Calcium: That "Miracle" Mineral

It's not just for strong bones and healthy teeth

By Bill Lawren
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When you were a child, your mother probably told you: "Drink your milk. You need the calcium for healthy bones and teeth." She was right. Calcium does help keep bones and teeth strong, and it also plays a key role in other vital bodily functions. But what your mother couldn't have predicted are the recent headlines heralding calcium as a possible player in the fight against many ailments. Now the bad news: nearly half of all Americans don't get enough of this essential mineral.

Here's how calcium can help protect your health—and how to be sure you're getting enough.

Lowering Blood Pressure

More than 50 million Americans have high blood pressure (hypertension). What's so frightening about this so-called silent killer is that it often does not produce symptoms for years, secretly damaging arteries and organs throughout the body until it erupts in the form of stroke, heart attack, congestive heart failure or kidney disease. If left untreated, even mild hypertension can reduce the life expectancy of a 35-year-old by several years. (Readings of 140 to 159 over 90 to 99 are mildly high; about 120/80 is normal.)

That's why high blood pressure is commonly treated with antihypertensive drugs. But studies suggest that in some people an increase in calcium consumption can help control blood pressure without medication.

Calcium also seems to help *prevent* high blood pressure. Evaluating the results of a 13-year survey undertaken by the National Center for Health Statistics, James H. Dwyer, associate professor of preventive medicine at the University of Southern California School of Medicine, found that people who consumed 1300 milligrams (mg) of calcium a day were 12 percent less likely to develop hypertension than those consuming only 300 mg a day. In people under age 40, risk was reduced by up to 25 percent.

Soon doctors may urge some hypertension patients to increase their calcium intake, much the way they now advise sodium restriction. "It's easier to add food or supplements than to go on a low-sodium diet," asserts Dr. David McCarron, professor of medicine at Oregon Health Sciences University in Portland. "Our studies show that people who try the low-sodium approach don't stay with it very long."

Preventing Heart Disease

Several studies suggest that there's another way calcium may shield the heart from harm: it may help lower blood cholesterol. In a study led by Dr. Margo A. Denke, associate professor of internal medicine at the Center for Human Nutrition at the University of Texas Southwestern Medical Center in Dallas, 13 men with moderately high cholesterol levels were given a low-calcium diet (410 mg of calcium daily) for ten days, and had their cholesterol levels checked. Then, for another ten days, the men were on a fortified diet that supplied 2200 mg of calcium daily. End result: the high-calcium regimen reduced their levels of total cholesterol by six percent and slashed "bad" LDL cholesterol by 11 percent. What's more, "good" HDL cholesterol levels stayed the same.

Denke and her colleagues report that getting plenty of calcium may be an effective adjunct to traditional cholesterol-lowering diet therapies. McCarron agrees: "If you increase your calcium intake—whether with diet or supplements—your cholesterol gets better."

Easing Menstrual Woes

There's no cure yet for pre-menstrual syndrome (PMS)—those unpleasant physical and mental complaints some women endure every month prior to menstruation. But several studies suggest that calcium can help tame PMS.

Researchers led by psychologist James G. Penland at the U.S. Department of Agriculture's Human Nutrition Research Center in Grand Forks, N.D., studied ten women suffering common menstrual and premenstrual symptoms. All the women spent half the study period on a diet containing 600 mg of calcium daily, and half on a diet containing 1300 mg daily.

While on the high-calcium diet, 70 percent reported less pain, such as backaches and cramping, during the menstrual phase, and 80 percent had less water retention during the premenstrual phase. Ninety percent experienced less crying, irritability and depression throughout their monthly cycles.

Avoiding Kidney Stones

For years doctors have told patients who suffer from kidney stones to limit calcium. The reason: calcium is a major component in about 80 percent of all stones. But controversial new research suggests that the way to reduce the risk of kidney stones may be to *increase* calcium intake.

In a Harvard School of Public Health study, Dr. Gary C. Curhan and colleagues followed 45,510 men with no history of kidney stones for four years. Those on diets high in calcium (a daily average of 1326 mg) were found to cut their risk of developing stones by one-third, compared with men who consumed the least calcium (516 mg per day).

Skeptics stress the difficulty of establishing calcium as *the* factor in this reduction of risk. They caution kidney-stone patients to consult with their physicians before changing their dietary habits.

Fighting Osteoporosis

Characterized by a gradual thinning and weakening of the bones, osteoporosis affects more than seven million Americans—most of them women—with another 17 million at serious risk. In the disease's advanced stages, vertebrae can become so fragile that they easily collapse, often leading to a debilitating curving of the spine. Increasing fragility can also mean greater risk of fractures, especially crippling fractures of the hip.

Dozens of studies show that increasing calcium intake can be vital in slowing bone loss and reducing fracture rates brought on by osteoporosis. This is especially true when calcium is taken with vitamin D, which increases the ability of the body to absorb the mineral.

In a 1992 French study of 1765 women over age 69, those who were given supplements containing 1200 mg of calcium and 20 micrograms (mcg) of vitamin D had an average 2.7-percent increase in bone mass in the hips and thighs after 18 months. Women taking only a placebo suffered a 4.6-percent loss in bone mass. Over the same period, the women taking calcium and vitamin D had 43-percent fewer hip fractures than the control group.

Many experts think that the time to start increasing calcium intake is in adolescence, when most adult bone mass is being formed. According to Dr. Robert P. Heaney, professor of medicine at Omaha's Creighton University, "There's very good evidence that at least the last two generations of American women have consumed an inadequate amount of calcium beginning in puberty." As baby boomers grow older, says Heaney, osteoporosis could become an epidemic. Luckily it's never too late to start getting plenty of this vital mineral.

Do You Get Enough Calcium?

The current recommended dietary allowances (RDAs) of calcium are 400 mg for children under six months; 600 mg for children six months to a year; 800 mg for children one to ten and men and women over 25; 1200 mg for people 11 to 24 and pregnant or lactating women.

In light of recent findings, however, experts are re-evaluating the amount of calcium needed to maintain good health. Scientists assembled by the National Institutes of Health in 1994 found that the RDA may be too low for many people. And, on average, Americans get considerably less than the RDA. The committee has recommended raising the RDAs to these levels: 1000 mg for women 25 to 50, women 51 to 65 taking hormone replacement therapy and men 25 to 65; 1200 to 1500 mg for people 11 to 24, and pregnant and lactating women; 1500 mg for women 51 to 65 not taking HRT and for people over 65.

Pregnant women need extra calcium to help the fetal skeleton form and, several studies suggest, to help prevent pregnancy-related hypertensive disorders, a major cause of premature, underweight births. The elderly need more calcium to make up for a decline in the body's ability to absorb the mineral.

One of the best sources of calcium is dairy products (one cup of skim milk equals 96.3 mg of calcium; 8 oz. of nonfat yogurt equal 96 mg). Other calcium-rich fare includes: tofu with calcium (1/2 cup equals 80 mg); pink, canned salmon with bones (3 oz. equal 58 mg); Chinese cabbage (1/2 cup equals 42.5 mg); kale (1/2 cup equals 27.6 mg); sardines (1 oz. equals 29 mg); rutabaga (1/2 cup equals 22.1 mg); white beans (1/2 cup equals 19.2 mg); and broccoli (1/2 cup equals 18.4 mg).

It can be difficult to get enough calcium from food alone—especially if you don't like or are allergic to milk. Two possibilities for those who need to boost calcium intake are calcium-enriched products (such as fortified cereals, juices or breads) and supplements.

The safety of calcium supplements, however, has been controversial. Some types—particularly those made from bone meal—may contain lead, which at high levels can stunt young children's growth and I.Q. Therefore, supplements containing calcium carbonate, calcium citrate, calcium malleate or calcium lactate are most widely recommended. So are antacids that contain calcium carbonate.

"Taking 500 to 1000 mg of calcium in supplement form can be an insurance policy," says Dr. McCarron, "especially for older people and pregnant women."

Getting enough of this "miracle" mineral every day may require a small effort. If you consider the payoff—good health—it's worth it.