BONE UP!

Boost bone health, address osteoporosis, prevent fractures—naturally

By Amy Rothenberg, ND, DHANP

I recently gave a lecture for a local nonprofit on natural and integrative medicine for osteoporosis. We had to move the event to a larger space because interest was so high. Is this because osteoporosis is increasingly common? Or are people more aware of it and at earlier stages of the condition, given the greater availability of bone density testing? Perhaps the aging of the baby boomer population is a contributing factor—or all of the above.

A growing concern

At any rate, osteoporosis is a serious, initially silent condition that becomes more common with age. As bones gradually lose mass and density over time, they get weaker, less able to handle normal stress, and more likely to fracture even from minor bumps or falls. According to the International Osteoporosis Foundation, one in two women and up to one in four men over age 50 in the United States will break a bone due to osteoporosis. The number of annual fractures is expected to rise by 68% from 2018 to 2040—from 1.9 million to 3.2 million.

Women typically experience peak bone density in their 20s to early 30s and lose the most bone during the first 10 years after menopause. Men reach peak bone density within a similar timeframe, but their peak density is generally higher and their pace of loss slower.

Identifying bone loss

The standard for diagnosing osteoporosis is a bone mineral density test of the hip and spine, using dual-energy x-ray absorptiometry (DEXA). The results give a "T-score" that

BONE-BOOSTING SUPPLEMENTS

I like my patients to get most of their nutrition through food. Even so, there is a role and a place for supplements. I tailor dosages to the individual, based on their current health, test results, and other medications taken. But in general, osteoporosis or osteopenia patients do well to consider the following:

Calcium: The recommended daily amount for women is 1000 mg a day before age 50, then 1200 mg a day afterward. For men, it's 1000 mg a day until age 70, then 1200 mg a day. These are the total amounts from both food and supplements. If you are not getting this amount from your daily diet, consider supplements to make up the difference. Calcium carbonate is the most available, least expensive form, but it can be difficult to absorb and often causes constipation. Adequate stomach acid is needed to break down and absorb calcium, and stomach acid tends to decline with age (plus, many people take acid-blocking drugs). So, I recommend calcium citrate, as it is more easily absorbed. Taking calcium in combination with vitamin D reduces any cardiovascular risks associated with calcium supplementation.

Vitamin D: It impacts everything from mood and cognition to immune function, digestion, and bone health. Direct sunlight on the skin stimulates the body to make this vitamin, but many people, especially in northern climates, rarely get much exposure. You cannot get vitamin D from sunlight that shines through your car window or the lights used for seasonal affective disorder. A few foods naturally contain vitamin D, including fish, egg yolks, and red meat. Some foods are fortified with vitamin D, such as breakfast cereals and breads. I like to test vitamin D levels before prescribing an appropriate supplemental dose. For optimal bone health, I want blood levels in the 50-60 ng/mL range. Vitamin D is a fat-soluble vitamin, so you need fat in your diet to absorb and metabolize it. A typical daily dose might be 2000 IU.

Vitamin K-2: 45 mg of vitamin K-2 in the form of MK4 has been shown to increase bone density and reduce fractures. But people taking the blood thinner Coumadin (warfarin) should not take supplemental vitamin K. And people taking other blood thinners should consult their prescribing physician before taking this vitamin.

Collagen: I usually recommend 5 grams of collagen peptide daily, which helps bones be less brittle and adds to scaffolding for bone growth. Collagen also helps make healthy nails, hair, and teeth. For those who sidestep animal products, vegan forms of collagen are also available.

Melatonin: This is a precursor to serotonin, which encourages osteoblasts to lay down new bone. Many people use melatonin for sleep induction or for its anticancer impact. Higher doses cause excessive dreaming in some people, so perhaps 3 to 5 mg before bed is adequate for bone health.

Other minerals: Magnesium is not as essential as once thought; the amount found in a multivitamin can suffice. Boron, a trace mineral sometimes recommended for bone health, needs more conclusive studies to determine whether it is effective; the amount obtained in food is sufficient.

measures how your bone density compares to that of a healthy young adult of your gender. A normal score is -1.0 or higher. A low bone mass (osteopenia) score is between -1.0 and -2.5. A score of -2.5 or lower indicates osteoporosis.

A physical exam for signs of bone loss may contribute to the diagnosis or call for further investigation. Significant height loss or a forward curve of the upper back (kyphosis) could indicate vertebral compression fractures from weakened bones. When mild, these fractures often go unnoticed by patients. (Another cause of height loss or kyphosis could be a flattening of the spinal discs between vertebrae, which is common with aging.) Unfortunately, many people first learn they have osteoporosis when they break a wrist or hip.

Bones are alive

Bone is made of collagen and calcium phosphate. Collagen (made from three amino acids, or building blocks of protein) provides flexibility and tensile strength, helping bones absorb mechanical stress to resist fracturing. Calcium gives rigidity and structural support.

Bone is constantly remodeling itself, with osteoclast cells breaking bone down and osteoblast cells building bone up, ideally, at an even pace. As we age, however, the osteoclast activity often outpaces the osteoblast activity, leading to a decrease in bone mineral density.

Osteoclasts and osteoblasts are impacted by many things, including diet, positive stress on the bones from exercise, and medications. Armed with this knowledge, we can make smart choices that improve our bone health.

Know your risk factors

It's important to understand the risk factors for osteoporosis and osteopenia, which can inform positive modifications for prevention or treatment. Some factors are largely beyond our control, such as aging, being female, the post-menopausal period with lower estrogen levels, being of White or Asian race, and having a family history of osteoporosis. More controllable risk factors include smoking, disordered eating, being underweight, not having a menstrual period for long stretches (such as in women who are underweight or who overexercise), low Vitamin D levels, a sedentary lifestyle, excessive alcohol use, and a personal history of any of these factors. Many ailments can also contribute to weak bones, including thyroid/parathyroid diseases and those that impede nutrient absorption, such as Crohn's disease, certain cancers or their treatments, and chronic lung, liver, or kidney disease. And, unfortunately, many of the most commonly prescribed medications are also risk factors. (See *Beware: The Bone Robber Drugs* on page 27.)

Eat for bone health

Reducing inflammation is of prime importance for people with osteoporosis or osteopenia, since chronic inflammation spurs overactivity of osteoclasts, which break down bone. I recommend an anti-inflammatory diet or a Mediterranean diet for my patients with bone concerns. Of course, this way of eating also helps to prevent cognitive decline, depression, heart disease, diabetes, cancer, and arthritis, so it's a good choice for everyone! At least 80% of cases of our three biggest killers—heart disease, diabetes, and cancer—are preventable through diet and lifestyle.

An anti-inflammatory diet includes lots of veggies and fruit, legumes, whole grains, lean proteins, nuts and seeds, as well as healthy oils from avocados, olives, and fish. This diet avoids refined carbohydrates, refined sugars, alcohol, and overly processed foods. Processed foods are stripped of essential nutrients, including calcium, magnesium, manganese, copper, iron, zinc, and B vitamins, which are all central to building healthy bones.

Fruits and vegetables contain Vitamin C, which is needed to make collagen. They also contain anti-inflammatory polyphenols, which act as strong antioxidants.

Fruits and vegetables offer ample fiber, which helps regulate blood sugar and helps you feel full longer. Nondigestible fibers

provide prebiotic material, so your microbiome works better, all the while helping to generate butyrate, which is an anti-inflammatory fatty acid important for bone health. I often recommend small amounts—about ½ teaspoon—of organic potato starch as a simple prebiotic to help feed the microbiome.

Aim for 30 grams of fiber a day—keep track daily of how many grams of fiber you get for a week to know whether you need to add more. Eating ground flaxseed each day is a good idea, both for its anti-inflammatory properties and its fiber content.

Eat cultured and fermented foods, such as yogurt, kefir, sauerkraut, kimchi, and miso, to help create a robust and diverse microbiome, which also reduces inflammation. Taking sips or forkfuls a day is plenty—you do not need big portions of these foods.

Some patients have a hunch about the foods that tend to inflame their digestive tracts, joints, or skin; sometimes it's an otherwise healthy food that's causing problems. Consider avoiding that food or testing for food sensitivities. Various blood tests can also give clues to inflammation in the body. Consider elongating your overnight fast to about 14 hours, as this has been shown to reduce inflammation.

Patients often ask me about coffee. Coffee is the most common source of antioxidants in the American diet. One to two cups per day will not negatively impact your bones—adding milk increases your calcium intake, which is good unless you don't tolerate dairy. But I do not recommend coffee for those with anxiety, GERD, bladder issues, or an irregular heartbeat. Those with insomnia should not drink coffee after one or two p.m.

Eat calcium-rich foods

To get adequate calcium in the diet, I advise eating dark green leafy veggies every day. More good calcium-rich choices are dairy products (if tolerated), fish, nuts, and soy.

Think, too, about reducing foods that cause calcium loss. A very specific amount of calcium is needed in the blood to regulate muscle contractions, including the heart's pumping. When our kidneys filter the blood, our diet choices affect which minerals flow out in the urine. Reduce alcohol, sugar, and salt intake, as these can lead to calcium loss in the urine, which negatively impacts the bones.

Eat enough protein

Many of my patients with osteoporosis do not eat enough protein. I recommend aiming for about 0.55 grams of protein per pound of body weight. So, if you weigh 150 pounds, that's 150 pounds x 0.55 grams = 82.5 grams of protein per day. I ask my patients to track their typical protein intake for a few days to raise their consciousness about it. (Helpful protein counters can easily be found online.) If they get toward the end of the day and see that they are consistently 20 grams short, that's a great time to consider an organic pea-based or whey-based protein powder in a smoothie; perhaps adding soy milk and peanut butter or another nut butter to bump up the protein count.

Keep moving!

Physical activity is essential for people with osteoporosis or osteopenia. We know that 95% of osteoporotic fractures result from a fall, so I encourage my patients to focus on balance and strength training, as well as overall mobility.

Consider taking specialized classes or engaging a trainer or physical therapist with knowledge of osteoporosis. Certain exercises may need to be modified to avoid fracture risk, for example, if they put too much force on the spine. That said, please find a way to keep moving safely! It will help reduce your risk of falls and fractures, as well as heart disease, diabetes, cognitive decline, cancer, and most other chronic ailments.

If you are just starting to exercise, begin slowly and build up. One goal might be 7,500 steps a day, as recent research says that more than that does not offer further benefit. Consider using walking poles to improve strength and balance.

Strength training is essential for increasing bone density and muscle strength. I love to introduce my patients to weight lifting or resistance training with Therabands©. You can find online classes for Therabands© workouts for those with osteoporosis. Weighted vests can also increase bone density and strength; again, start slowly and add weight incrementally. On the next page, you'll read about Elaine, a patient who employed many of these bone-boosting measures to good effect.

Fragile and Fatigued? NOT ANYMORE!

A path to better health and stronger bones

Elaine, a recently retired high school teacher, had been looking forward to a new phase of life. She and her husband dreamed of a retirement filled with travel, camping, and visits with extended family. Unfortunately, their vision had not materialized because Elaine felt exhausted beyond compare. On top of that, she had just been diagnosed with osteoporosis.

Elaine couldn't recall exactly when the fatigue began but told me, "I had to drag myself through my last few years of teaching." The osteoporosis diagnosis didn't surprise her because her older sister had it, as did her mother, who had died at 80 after complications from a fractured hip.

A small, compact woman with white hair cut in a pixie style, Elaine, 62, already knew a lot about how to help her bones. She'd read books, spoken with friends, and noted her doctor's exercise and dietary advice. Unfortunately, she lacked the drive, energy, and sustained focus to get it done. This left her worried about her health and sad about her derailed retirement dreams.

Elaine's story

I set out to find a homeopathic constitutional remedy for Elaine. I hoped it would improve her energy and drive, allowing her to take action to stem her bone loss (e.g., exercising and improving her diet) and to realize some of her dreams (e.g., travel). At our first meeting, I aimed to understand her chief complaints, as well as how she functioned across the physical and psycho-emotional landscapes. Here's some of what I learned:

Fatigue: Although Elaine slept remarkably well at night, she woke up tired. Each morning, she'd make a list to keep herself on task, but fatigue forced her to aim low. She was very aware of her own energy and output limits, and if she did not overbook herself with social commitments, she managed better. So, she focused on the things she could control, such as her own schedule.

Elaine's doctor had tested her for anemia and low thyroid, two common causes of low energy, but her results were normal. And while Elaine was disheartened to be so tired, she was not depressed overall. (I double-checked this with her, since fatigue is common in those who struggle with depression.)

Bone issues: Aside from her diagnosis of low bone density via a bone scan, Elaine was unaware of any osteoporosis-related symptoms. She guessed she had arthritis in her hands and knees, because of mild achiness and reduced range of motion, but it had not interfered with her activities.

Elaine's endocrinologist advised her to improve her diet and increase weight-bearing exercise for a year before repeating the bone density test. In the meantime, the doctor also suggested an osteoporosis medication, but Elaine was hesitant and declined it because of potential side effects.

Digestion: Elaine complained of "sluggish digestion," going two or three days without a bowel movement. She took extra fiber and drank plenty of water, but the slightest stress or schedule change would affect her bowels. She had tried many herbal supplements and teas, some of which had helped, but not enough.

Skin: Elaine described her skin as delicate, sensitive to the sun, and "becoming thinner and thinner." She frequently got painful cracks at the ends of her fingers. They were worse in winter and after being in water. She used rubber gloves when washing dishes but still struggled with cracks.

Hormonal history: She'd given birth twice and had one miscarriage. Her menstrual periods were normal till her mid-50s and her menopause was "not too bad," with about a year of mild hot flashes.

Home: Elaine loved her kind, gentle husband of 35 years. She relied on him for many things, both emotionally and around the house, and he took good care of her. She'd found the early years of motherhood overwhelming, but both her kids were grown now and doing well.

Work: She had liked her job as a teacher, but the last few years were tough, with more demands from the administration, less time for preparation, and more focus on student testing. She did not miss working at all.

Considering the case

In thinking about remedies that could help Elaine, these came to mind: *Calcarea carbonica, Carcinosin*, and *Silica*. All three fit the profile of bone issues, fatigue, and constipation. And the temperaments of people who benefit from these remedies tend to include a strong attention to detail and an overall sensitivity, as seemed true of Elaine.

One striking thing about Elaine was how well she knew her own limits, carefully preparing her schedule so as not to overtax herself. This is consistent with *Calcarea carbonica*. But if she had needed this remedy, I would expect to see more sturdiness and robustness overall—even in a tired person. I also would expect a different physical appearance, as people who benefit from this remedy tend toward the heavy side. Instead, Elaine weighed 100 pounds, was just under five feet, and did not easily gain weight or muscle mass. (Her small stature alone put her at risk for osteoporosis.)

People who benefit from *Carcinosin* typically have a prominent need to be taken care of by others, and they do better when they are. This seemed true of Elaine, to some degree, especially in her relationship with her husband. But she also had a strong independent streak that I would not have expected in someone who needed this remedy; she wanted to do things her way, staying true to her own beliefs, needs, and desires. Also, most people who do well with *Carcinosin* are more outgoing and vivacious, similar to what we see in people who benefit from *Phosphorus* constitutionally. Elaine, however, enjoyed her own company and did not rely on the presence of others to feel alive and engaged.

Elaine did not take up much space, physically or energetically. She was a sensitive, yielding, inward-focused, gentle woman whose symptoms and temperament fit the *Silica* profile well. The homeopathic literature often describes *Silica* people as needing more internal "grit." And when someone has to mete out energy as carefully as Elaine did, *Silica* can be a beautiful remedy to increase endurance and capacity. Elaine's osteoporosis, sensitive skin with cracks, and constipation confirmed a prescription of *Silica*.

A way forward

I prescribed *Silica* 200c for Elaine. We also discussed ways to improve her bone health and reduce fracture risk with other natural medicines (see *Bone Boosting Supplements* on page 21) and lifestyle changes (see pages 22-23 for ideas). Together, we created a diet and nutrition plan that emphasized adequate protein and collagen intake and reduced food and drink that pull calcium from the body.

Two months later, Elaine happily reported that her bowels were moving more regularly "without having to take anything!" The cracks on her fingertips had healed (although the weather had turned warmer, so that might have contributed to the improvement). But I was most pleased to hear that Elaine and her husband had started making travel plans—something they had been previously postponing because of Elaine's condition. "It feels like some of my stamina's coming back," she said. She was accomplishing more things around the house and had gotten together with old colleagues. Even better, she had signed up for a twice-a-week exercise program for women with osteoporosis at a local gym.

All in all, this was an excellent report. I believe *Silica* stimulated Elaine's vital force, giving her increased energy and mental determination to get moving on her "to-do lists." Shopping, preparing healthy foods, exercising, and taking her supplements became easier for her. And each step on this path fed into a positive spiral of health.

Cumulative improvements

Over the next two years, Elaine continued to improve. Skin cracks and digestive issues were rare now. On a few occasions, her energy flagged, such as once when she fell ill with a respi-

ratory infection and another time she faced an overwhelming family situation. Each time, I prescribed a dose of *Silica* 200c, and Elaine regained her equilibrium.

When Elaine had another bone density test roughly a year after our first meeting, her test score had improved somewhat; areas of her hip and spine had reverted to osteopenia from osteoporosis. Elaine was thrilled. Her doctors were pleased, too.

Elaine plans to stay on the nutrition, supplement, and exercise program we created together. It has become a way of life for her, as this plan reduces the risk for other chronic, debilitating ailments, too. Elaine remains energetic enough to enjoy her strength training, walk regularly with a group of friends, and take camping trips with her husband.

A healthy spiral

This is the beauty of whole-person homeopathic treatment—we see physical symptom relief, yes. But perhaps even more importantly, we see improved mental determination, focus, and energy that enables the person to take action on diet, exercise, mindfulness, and lifestyle changes that will put them on a more positive spiral of health.

AMAZING BONES!

Ever marvel at the roughly 206 bones in your body?

They provide:

- **Structure –** giving your body shape, holding you up, allowing you to move via attachments to ligaments and tendons
- **Protection –** keeping your vital organs safe (e.g., brain, spinal cord, heart)
- **Storage –** storing minerals (e.g., calcium, phosphorus), vitamin D, and sometimes fat and releasing them when your body needs them for immune function, cognition, metabolism, energy, and more
- **Production –** creating (in the marrow) red blood cells, white blood cells, and platelets that are essential for energy, immune function, and blood clotting

Fall safe, fail safe

Most broken bones result from falls, so make your home and work environment as safe as possible. Be sure area rugs are removed or well-tacked, stairs and handrails are secure, and lighting is good. Ensure electrical wires are not underfoot, remove clutter to avoid tripping, and add grab bars and shower chairs in the bathroom. Be sure your vision is corrected.

If you live in a cold climate, arrange for reliable help to remove ice and snow. Walk on the grass near icy sidewalks. Pay attention to your shoe choices. Soles with a patterned tread are better for traction than smooth soles. Choose closed heels, and avoid high heels. Shoes should be light in weight and fit correctly.

Drug treatment options

The two main kinds of conventional drugs prescribed for osteoporosis either reduce the breakdown of bone (antiresorptive drugs, such as bisphosphonates Fosamax and Boniva) or build up bone (anabolic drugs, such as Forteo and Evenity). There are also hormone therapies, which are antiresorptive.

If indicated, how will your doctor and you decide which drug might be best? It will depend on your diagnosis, your fracture history, which bones you are trying to most protect, your tolerance for risk, and your level of resolve to stay on a medicine. Some drugs increase bone density but do not prevent fractures. Many have long lists of side effects that make them difficult to stay on, although some people manage well. Suffice it to say, it is worth taking the time to understand your risk factors, as well as to research the pros and cons of the conventional drug recommended.

Get on a healthy path

So, if you or someone you love has osteoporosis or osteopenia, don't despair—bone up instead! There are plenty of positive steps you can take on a path toward stronger, healthier bones.

BEWARE: THE BONE ROBBER DRUGS

Sadly, the list of medications that can negatively impact bone density or increase the risk of fracture is long. And 54% of adults age 65 and older take four or more prescription medications! Many drugs were originally developed and tested for short-term use, but people take them for years or decades, unaware of the long-term side effects.

What to do? Remember, most side effects are dose dependent, so if a medication is deemed essential, talk with the prescribing physician about possibly lowering doses. Might there be a different drug that has less known impact on bone health? Might there be natural medicine or lifestyle solutions instead?

And please recall, many medications are lifesaving! We think about the risk/benefit of any medication taken, and when the benefit outweighs the risk, we turn our attention to all the ways we can minimize other risk factors and build toward healthy bone in other ways, as outlined elsewhere in these pages.

1. Corticosteroids: While lifesaving at times, they weaken bones when used long-term and even short-term.

2. SSRIs: Selective Serotonin Reuptake Inhibitors, used for depression, anxiety, fatigue, fibromyalgia, and menopausal symptoms, may improve mood but can cause bone loss. A Harvard study found that women taking SSRIs for menopausal symptoms were up to 76% more likely to break a bone within a year of starting treatment. (e.g., Celexa, Lexapro, Prozac, Paxil, Zoloft)

3. SNRIs: Selective Norepinephrine Reuptake Inhibitors, used for depression, anxiety, and chronic pain, have a similar impact on bones as SSRIs. (e.g., Cymbalta, Effexor, Strattera)

4. Aromatase Inhibitors (AIs): While they can prevent cancer recurrence in women with estrogen receptor-positive breast cancer, they can increase overall inflammation and negatively impact bones. (e.g., Femara, Arimedex)

5. Androgen Deprivation Therapy (ADT): For women with polycystic ovaries, endometriosis, or breast cancer, and for men with prostate cancer, these drugs aim to lower testosterone, and in some cases, estrogen. A side effect is increased inflammation, which increases osteoclast activity. Resulting loss of bone and muscle increases fall and fracture risk. (e.g., Lupron, Zoladex, Trelstar, Vantras)

6. Hypnotics: Benzodiazepines, for insomnia and anxiety, can reduce bone density (e.g., Valium, Ativan, Xanax, Klonopin). They also increase fall/fracture risk by causing incoordination and confusion, for instance, when walking to the bathroom in the middle of the night.

7. Acid Blockers: Proton Pump Inhibitors (PPIs, e.g., Nexium, Prilosec, Protonix) and Histamine Blockers (H2 receptor antagonists, e.g., Pepcid, Tagamet) reduce stomach acid, thereby reducing absorption of calcium, magnesium, iron, and vitamin B12. This creates deficiencies, so the body does not have the raw materials to lay down new bone. Also, when there's not enough calcium in the blood, the body pulls it from bones and teeth.

8. And More: Certain blood pressure medications, anticoagulants, diabetes drugs, and chemotherapeutic agents have also been shown to decrease bone health. Dizziness, imbalance, or confusion, leading to falls and possible fractures, can be side effects of muscle relaxants, allergy medications, and memory loss drugs.

For related information, see my articles:

- "Stuck in the Benzo Trap? Keep calm and get off these prescription meds for good," Spring 2020, Homeopathy Today, www.homeopathycenter.org
- "Natural Remedies for GERD," Institute for Natural Medicine, https://naturemed.org/naturopathic-approach-to-gastroesophageal-reflux-gerd/

Resources:

For learning about osteoporosis, I love these books:

- *Fracture-Proof Your Bones* by John Neustadt, ND
- *The Whole-Body Approach to Osteoporosis*, by R. Keith McCormick, DC
- *Strong Women Stay Young*, by Miriam E. Nelson and Sarah Wernick

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Amy Rothenberg, ND, DHANP, has been in practice since 1986 in Northampton, MA, www.nhcmed.com. Her new book, *You Finished Treatment, Now What? A Field Guide for Cancer Survivors* (Koehler Books, 2022), can be ordered anywhere books are sold. See www.DrAmyRothenberg.com. With her partner Paul Herscu, ND, MPH, DHANP, she founded and teaches through the New England School of Homeopathy, www.nesh.com. Her writing can be found at *Medium*, *Thrive Global*, *The Huff Po*, and more. When not working, Dr. Rothenberg enjoys spending time with her family, in the garden, and on the ballroom dance floor.