

Low and high vitamin D levels in older women associated with increased likelihood of frailty

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A recent study accepted for publication in *The Endocrine Society's Journal of Clinical Endocrinology & Metabolism (JCEM)* found that lower and higher vitamin D levels were associated with an increased likelihood of frailty in older women. Women with vitamin D levels between 20.0 and 29.9 ng/ml were at the lowest risk of frailty.

Vitamin D deficiency and frailty are common with aging. Dimensions of frailty, including weakness and slowness are potential outcomes of [vitamin D](#) deficiency and many experts have recommended measuring vitamin D levels in older adults and prescribing vitamin D supplementation if levels are less than 30 ng/ml to prevent adverse health outcomes. This new study however found a U-shaped relationship between vitamin D levels and frailty; older women with vitamin D levels higher than 30 ng/ml and those with levels lower than 20 ng/ml were more likely to be frail.

"Vitamin D supplementation has grown in popularity, yet the association between vitamin D status and risk of adverse health outcomes in older adults is uncertain," said Kristine Ensrud, MD, professor of medicine and epidemiology, Minneapolis VA Medical Center and the University of Minnesota and lead author of the study. "Our study did not find that higher vitamin D status was associated with lower subsequent risks of frailty or death. In fact, higher levels of vitamin D were associated with increased likelihood of frailty."

In this study, researchers measured vitamin D levels and assessed frailty status in a cohort of 6,307 women aged 69 and older. To determine whether lower vitamin D levels were associated with an increased risk of greater frailty status at a later date, 4,551 women classified as non-frail at baseline had frailty status reassessed an average of 4.5 years later. They found that older women with vitamin D levels less than 20 ng/ml and more than 30 ng/ml had higher odds of frailty at baseline. Lower vitamin D levels among non-frail women at baseline were associated with an increased risk of frailty or death at follow-up.

"Evidence is lacking to support use of vitamin D supplementation for prevention of frailty and other outcomes including cancer or all-cause mortality," said Ensrud. "Our results indicate that well-designed large randomized trials of sufficient duration are needed to accurately quantify health effects of vitamin D supplementation, including whether or not supplementation reduces the incidence or progression of frailty in [older adults](#)."

More information: The article, "Circulating 25-hydroxyvitamin D Levels and Frailty Status in Older Women," appears in the December 2010 issue of *JCEM*.

Provided by The Endocrine Society

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