The Calcium Connection
A daily dose benefits more than bones | by D.C. Agle

You wouldn't think that a checkout line in a crowded grocery store would be the place to receive advice about food supplements.

But make one offhand remark questioning the nutritional claims on what looks like a glorified candy bar, and you may get an earful.

The Multi-tasking Mineral
"Calcium affects many chronic diseases," says Robert Heaney, M.D., a professor of medicine at Creighton University in Omaha, Nebraska, who has been studying calcium metabolism since 1955. "Yet we are only just beginning to learn about the benefits of a high calcium intake."

What science has learned so far about the fifth most-plentiful element in the earth's crust—in addition to the fact that in its pure and metallic form calcium reacts violently with water—is that it is one of the most important minerals for the growth, maintenance and reproduction of the human body. Blood coagulation, transmission of nerve impulses, muscle contraction and relaxation, normal heart beat, stimulation of hormone secretion, wound healing and activation of enzyme reactions, as well as other functions, all require calcium to do their jobs.

Researchers have also discovered a link between calcium consumption and both kidney stones and colon cancer. A 1997 study published in the *Annals of Internal Medicine* found that women who consumed more than 1,000 milligrams (mg) of dietary calcium daily were 35 percent less likely to develop kidney stones than those women whose intake was less than 500 mg. And a 1999 Dartmouth College study found that men and women who took 1,200 mg of the mineral daily had 25 percent fewer colon polyps—growths that can turn malignant.

Healthy Bones
"Of course, when most people think of calcium they think of bones and teeth," says Heaney. "And they are right to do so. As important as it is for other functions in the body, calcium is absolutely indispensable here. Ninety-nine percent of all calcium in the human body is found in bones and teeth, especially bones."

But don't let their hard, white exteriors fool you. Bones are actually living tissue, and like other tissues in the human body, they are continually being reabsorbed and reformed. In fact, we humans reform so much bone that we generate a whole new skeleton—from
**Best Bone-Boosting Foods**

Aim to get most of your calcium from food, since it also contains other important nutrients. While calcium is found in many foods, it is found in high amounts in only a few. "Low-fat and nonfat dairy products, including yogurt and milk, are an ideal way to get your calcium," says Robert Heaney, M.D., "because they're inexpensive and easy to absorb." But if dairy foods are not part of your diet, the following pack plenty of calcium.

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swiss cheese, 2 oz.</td>
<td>530 mg</td>
</tr>
<tr>
<td>Cheddar cheese, 2 oz.</td>
<td>400 mg</td>
</tr>
<tr>
<td>Orange juice, calcium-fortified, 1 cup</td>
<td>350 mg</td>
</tr>
<tr>
<td>Other cheeses, 2 oz.</td>
<td>300-400 mg</td>
</tr>
<tr>
<td>Yogurt, plain, lowfat, 8 oz.</td>
<td>448 mg</td>
</tr>
<tr>
<td>Milk, nonfat, 1 cup</td>
<td>300 mg</td>
</tr>
<tr>
<td>Soymilk, calcium-fortified, 1 cup</td>
<td>300 mg</td>
</tr>
<tr>
<td>Sesame seeds, 2 oz.</td>
<td>280 mg</td>
</tr>
<tr>
<td>Collard greens, cooked, 1 cup</td>
<td>226 mg</td>
</tr>
<tr>
<td>Turnip greens, cooked, 1 cup</td>
<td>220 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almonds, 3 oz.</td>
<td>210 mg</td>
</tr>
<tr>
<td>Tofu, 1/2 cup</td>
<td>200 mg</td>
</tr>
<tr>
<td>Blackstrap molasses, 1 Tbs.</td>
<td>170 mg</td>
</tr>
<tr>
<td>White beans, cooked, 1 cup</td>
<td>161 mg</td>
</tr>
<tr>
<td>Bok choy, cooked, 1 cup</td>
<td>158 mg</td>
</tr>
<tr>
<td>Soybeans, cooked, 6 oz.</td>
<td>150 mg</td>
</tr>
<tr>
<td>Parmesan cheese, grated, 2 Tbs.</td>
<td>138 mg</td>
</tr>
<tr>
<td>Dried figs, 5 medium</td>
<td>125 mg</td>
</tr>
<tr>
<td>Navy beans, cooked, 1 cup</td>
<td>127 mg</td>
</tr>
<tr>
<td>Broccoli, cooked, 1 cup</td>
<td>94 mg</td>
</tr>
</tbody>
</table>

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toe bone to head bone—about every five years. To keep this process humming along at peak efficiency, the body needs lots of calcium, which it transforms into a calcium phosphate salt that interweaves with the bony tissue, giving bone its strength.

As important as calcium is to bone health, the human body also needs an adequate supply of the mineral in the bloodstream to take care of other functions. When there isn’t enough calcium in the bloodstream, the body will leach this valuable nutrient from existing bone. The metabolic result is that the skeleton becomes porous and loses strength over time.

“Osteoporosis is one result of a lack of calcium in bone,” says Connie Weaver, Ph.D., professor of foods and nutrition at Purdue University in Indiana. “And osteoporosis is not exclusive to women; men get it too. Even teens and kids are showing up with early signs of the disease. It’s a universal problem.”

Osteoporosis is a disease characterized by decreased skeletal mass and increased susceptibility to bone fractures. According to the National Osteoporosis Foundation, one in two women and one in eight men over the age of 50 are afflicted.

The health-care costs of osteoporosis-related hip and other bone fractures exceed $15 billion annually in the United States. What’s worse is that these costs are expected to grow to more than $60 billion by the year 2020.

While it’s never too late to begin stockpiling your calcium stores—it’s always possible to slow down the rate of bone loss—it’s best to start young. “Until you’re about 18, you should be loading up on calcium, as this is the time when your body is able to absorb the greatest amount of it and then store it in your bones,” says Weaver. “But there comes a time when the amount you store equals the amount you’re losing. We call this peak bone mass. From then on, for the rest of your life, you will always be losing more calcium than you can absorb.”

In both men and women, peak bone mass usually occurs around age 35. After that, your calcium level declines. But just be-

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must say, I honestly did not think that ESSENCE GH-1 would really work, but since it came with a 30 Day Risk Free Guarantee, I had nothing to lose. After the first week of using ESSENCE GH-1, I had more energy and slept like a baby. During the second month, friends noticed wrinkles and lines disappearing around my eyes and mouth. During the third month, my husband said my legs, butt and tummy looked toned.

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cause you’re older than 35 doesn’t mean you can’t strengthen your skeleton’s future. The more you adhere to recommended amounts of calcium, the less likely you are to be debilitated by osteoporosis.

Absorb It, Store It

No matter who was in the White House when you took your first baby steps, the important thing is that you make an effort to get your recommended daily amount of calcium. That is something Weaver says not enough of us are doing—or doing very well. “There is no population group above age 11 that is getting anywhere close to their recommendations for calcium intake for optimal health,” says Weaver. “It is a very real problem.”

Most doctors and nutritionists will recommend that people increase their intake of calcium the way nature intended—through natural food sources. The advantage of natural sources is that these foods also supply other nutrients, such as phosphorus, magnesium, vitamin D and lactose, that are necessary for the body to absorb and use calcium. Supplements and calcium-fortified foods generally don’t contain these other nutrients.

Dairy products—milk, cheese, ice cream and yogurt—are the most concentrated natural sources of calcium. One cup of homogenized nonfat milk contains approximately 300 mg of calcium, and one cup of plain low-fat yogurt has around 448 mg. Even people who are mildly lactose-intolerant can often enjoy small amounts of dairy products such as yogurt, cheese and lactose-free milk.

But if you must avoid dairy, you can still get a healthy dose of calcium from dry beans; tofu, if
processed with calcium sulfate; dark green vegetables such as broccoli, kale, collards and turnip greens; and, of course, calcium-fortified foods, which run the gamut from bread to chocolate bars.

**When to Supplement**

If you’ve taken a long look at your intake of natural sources of calcium and realize a supplement is in your skeleton’s best interest, you have several options.

Purchase the least expensive calcium supplement, or even the one with the prettiest label, as long as it contains a combination of calcium citrate and calcium malate, which is easier to absorb than the more common calcium carbonate.

Also look for doses of 500 mg or lower, as they are more easily absorbed into the body, and you can take the pills throughout the day, rather than all at once. It’s a good idea to take one dose at night; your bones lose calcium as you sleep.

Never consume more than 2,500 mg of calcium a day or you may increase your risk of kidney stones. If you have any sort of condition such as heart disease, hyperparathyroidism or kidney stones, consult your doctor first.

You also need to make sure that your diet doesn’t work against calcium absorption. High levels of protein and salt interfere with calcium uptake. Salt has a bigger effect on calcium levels in the body than protein. For every gram of salt you absorb, you lose 50 mg of calcium.

Smoking also decreases calcium absorption between 5 and 10 percent. “And if you are drinking caffeinated or carbonated beverages, they displace a high-calcium beverage like milk or calcium-fortified orange juice,” says Weaver. “You have to take that into account.”