

The role of dairy in maintaining adult bone and skeletal muscle health

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Understanding that diets are often built around food groups rather than specific nutrients, researchers from Switzerland, France, and North America decided to examine interactions between four nutrients found in dairy products and their role in preserving bone and skeletal muscle. Their Open Access article with these findings, "Dairy in Adulthood: From Foods to Nutrient Interactions on Bone and Skeletal Muscle Health," is now available in the *Journal of the American College of Nutrition*, the Official Publication of the American College of Nutrition and a publication from Routledge.

Calcium (Ca), inorganic phosphate (Pi), vitamin D, and protein are [nutrients](#) that impact bone and skeletal muscle integrity. Deficiency in the supply of these nutrients increases with aging. Dairy foods are rich in Ca, Pi, and proteins and in many countries are fortified with vitamin D. Dairy foods are important sources of these nutrients and go a long way to meeting the recommendations, which increase with aging. This review emphasizes the interactions between these 4 nutrients, which, along with physical activity, act through cellular and physiological pathways favoring the maintenance of both bone and [skeletal muscle](#) structure and function.

While bone health is often associated with calcium alone, Calcium's interactions with inorganic phosphate, vitamin D, and protein are important components of beneficial dairy consumption. Combined vitamin D and calcium supplementation has been shown to reduce the incidence of hip and other non-vertebral fractures among older

populations, with some studies suggesting that vitamin D actually leads to lower rates of falling in subjects. Dietary protein, while often associated solely with muscle recovery, also promotes bone formation by stimulating both Ca and Pi intestinal absorption and the production of a bone growth factor. And while vitamin D deficiency is associated with muscle weakness, vitamin D and protein supplementation are required together to improve strength.

Combining the four above-mentioned nutrients with physical activity decreases the likelihood of [bone](#) and muscle degeneration-related injury in older adults. Dairy products are a convenient way to work them into a diet, as they contain Ca, Pi, and protein at levels comparable to recommended intakes, and are fortified with [vitamin D](#).

More information: "Dairy in Adulthood: From Foods to Nutrient Interactions on Bone and Skeletal Muscle Health" Jean-Philippe Bonjour MD, Marius Kraenzlin MD, Régis Levasseur MD, PhD, Michelle Warren MD & Susan Whiting PhD. *J Am Coll Nutr.* 2013;32(4):251-63. [DOI: 10.1080/07315724.2013.816604](https://doi.org/10.1080/07315724.2013.816604).

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