

A new study in patients with knee osteoarthritis indicates that insufficient vitamin D serum levels may be related to an increased risk of progressive knee osteoarthritis.

Low vitamin D levels are related to progression of knee osteoarthritis

Osteoarthritis (OA) is a degenerative joint disease that mainly affects cartilage, causing functional limitation and disability particularly in the elderly. It is estimated that over 27 million individuals over the age of 65 suffer from osteoarthritis, which most commonly affects the knee. Vitamin D plays many biological and functional roles in joint health, so vitamin D status may play a role in the progression of knee osteoarthritis.

In a new study published online in the *Journal of Nutrition*, researchers investigated whether serum vitamin D and parathyroid hormone (PTH) concentrations might predict the progression of knee OA. PTH is responsible for regulating the metabolism of vitamin D.

The study included 418 participants enrolled in the Osteoarthritis Initiative who had at least one knee with diagnosed osteoarthritis. Serum vitamin D and PTH were measured at the 30 or 36 month visit of the study, and progression of OA was defined as an increase in the joint space narrowing (JSN) score between the 2 and 4 year study visits.

The average serum vitamin D level of the participants was 26 ng/ml, while 16% of this population had levels below 15 ng/ml. Between the beginning of the study and follow-up visits, 14% of the subjects experienced joint space narrowing (increased JSN score). Subjects with a low vitamin D level (< 15 ng/ml) had twice the risk of elevated knee OA progression than the participants with vitamin D levels > 15 ng/ml. Although a high serum PTH itself was not associated with a significant increase in JSN score, individuals with both low vitamin D and high PTH (> 73 pg/ml) had a greater than 3 fold increased risk of OA progression.

The results of the present study suggest that individuals deficient in vitamin D have greater risk of osteoarthritis progression than those with normal vitamin D levels.

Fang Fang Zhang et al. Vitamin D Deficiency Is Associated with Progression of Knee Osteoarthritis. October 1, 2014, doi: 10.3945/jn.114.193227.