

[IMAGE]

Rethinking Calcium for Bone Health?

By David Seaman, DC, MS, DABCN

For decades, we – and especially women – have been conditioned to think a high level of calcium intake is required for maintaining bone health as we age. The mantra is crystal clear: "Calcium equals bone health," which translates into, "Consume dairy and take calcium supplements to prevent osteoporosis and promote bone health." But is this actually misguided advice?

In 2004, I wrote an article that focused on important non-calcium intake factors that influence bone health, including dietary acidity, essential fatty acids and magnesium.¹ It was clear even then: Consumption of alkalizing vegetation (vegetables, fruits, roots / tubers) positively correlated with bone mineral density, but this was *not* the case for dairy intake, despite the fact it was / continues to be touted as being beneficial for bone health due to its calcium content.

However, despite the availability of this information, the message continues to be drowned out by the ongoing calcium propaganda, which has been dominant for decades. I personally never bought into the propaganda that women, in particular, should supplement with 1,000-1,500 mg of calcium per day for three main reasons:

- Bone loss is promoted by diet-induced chronic inflammation.¹
- We cannot consume 1,000-1,500 mg of calcium by diet alone, which means such amounts are supraphysiologic and not something the human body is accustomed to.
- The calcium-magnesium balance in whole foods is close to a 1:1 ratio, which means high-dose calcium supplementation leads to abnormally high cal:mag ratios.

For at least the past two decades, my perception has been that if calcium is to be supplemented, it should be no more than a 1:1 ratio with magnesium to match the balance found in food. It also has been my opinion that we may actually not need to supplement with calcium and should instead focus on magnesium as the key mineral supplement, along with eating an anti-inflammatory (alkaline) diet.¹⁻³

Recent Research Questions Benefits for Bone Health

In 2015, three published papers focused on the ineffectiveness and potential problems with calcium supplementation.⁴⁻⁶ Two appeared in the *British Medical Journal*,⁴⁻⁵ demonstrating dietary and supplemental calcium had no significant effect on bone density and no preventive effect against bone fractures. Consider the authors' conclusion:

"Dietary calcium intake is not associated with risk of fracture, and there is no clinical trial evidence that increasing calcium intake from dietary sources prevents fractures. Evidence that calcium supplements prevent fractures is weak and inconsistent."

The third paper, published in *JAMA Ophthalmology*, examined the relationship between calcium supplementation and the expression of age-related macular degeneration (AMD). The average age of subjects with AMD was 67 years. Subjects who reported supplementing with more than 800 mg of calcium per day *were more likely* to develop AMD compared to subjects who did not report supplementing with calcium. There was a stronger association with AMD expression in 67-year-olds compared to 55-year-olds, and the impression is that a longer time span of calcium supplementation may be the reason.⁶

Getting Practical: What Should We Do With This Information?

My overall impression is that calcium should be supplemented in no more than a 1:1 ratio with magnesium. It may even be appropriate to supplement with more magnesium than calcium. Patients also should be educated that anti-inflammatory foods such as vegetables, fruits, and roots/tubers are alkaline and have been associated with maintaining bone mineral density. Supplementation with vitamin D and fish oil also should be considered.

Editor's Note: Always talk to your doctor before taking any dietary supplement, particularly if you have a pre-existing health condition and/or are taking medication.

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