

Egg Nutrition Center



Protein Research

Heaney RP, Layman DK. Amount and type of protein influences bone health. *Am J Clin Nutr* 2008;87:1567S–70S.

Many factors influence bone mass. Protein has been identified as being both detrimental and beneficial to bone health, depending on a variety of factors, including the level of protein in the diet, the protein source, calcium intake, weight loss, and the acid/base balance of the diet. This review aims to briefly describe these factors and their relation to bone health. Loss of bone mass (osteopenia) and loss of muscle mass (sarcopenia) that occur with age are closely related. Factors that affect muscle anabolism, including protein intake, also affect bone mass. Changes in bone mass, muscle mass, and strength track together over the life span. Bone health is a multifactorial musculoskeletal issue. Calcium and protein intake interact constructively to affect bone health. Intakes of both calcium and protein must be adequate to fully realize the benefit of each nutrient on bone. Optimal protein intake for bone health is likely higher than current recommended intakes, particularly in the elderly. Concerns about dietary protein increasing urinary calcium appear to be offset by increases in absorption. Likewise, concerns about the impact of protein on acid production appear to be minor compared with the alkalinizing effects of fruits and vegetables. Perhaps more concern should be focused on increasing fruit and vegetable intake rather than reducing protein sources. The issue for public health professionals is whether recommended protein intakes should be increased, given the prevalence of osteoporosis and sarcopenia.