

Neither vitamin D nor exercise affected fall rates among older women in Finland

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In a clinical trial that explored the effectiveness of exercise training and vitamin D supplementation for reducing falls in older women, neither intervention affected the overall rate of falls, according to an article published online by *JAMA Internal Medicine*.

Falls are the leading cause of unintentional injuries and fractures in [older adults](#). However, reviews of clinical trials on the role of vitamin D in reducing falls and fractures in community-dwelling older adults and in improving physical functioning have been inconclusive, according to the study background.

Kirsti Uusi-Rasi, Ph.D., of the UKK Institute for Health Promotion Research, Tampere, Finland, and coauthors conducted a two-year [randomized clinical trial](#) that included 409 home-dwelling women in Finland (ages 70 to 80). The women were divided into four study groups and their treatments were either: placebo without [exercise](#), vitamin D (800 IU/d) without exercise, placebo and exercise, or vitamin D and exercise. Exercise consisted of supervised group training classes and the focus included balance, weights, agility and strengthening.

Study results indicate that neither vitamin D nor exercise reduced overall falls. Fall rates per 100 person-years were 118.2 (placebo without exercise), 132.1 (vitamin D without exercise), 120.7 (placebo and exercise) and 113.1 (vitamin D and exercise). However, the study found the rate of injurious falls (a secondary outcome) was cut by more than half among exercisers with or without vitamin D.

In other outcomes, vitamin D did help to maintain bone density in the femoral neck (a segment of the femur most likely to break with osteoporosis) and increased tibial trabecular density in the shinbone. Only exercise improved muscle strength and balance, while vitamin D did not enhance the effects of exercise on physical functioning.

"Given the fact that fall risk is multifactorial, exercise may be the most effective and feasible strategy for preventing injurious falls in community-dwelling older adults replete with vitamin D. Herein, vitamin D increased bone density slightly, and exercise improved physical functioning. While neither treatment reduced the rate of falling, injurious falls more than halved among exercisers with or without vitamin D. Our participants were vitamin D replete, with sufficient calcium intake. Future research is needed to elaborate the role of vitamin D to enhance [physical functioning](#) in elderly women," the study concludes.

In a related commentary, Erin S. LeBlanc, M.D., M.P.H., of Kaiser Permanente Northwest, and Roger Chou, M.D., of Oregon Health & Science University, both in Portland, Ore., write: "This trial reminds us that although vitamin D is known as the sunshine vitamin and higher levels are associated with better health in observational studies, more research is needed to understand the effectiveness of vitamin D supplementation on clinical outcomes. In particular, this trial (like many before it) was performed among white European women and may not apply to the diverse U.S. population."

"How should physicians fit this trial into the current USPSTF [U.S. Preventive Services Task Force] recommendation that those at risk of falling should take vitamins D? Given its low cost and low risk, vitamin D should remain in the physician's armamentarium for fall prevention, at least until more data are available. Taking a person's vitamin D status into account may be a useful clinical consideration. As more high-quality

RCTs [randomized [clinical trials](#)] release their findings, we need to be ready to reevaluate the role that vitamin D has in maintaining health. However, the RCT by Uusi-Rasi and colleagues reminds us that the strongest and most consistent evidence for prevention of serious [falls](#) is exercise, which has multiple other health benefits," they conclude.

More information: *JAMA Intern Med.* Published online March 23, 2015. [DOI: 10.1001/jamainternmed.2015.0225](https://doi.org/10.1001/jamainternmed.2015.0225)
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