

Calcium plus vitamin D supplementation does not reduce joint symptoms in postmenopausal women, study finds

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A team of investigators systematically analyzed the effect of calcium and vitamin D supplementation on joint symptoms in a rigorous and controlled study of postmenopausal women. They found that supplementation did not reduce the severity of joint symptoms reported by the participants. Their results are published in the *Journal of the Academy of Nutrition and Dietetics*.

The influence of low calcium and vitamin D deficiency on joint symptoms has been studied with mixed results. Only some [observational studies](#) have associated vitamin D with [knee osteoarthritis](#) and results from full-scale [randomized trials](#) have been sparse. "In the current study, we addressed for the first time in a full-scale, randomized clinical trial setting, the clinically relevant question of whether [postmenopausal women](#) using calcium and vitamin D supplements in currently recommended dosage would experience any favorable effect on [joint pain](#) or swelling, common symptoms in postmenopausal women," says lead investigator Rowan T. Chlebowski, MD, PhD, Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center in Torrance, California.

Using data from the Women's Health Initiative (WHI) calcium plus vitamin D supplementation trial, researchers identified a subgroup of 1,911 postmenopausal women for the current study, who had been randomized to receive calcium carbonate with vitamin D3 daily or

placebo and had undergone serial joint symptom assessment. Responses to a questionnaire provided qualitative information on joint pain and joint swelling before entry and two years after randomization.

Between the daily supplement use and placebo groups, joint pain and swelling at baseline entry was comparable, at more than 70 percent. After two years, analysis revealed no statistically significant difference for the frequency or severity of joint pain or swelling.

The research team also evaluated data to determine the potential for interaction with age, BMI ([body mass index](#)), physical activity, non-protocol calcium and vitamin D supplement use, race/ethnicity, and hormone therapy. Investigators found no interaction with age, BMI, race/ethnicity, or physical activity. No significant interaction was evident with non-protocol vitamin D supplement use at entry. However, participants using non-protocol calcium supplements at entry reported less joint pain compared with those in the placebo group. The influence of calcium and vitamin D supplementation individually on joint symptoms was not determined because both were provided combined in a single pill in this trial.

Dr. Chlebowski concludes, "Joint symptoms are relatively common in postmenopausal women. However, daily supplementation with 1,000 mg of [calcium carbonate](#) and 400 IU of vitamin D3 in a randomized, placebo-controlled clinical trial setting did not reduce the self-reported frequency or severity of joint symptoms."

Dr. Chlebowski and his team add that these findings do not speak against current recommendations for vitamin D intakes for bone health and fracture risk reduction.

More information: Chlebowski, R. et al. Calcium Plus Vitamin D Supplementation and Joint Symptoms in Postmenopausal Women in the

Women's Health Initiative Randomized Trial, *Journal of the Academy of Nutrition and Dietetics*. [DOI: 10.1016/j.jand.2013.06.007](https://doi.org/10.1016/j.jand.2013.06.007)

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