

# 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.

## 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.



# 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

## 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-posi-

tive breast cancer, they can increase overall inflammation and negatively impact bones. (e.g., Femara, Arimedes)

**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](http://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

## ABOUT THE AUTHOR



**Amy Rothenberg, ND, DHANP**, has been in practice since 1986 in Northampton, MA, [www.nhcmcd.com](http://www.nhcmcd.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](http://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](http://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.