

Dr. Koeckhoven, *et al* reply

To the Editor:

We highly appreciate the letter of Tufan, *et al*¹, in which they showed their interest in our manuscript “The Association between Serum 25-hydroxy Vitamin D Level and Upper Leg Strength in Patients with Knee Osteoarthritis: Results of the Amsterdam Osteoarthritis Cohort”². Tufan, *et al* suggested that the assessment of 25-hydroxy Vitamin D [25(OH)D] should be done along with parathyroid hormone (PTH) levels to better define subjects with true Vitamin D deficiency.

In our study, we investigated the relationship between serum 25(OH)D level and upper leg muscle strength in a large cohort of patients with knee osteoarthritis (OA) in the Amsterdam Osteoarthritis cohort using the recommended definition of Vitamin D deficiency (< 50 nmol/l = 20 ng/ml)³. Previously, low 25(OH)D and elevated PTH levels were found to be independent determinants of muscle weakness⁴.

We agree with Tufan, *et al* that individuals with a serum 25(OH)D level < 10 ng/ml are more likely to have clinical signs and symptoms, such as muscle weakness and widespread pain, than individuals with serum levels between 10 ng/ml and 20 ng/ml. We also agree that these patients more often have an elevated serum PTH level, and in addition to that, more often have elevated bone resorption markers⁵. As a consequence, the relationship between serum Vitamin D levels and muscle weakness may be stronger in this (small) subgroup of individuals with very low 25(OH)D and high PTH levels. Because we did not measure PTH levels in our cohort of patients with knee OA, we are unable to support this assumption with data. Further research in the subgroup of patients with knee OA with a very low 25(OH)D level along with a high PTH level is recommended, in which the independent effects of 25(OH)D level and PTH level on muscle weakness should also be determined.

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