serum concentrations of alpha-tocopherol are associated with increased risk of hip fracture. A NOREPOS study. *Osteoporos Int*. 2014 Jul 26.

Michaëlsson K et al. Intake and serum concentrations of  $\alpha$ -tocopherol in relation to fractures in elderly women and men: 2 cohort studies. *Am J Clin Nutr*. 2014 Jan;99(1):107-14.