It wasn't until Shannon Hoffman saw her grandmother's height shrink 5 inches that she understood why osteoporosis is called a silent disease. As the former host of a health radio show in Kansas and now a conference planner for a health media and trade show company in Colorado, Hoffman is professionally immersed in health issues. But even with her access to the best physicians and medical information, there was little anyone could do to stop the bone loss in Mary Ruth Brasfield, her beloved grandmother, who died recently at 94 after a fall weakened her resilience.

"By the end, she could only look at the ground," Hoffman says, "but she had a will of steel and never lost her spirit."

Early in Hoffman's childhood, her mother, Barbara, became the co-owner of Green Acres Natural Food Market and a health education promoter in Wichita, Kansas. Her interest in and knowledge of health paid off. Today, at age 58, Barbara has no signs of bone loss according to her bone density tests. For her daughter's sake, Barbara is hopeful that the family propensity for brittle bones ended with her mother.

Up to 80 percent of your risk for developing osteoporosis is genetic, says Joel Hirsh, MD, rheumatologist for Boulder Valley Rheumatology in Boulder, Colorado. Bones need estrogen to stay strong, but as levels decline, bones can deteriorate, leaving victims susceptible to fractures, especially of the hip, spine and wrists. As many as 10 million people have the disease—8 million of them women. An additional 34 million people have low bone mass, placing them at risk of developing osteoporosis.

The best indicator of whether you'll develop osteoporosis, Hirsh says, is to look back on your own mother's bone health. If family history indicates you are prone to osteoporosis, there are things you can do, such as altering your diet and lifestyle, to help stave it off.

Silent Disease
For many people with osteoporosis, there are often no visible symptoms until bones are so weak that a minor fall or bump causes a break. Such was the case for Emily Kimball, who, at age 61, suffered a stress fracture in her shin after a backpacking trip. Kimball, an outdoor enthusiast and owner of Make It Happen!, a Richmond, Virginia-based company that provides information for active, aging senior citizens, seemed like an unlikely candidate for osteoporosis. Even a bone specialist surmised that her stress fracture was probably caused by her active lifestyle and her determination to carry a 60-pound pack while hiking. However, a second opinion and a bone density test revealed that osteoporosis was the cause. "It's such a silent disease that..."
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Grocery Shopping for Bone Health

Although dairy products are the most well-known foods for promoting skeletal health, others rich in bone-building nutrients such as calcium, magnesium, manganese, phosphorus and vitamin C include these you may not have thought of.

- **Magnesium, phosphorus:** Sunflower seeds, amaranth, wild rice, wheat bran, pumpkin seeds, tofu, quinoa
- **Manganese and silica:** Brown rice, oatmeal, pineapple, pecans, raspberries, blackberries, tofu, quinoa, oats, barley, bell peppers, parsnips, cucumber
- **Calcium:** Sesame seeds, dried figs, tangerine and pineapple juice, rhubarb, prunes, papaya, oranges, cantaloupe, black currants, blackberries, agar seaweed, cactus, natto (Japanese fermented soybeans), oatmeal, collard greens, tofu
- **Vitamin C:** Peppers, tropical and citrus fruits, kohlrabi, broccoli, kale, cranberries, apple juice, vegetable juices, Brussels sprouts, cauliflower, cantaloupe
- **B vitamins:** Whole grain wheat and corn, yeast, soybeans, beans, eggs, dairy products, nuts, citrus (folate)
- **Vitamin K:** Green, leafy vegetables, eggs, green tea, asparagus, peas, green beans, whole wheat, oats and dairy products
- **Zinc:** Whole grains, fortified cereals, legumes, dairy products, nuts, eggs

Eating three servings of dairy or calcium-rich products daily during these formative years is important, but eating fruits and vegetables and getting enough exercise is important too. A British study that was published in *The American Journal of Clinical Nutrition* in January 2000 showed that a high consumption of fruits and vegetables in childhood reduced the rates of bone loss in women aged 45–55. Nutritionists believe that the magnesium and potassium in fruits and vegetables contribute to a higher preservation of bone mass.

Being active in childhood also improves bone density. An Oregon State University study performed in August 2001 showed that high-impact games for young girls such as jumping rope, hopscotch and jumping off boxes greatly improved bone density.
Aging and Bone Health

Hoffman admits that since she celebrated her 30th birthday last year, she's begun to think more about her own bone health. Since childhood, she's avoided milk because of allergies, but she eats a lot of bone-boosting fruits, vegetables and soy protein; takes magnesium supplements (a bone-building essential); and exercises regularly. "She ate really well and took a lot of vitamins as a child," Barbara says. "She didn't always want to eat healthfully and often felt deprived because of what other kids were eating."

Women's bones continue to grow long after adolescent growth spurts, reaching complete density by age 30, an age when many women obsess about either getting or staying slim. "Our society blesses excessively thin women," says Hirsh, "but regardless of height, women who weigh less than 127 pounds are at greater risk for the disease." Hirsh recommends that slender women pay close attention to bone health, especially as menopause approaches.

After menopause, bones begin to decline in density and strength at about 1 percent loss per year, with the steepest decline in the first 5 years of menopause. Miriam Nelson, PhD, author of Strong Women, Strong Bones and director of the Center for Physical Activity and Nutrition at Tufts University in Boston, recommends that women get their first bone density test at about 45 years of age. When you have it rechecked, be sure to go to the same facility and get checked on the same machine because bone density machines are calibrated individually, and different machines may give you different results.

The encouraging results of Barbara Hoffman's bone density tests are due largely to her daily routine. She takes magnesium supplements (a bone-building essential), eats a lot of bone-boosting fruits, vegetables and soy protein; and exercises regularly. "She ate really well and took a lot of vitamins as a child," Barbara says. "She didn't always want to eat healthfully and often felt deprived because of what other kids were eating."

Schools are slashing sports programs. Restaurants are super-sizing portions. Kids are trading ball games for video games and the internet. No wonder a full fifteen percent of children in the US are obese! Another fat fact is that chubby children - even if they do slim down - are likely to be overweight adults. What a nasty destiny.

Today our country's collective weight problem is linked to 300,000 deaths each year from illnesses like diabetes and heart disease - and the way we're headed, medical costs may soon get out of control.

It's not a pretty picture. But small changes can make a big difference. It might be as easy as this:

Simply substitute a few of the high calorie convenience foods your family now eats with healthy whole food meals made in the Vita-Mix. Whole foods are low in fat, high in fiber, and rich in vitamins and minerals. And Vita-Mix recipes are easy and fast and full of flavor. Make your kids fresh fruit smoothies and frozen treats and they'll never guess they're eating something healthy! The best part is, it's not a diet... it's delicious!
wellness.

exercises and eats a lot of vegetables and fruits. "I get calcium from my diet, and I take B vitamins and magnesium supplements. I think the best thing I do is keep moving," she says.

She's right, says Nelson. A program of strength training and daily exercise such as walking and hiking not only builds bones but also improves balance and muscle strength, two factors that help prevent bone-breaking falls later in life.

Diet and Bones
To maintain a strong skeletal system, Hirsh says it takes diet, supplements, exercise and sometimes medication. Following just one of these single efforts won't provide your bones with enough benefits.

In addition to calcium-rich foods, vitamins D, C, K and B are essential, as are the minerals boron, copper, magnesium, silica, manganese, phosphorus and zinc. Each of these nutrients plays a unique role in calcium absorption, bone strength and structure (see “Grocery Shopping for Bone Health,” pg. 92).

Root says that the human body maintains exactly the necessary amount of calcium in the bloodstream and stores any extra in bones. When dietary intake is low, the body reaches into the "bone bank" for more, he says. If bones continue to lose more calcium than they take in, there's trouble.

A common myth is that soft drinks are harmful to bones because their phosphorus content depletes calcium. According to Nelson, phosphorus actually helps build bones (with the help of vitamin D). The real problem with sodas, Nelson says, is that they often replace healthier dairy and fruit beverages, thus reducing calcium intake.

Another culprit that may inhibit calcium absorption is caffeine. Although drinking small quantities of caffeinated beverages has negligible effects on calcium absorption, drinking more than 4 cups of soda or coffee daily can interfere with calcium absorption.

Supplements and Drugs
Hirsh recommends that women approaching menopause—and those going through it and past it—should take a daily supplement containing about 1,500 milligrams (mg) of calcium with at least 400 International Units (IU) of vitamin D. They should also maintain adequate levels of phosphorus (800 mg), magnesium (280 mg) and manganese (2-5 mg)
and avoid excessive vitamin A intake (more than 25,000–50,000 IU), which can double the risk of fracture.

The trick to getting enough calcium, Root says, is to understand that even if you take 1,500 mg of calcium daily, not all of it will be absorbed—it depends on age, metabolism, activity level and gender. And the body will absorb only elemental calcium, which is calcium broken down into its purest state.

Calcium comes in two primary types: citrate and carbonate. Each type of calcium has different levels of elemental calcium. For instance, for every 1,000 mg of calcium citrate ingested, only 240 mg of elemental calcium is available; for 1,000 mg of carbonate, 400 mg is available. At first glance, carbonate has more available elemental calcium, but the body absorbs citrate about 25 percent more efficiently. Root recommends taking calcium supplements in 500 mg increments throughout the day for optimal absorption.

Despite all the recent bad news about hormone replacement therapy (HRT), one beneficial side effect of HRT is stronger bones. A study published in the Journal of the American College of Nutrition in December 2002 reports that natural hormone replacement (beneficial compounds from soy called isoflavones) is worthwhile for women with mild bone loss.

Today, when Barbara Hoffman looks at family photos of her mother, she notices that osteoporosis began to take its toll as many as 30 years ago. Although Mary Ruth’s spirit never failed and she continued to work, eventually she lost 50 percent of her bone mass. Barbara and Shannon hope that with their diligent lifestyles of eating well and exercising, they’ll be able to stave off the bone loss that Mary Ruth suffered.

Calcium Tips

- Calcium supplements are best absorbed in the intestine when taken with food.
- Take only 500 mg of calcium at a time.
- Do not take calcium with high-fat or high-fiber foods, or with iron.

Source: Beautiful Bones Without Hormones by Leon Root, MD, and Betty Kelly Sargent

A romantic dinner for two, Thanksgiving with the family, a Mexican fiesta for all of your friends—throwing a dinner party can be a lot of fun, and a lot of work. Whether all of your guests are vegetarians, or there’s just one at the table, cooking a satisfying and delicious meatless menu can be even more challenging. The editors of Vegetarian Times magazine, the leading authorities on the subject, have taken all of the guesswork out of creating a vegetarian dinner party menu by writing Vegetarian Times Vegetarian Entertaining.

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