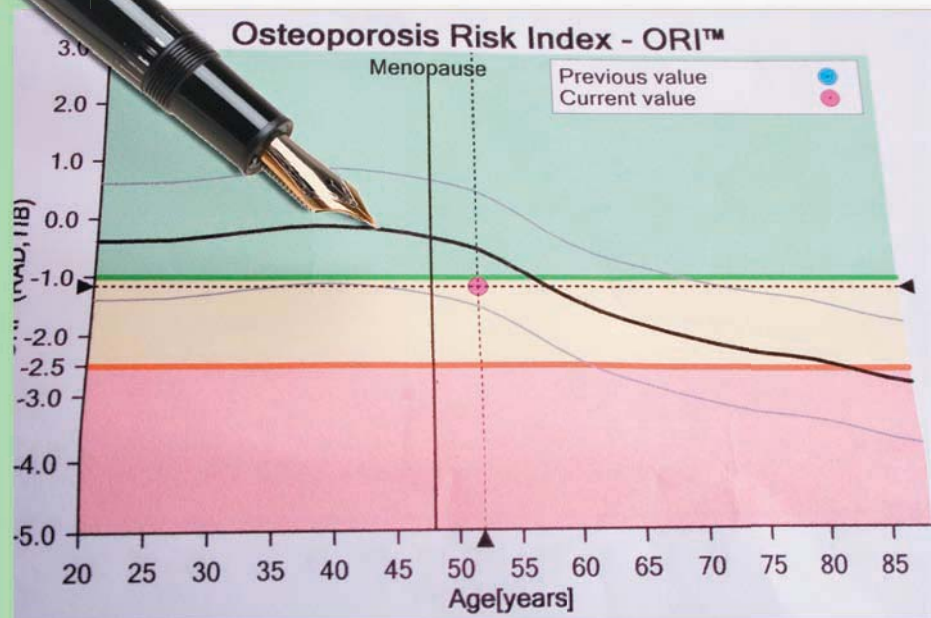


Alternative Choices for Calcium Supplementation

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ABSTRACT

Ingesting an adequate amount of daily calcium is important to build and maintain peak bone mass and to prevent fractures resulting from osteoporosis. Most American diets do not contain sufficient amounts of dietary calcium, and supplements are often advised to reach daily goals. For many, typical calcium supplements are large and sometimes difficult to swallow. In response to this need, several interesting alternatives have been developed to help patients meet daily requirements of calcium. Advising patients to select alternative forms of calcium supplementation may have a positive outcome in achieving daily calcium goals.

Keywords: Calcium, calcium supplements, osteoporosis, osteoporotic features

CALCIUM is essential for cardiac regulation, nerve conduction, stimulating hormone secretion, blood clotting, and, most importantly, attaining and maintaining of bone mass, structure, and quality. The human body cannot manufacture adequate amounts of calcium without external support. Calcium is lost daily through hair, skin, nails, sweat, urine, and feces. This lost calcium must be replaced, or the body will take calcium from the bones to perform other functions. It has been well documented that ingesting adequate calcium on a daily basis is required to offset routine losses and to prevent fractures resulting from osteoporosis.^{1,2}

The recommended dietary reference intake for premenopausal and perimenopausal women (age, 31–50) years and women on hormone therapy is 1000 mg calcium/day in a combination of dietary and supplemental forms. For women aged 51 to 70 years, 1200 mg calcium/day is recommended.³ Women older than 65 years should ingest 1500 mg calcium/day.³ Adequate daily calcium intake is a key recommendation for any woman at risk of or currently being treated for osteoporosis.⁴

Most Americans are unable to obtain the necessary amounts of calcium solely through dietary sources. Nurse practitioners commonly recommend supplements to patients to help them achieve daily calcium requirements. Calcium supplements are commonly available in combination with citrate or carbonate compounds. Calcium citrate supplements are well absorbed when taken with meals or on an empty stomach.⁴

Because it is better absorbed in less acidic environments, it may be a better choice for older adults. Calcium carbonate is better absorbed when taken with food and is typically less expensive than calcium citrate.⁴ Many manufacturers have produced various forms of calcium compound tablets to assist patients in meeting daily calcium needs. However, for many, these tablets are too large, difficult to ingest and not easily incorporated into a daily routine. Supplements in pill form often cause nausea, indigestion, constipation, and bloating. Because of gastrointestinal intolerance, calcium supplements are often left in the medicine cabinet or kitchen drawer. To meet the growing demand for calcium supplementation, many alternative forms of calcium supplements were developed. Foods, snacks, and beverages fortified with calcium are a feasible alternative source of calcium, but they should not be used at the expense of foods naturally containing calcium.^{5,6} That is, practitioners should recommend a daily requirement of calcium intake met by a combination of dietary and supplemental sources. This article describes some unique options for helping patients to achieve daily calcium goals by alternative sources.

Calcium-Fortified Beverages

Many Americans are in the habit of consuming large volumes of bottled water on a daily basis. For many, drinking

bottled water is a flavor preference over locally available tap water. To capitalize on this trend several manufacturers have highlighted the naturally occurring calcium content of their spring water or developed flavored waters with additional calcium added. For example, Cole Bros. water company bottles and distributes natural spring water that contains approximately 65.0 mg of naturally occurring calcium per 16.9-ounce serving.

A different company has developed a line of flavored waters that contains 450 mg/L. Sanfaustino calcium water comes in a pure, unflavored version. In addition, it is

available in lemon, raspberry lime, lime, and orange. According to the manufacturer, Sanfaustino calcium water provides high-bioavailable calcium carbonate, without the side effects common to most other calcium sources. The absorbability of this calcium-fortified water was independently documented.⁷

Because consumers frequently sip water throughout the day, calcium-fortified waters offer a good option for obtaining divided doses of calcium on a daily basis.

Ingesting milk is probably the best way to obtain calcium by dietary sources. However, many patients need alternative beverage options because of lactose intolerance, a dislike of dairy products, or hyperlipidemia. To meet this need many manufacturers of generic and name brands of orange juice have developed calcium-fortified options. Most products provide 30% to 35% of the daily calcium requirement (300–350 mg) in an 8-ounce glass and approximately 110 calories.

Calcium-Fortified Chocolate

Chocolate is a favorite candy choice of many Americans. Several brands of chocolate now provide calcium supplementation. Adora is a new, gourmet chocolate, made with premium, all natural milk or dark chocolate. Each bite-sized 30-calorie piece contains 500 mg of calcium carbonate.

Healthy Indulgence is a line of calcium chocolate bites made with real chocolate. Each bite-sized 25-calorie piece contains 500 mg of calcium carbonate. It is available in both milk and dark chocolate varieties.

Thompson Candy Company has developed a new line of calcium-fortified chocolate for children. Moobles are an all natural milk chocolate candy wrapped in black

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