

# Alone, low vitamin D does not cause osteoporotic fractures

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(HealthDay)—While low blood levels of vitamin D are associated with

osteoporotic fractures, the link is not causative, according to the results of an analysis published online April 7 in *Clinical Chemistry*.

Yunus Çolak, M.D., Ph.D., from Herlev and Gentofte Hospital and Copenhagen University Hospital in Denmark, and colleagues used Mendelian randomization to conduct a large-scale analysis of low vitamin D levels and [osteoporotic fractures](#) between 1981 and 2017. Participants included 116,335 randomly chosen 20- to 100-year-old white Danish people who underwent genetic and 25-hydroxyvitamin D testing as part of the Copenhagen City Heart and Copenhagen General Population Studies.

The researchers identified 17,820 total fractures within their dataset. Compared with patients with vitamin D levels  $\geq 50$  nmol/L, total fracture hazard ratios (95 percent confidence intervals) for people with vitamin D levels of less than 12.5, 12.5 to 24.9, and 25 to 49.9 nmol/L, were 1.39 (1.21 to 1.60), 1.19 (1.10 to 1.28), and 1.03 (0.97 to 1.09), respectively. Corresponding hazard ratios for osteoporotic fractures were 1.49 (1.25 to 1.77), 1.25 (1.13 to 1.37), and 1.07 (1.00 to 1.15), while the corresponding hazard ratios for fractures of the hip or femur were 1.41 (1.09 to 1.81), 1.37 (1.18 to 1.57), and 1.09 (0.98 to 1.22). Notably, a [genetic analysis](#) indicated that every 1 increase in vitamin D allele score had a corresponding 3 percent lower vitamin D concentration and hazard ratios of 0.99 (0.98 to 1.00) for total fractures, 0.99 (0.97 to 1.00) for osteoporotic fractures, and 0.98 (0.95 to 1.00) for fractures of the hip or femur.

"Low plasma 25-hydroxyvitamin D concentrations were associated with risk of osteoporotic fractures," the authors write. "However, Mendelian randomization analysis provided no evidence supporting a causal role for [vitamin D](#) in the risk for osteoporotic [fractures](#)."

One author disclosed financial ties to Boehringer Ingelheim,

AstraZeneca, and Sanofi Genzyme.

**More information:** [Abstract/Full Text](#)

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