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Alkaline Electrolyzed Reduced Water - Ionized Water

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Postgraduate Symposium: Positive influence of nutritional alkalinity on bone health.

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There is growing evidence that consumption of a Western diet is a risk factor for osteoporosis through excess acid supply, while fruits and vegetables balance the excess acidity, mostly by providing K-rich bicarbonate-rich foods. Western diets consumed by adults generate approximately 50-100 mEq acid/d; therefore, healthy adults consuming such a diet are at risk of chronic low-grade metabolic acidosis, which worsens with age as a result of declining kidney function. Bone buffers the excess acid by delivering cations and it is considered that with time an overstimulation of this process will lead to the dissolution of the bone mineral content and hence to reduced bone mass. Intakes of K, Mg and fruit and vegetables have been associated with a higher alkaline status and a subsequent beneficial effect on bone health. In healthy male volunteers an acid-forming diet increases urinary Ca excretion by 74% and urinary C-terminal telopeptide of type I collagen (C-telopeptide) excretion by 19% when compared with an alkali (base-forming) diet. Cross-sectional studies have shown that there is a correlation between the nutritional acid load and bone health measured by bone ultrasound or dual-energy X-ray absorptiometry. Few studies have been undertaken in very elderly women (>75 years), whose osteoporosis risk is very pertinent. The Evaluation of Nutrients Intakes and Bone Ultra Sound Study has developed and validated (n 51) an FFQ for use in a very elderly Swiss population (mean age 80.4 (sd 2.99) years), which has shown intakes of key nutrients (energy, fat, carbohydrate, Ca, Mg, vitamin C, D and E) to be low in 401 subjects. A subsequent study to assess net endogenous acid production (NEAP) and bone ultrasound results in 256 women aged > or = 75 years has shown that lower NEAP (P=0.023) and higher K intake (P=0.033) are correlated with higher bone ultrasound results. High acid load may be an important additional risk factor that may be particularly relevant in very elderly patients with an already-high fracture risk. The latter study adds to knowledge by confirming a positive link between dietary alkalinity and bone health indices in the very elderly. In a further study to complement these findings it has also been shown in a group of thirty young women that in Ca sufficiency an acid Ca-rich water has no effect on bone resorption, while an alkaline bicarbonate-rich water leads to a decrease in both serum parathyroid hormone and serum C-telopeptide. Further investigations need to be undertaken to study whether these positive effects on bone loss are maintained over long-term treatment. Mineral-water consumption could be an easy and inexpensive way of helping to prevent osteoporosis and could be of major interest for long-term prevention of bone loss. PMID:19954569