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OSTEOPOROSIS
CONTRAINDICATIONS OF VITAMIN D AND CALCIUM

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One of the most frequently asked questions is, shouldn't an individual take extra amounts of calcium and vitamin D if he or she has or is susceptible to osteoporosis? The answer of course would depend on the person's metabolic type as well as the type of osteoporosis. Over thirty different factors can contribute to bone thinning, calcium and vitamin D being just two.

Calcium and vitamin D are arbitrarily prescribed for the treatment and prevention of osteoporosis, even though their beneficial effects are questionable and often controversial.

Calcium and Sodium Fluoride

A recent controlled study by the Mayo clinic revealed that the use of sodium fluoride and calcium supplements tripled the risk of non-spinal fractures in osteoporotic women. The therapy apparently increased bone density, but the new bone was more fragile than normal.

Vitamin D and Arteriosclerosis

A recent study published in the "*Journal Of The American College Of Nutrition*" reiterated the potential adverse effects of vitamin D supplementation. Their report involved animal studies in which they found that supplemental vitamin D in the presence of magnesium deficiency produced arterial damage. A magnesium deficiency enhances the effects of vitamin D and contributes to cellular damage and soft tissue calcium deposition in the form of arteriosclerosis. The same effects have been observed in human studies. Adequate dietary magnesium prevented these adverse effects.

In the presence of a relative magnesium deficiency, calcium will deposit in soft tissue, which is enhanced with high vitamin D intake. Bone calcification will not necessarily be enhanced. Cornell University will soon publish a report that includes a study of the eating habits of 6,500 Chinese; it concludes that osteoporosis occurs more often in countries where calcium intake is the highest. Chinese eat very little calcium rich dairy products, and yet they suffer relatively little from osteoporosis.

With these examples in mind, I thought it pertinent to re-emphasize caution when recommending calcium and vitamin D supplementation, particularly since we have many calls regarding their use.

Osteoporosis (Type I)

To review, Type I osteoporosis is associated with a frank calcium deficiency, which is due to decreased absorption and retention. This condition is associated with sympathetic endocrine

dominance and is seen in the fast metabolizer. Due to a decrease in parathyroid activity, the cells that normally produce bone structure (osteoblasts) become inactive. Even though calcium supplements and vitamin D are needed in this case, these are of little benefit without the other co-factors required for their utilization. For example, calcium is not well absorbed in an alkaline medium, and vitamin D is required for optimum absorption. Even after absorption, vitamin C, copper, and zinc status must be adequate for calcium to be retained in the body as well as for aiding in ossification. Magnesium is also very important due to its effect of increasing parathyroid function.

Osteoporosis (Type II)

Type II osteoporosis is seen in the slow metabolic types. In this case, there is actually an increase in calcium absorption and retention due to parasympathetic dominance. The parathyroid gland is usually overactive resulting in an increase in the cells that breakdown the bone (osteoclasts). After the calcium is drawn from the bones, it is not excreted and therefore builds up or deposits in soft tissues. This can result in gallstones, kidney stones, dryness of the skin, joint stiffness, and premature aging. Extra calcium and vitamin D is not recommended in this case and may even contribute to a worsening of the condition. The primary goal in this situation is to correct the underlying metabolic (endocrine) disturbance in order to improve calcium utilization. Extra calcium supplementation may be required at a later date after the metabolic imbalance has been improved. To recommend vitamin D and calcium arbitrarily for the type II condition is of little or no benefit.