In the recent publication by Hightower et al. in the Journal of the American College of Nutrition (1), the exposures of vitamin D and magnesium deficiencies were combined for evaluation in a retrospective clinical study. But, because blood analysis of magnesium does not reflect magnesium stores in the human body, the clinical sign of myofascial pain (tender trigger points) was used as a proxy for magnesium deficiency. The study concluded that having a serum 25-hydroxyvitamin D (25(OH)D) less than 30 ng/mL or myofascial pain, increased the risk for cancer, colon polyps and tendon rupture; and the risk was further increased with having both of these exposures. These 3 conditions were chosen for analysis because they were well documented in the medical record, as well as common in the population.

Vitamin D and magnesium research have continued to parallel through time. Very few scientific papers have combined these two important nutritional building blocks under one study, even though they are intimately associated. The hydroxylase enzymes that are involved in making vitamin D in the human body, as well as the vitamin D carrier protein and receptor, require magnesium as a co-factor. Therefore, magnesium deficiency can adversely affect vitamin D levels, and possibly, its function in the body (2-14).

Myofascial pain has been associated with low vitamin D levels as well as low magnesium. But, it is magnesium supplementation that has efficacy in resolving this type of pain, though it takes months to do so (15-22). Many individuals suffer from either latent or active pain, and often fluctuate between both. This increases the likelihood of using pain medications, to include over-the-counter remedies, opiate, benzodiazepines, and neuroleptics. Myofascial pain has also been correlated with increased risk of cancer, such as breast, colon, prostate and lung. And, the pain often increases during chemotherapy treatment, as chemotherapy depletes magnesium in the body (23-27).

The manuscript further discusses the causes of vitamin D and magnesium deficiencies and brings to the forefront the contribution water gives for magnesium intake. It also identifies myofascial pain as a clinical sign of magnesium deficiency. The finding that myofascial pain and vitamin D deficiency were associated with cancer, colon polyps and tendon rupture may prove important for preventive medicine. Whether optimizing vitamin D to greater than 50 ng/mL and magnesium to the point of no trigger point tenderness will reduce disease needs further investigation. The manuscript raises many questions and will hopefully inspire more research.

REFERENCES


32. http://apps.who.int/iris/bitstream/10665/43836/1/9789241563550_eng.pdf?uaD1


