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Does a high dietary acid content cause bone loss, and can bone loss be prevented with an alkaline diet?

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A popular concept in nutrition and lay literature is that of the role of a diet high in acid or protein in the pathogenesis of osteoporosis. A diet rich in fruit and vegetable intake is thought to enhance bone health as the result of its greater potassium and lower "acidic" content than a diet rich in animal protein and sodium. Consequently, there have been a number of studies of diet manipulation to enhance potassium and "alkaline" content of the diet to improve bone density or other parameters of bone health. Although acid loading or an acidic diet featuring a high protein intake may be associated with an increase in calciuria, the evidence supporting a role of these variables in the development of osteoporosis is not consistent. Similarly, intervention studies with a more alkaline diet or use of supplements of potassium citrate or bicarbonate have not consistently shown a bone health benefit. In the elderly, inadequate protein intake is a greater problem for bone health than protein excess.