

# Vitamin D can affect pain, movement in obese osteoarthritis patients

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Got milk? If you are overweight and have osteoarthritis, you may want to bone up on your dairy products that have vitamin D. According to a University of Florida study, higher levels of vitamin D may decrease pain and improve function in obese individuals with osteoarthritis.

Findings published in the January issue of *The Clinical Journal of Pain* indicate that [obese individuals](#) who suffer from osteoarthritis and have adequate [vitamin D](#) levels could walk, balance and rise from sitting to standing better than obese participants with insufficient vitamin D levels. The findings suggest an association between obesity and vitamin D status for tasks such as standing from a seated position.

"Adequate vitamin D may be significant to improving osteoarthritis [pain](#) because it affects bone quality and protects cell function to help reduce inflammation. Vitamin D maintains calcium and phosphate concentration levels to keep bones strong," said lead author Toni L. Glover, an assistant professor in the UF College of Nursing, part of UF Health. "Increased pain due to osteoarthritis could limit physical activity, including outdoor activity, which would lead to both decreased vitamin D levels and increased obesity."

Osteoarthritis is the most common form of arthritis, affecting millions of people worldwide. It occurs when the protective cartilage on the ends of bones wears down over time, causing pain, stiffness and loss of joint movement.

The researchers analyzed blood samples for vitamin D levels from a racially diverse group of 256 middle-aged and older adults. Participants also provided a self-report of knee osteoarthritis pain and completed functional performance tasks such as balance, walking and rising from sitting to standing. This study was part of a larger project that studies racial and ethnic differences in pain in individuals with osteoarthritis. Among the 126 obese participants, 68 were vitamin D-deficient while only 29 of the 130 non-obese participants were deficient, suggesting obesity is significantly associated with clinically relevant vitamin D deficiency.

Obesity is associated with vitamin D deficiency, knee [osteoarthritis](#) pain and poor functional performance. Vitamin D is stored in the liver and human fat cells, and previous research has shown that the larger fat amount in obese people can cause vitamin D to be stored instead of circulated in the body.

The Institute of Medicine recommends that adults ages 18-70 get 600 international units of vitamin D per day and adults over 71 get at least 800 international units of vitamin D per day. For context, an 8-ounce glass of fortified milk contains about 100 international units of calcium. Foods rich in vitamin D include salmon, tuna, sardines, shrimp, mushrooms, egg yolks and foods fortified with vitamin D, such as milk and some cereals, yogurts and orange juices. The body also produces vitamin D through sun exposure, although it can be hard to get enough from the sun alone from the winter sun in some climates and sunscreens block the vitamin's production.

"Vitamin D is inexpensive, available over-the-counter and toxicity is fairly rare," Glover said. Older obese patients with chronic pain should discuss their vitamin D status with their primary care provider. If it's low, take a supplement and get judicious sun exposure."

Provided by University of Florida

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