

Unbreakable Bones



It's easy to take our bones for granted—they've always been there supporting us, taking us wherever we want to go—but it is only when they weaken or break that we really begin to take notice of their importance. Ideally, though, we need to start valuing our bones when we are young if we want them to carry us vigorously into our older years. However, even if your bones weren't your first priority when you were a teenager, there are still measures that you can take to improve your bones at most stages of your life.

It is normal to lose bone mass as we age. In fact, we reach our peak bone mass at around age 30 and then start to lose bone density around age 35. For women, bone loss is accelerated after menopause. While we all lose bone density, some people also simultaneously lose bone quality, which puts them at serious risk for fractures later in life.

Although we can test for bone density,

the results of the test won't necessarily give a clear picture of fracture risk, since losing bone is a normal part of aging. You can assess your fracture risk, however, by checking your risk factors. Add up how many of these risk factors you have:

Risk Factors

- Previous bone fracture after age 20
- Parent with a bone fracture after age 20
- Steroid use
- Smoking
- Drinking more than two servings of alcohol a day
- Vision problems
- Tall stature
- Losing or maintaining weight since age 20
- Unable to get up out of a chair without using your hands or arms to assist you
- Rheumatoid arthritis
- Advanced age
- Low physical activity

The more risk factors you have, the higher your fracture risk. If you also have low bone density, then your fracture risk is even higher. Although many of these risk factors are not controllable, several of them can be controlled primarily through diet, exercise and smoking cessation.

If you're concerned about maintaining bone quality and preventing fractures as you age, there are many dietary and lifestyle measures you can take to ensure that you maintain a robust skeleton:

✓ Move Them to Build Them

Exercise may be more important than diet when it comes to bone health. Weight-bearing exercise combined with strength training is best for building strong bones, preserving bone quality and slowing bone loss. You don't need to do anything fancy; simply walking for a total of four hours a week can decrease your risk of a hip fracture by 41%!

Exercises that stimulate your bones, such as walking, jogging, jumping rope, hiking, dancing, stair climbing, tennis, skiing, skating and aerobics, should be done for at least 30 minutes three to four times a week. Weight training with free weights, weight machines or resistance bands strengthens bones as well as your muscles and it should be included in your routine two to three times a week.

Additionally, activities that promote balance are very important, since they help to prevent falls that can lead to broken bones. This is especially important for older adults, since aging can make you unsteady and weak and, therefore, prone to falling. Some examples of effective balance exercises include tai chi, yoga, pilates and even simply standing on one foot (hold on



Gelson's registered dietitian, Jessica Siegel, has a Masters in Public Health. However, she is not a doctor and her nutritional recommendations are not tailored to specific health problems. Consult your physician before beginning any nutritional program. To contact Jessica, please call her at 1-800-GELSONS.

in this issue...

Unbreakable Bones
Can You Taste It?

to the back of a chair if you are very unsteady). As always, talk to your doctor before beginning any exercise program.

✔ Don't Eat Junk

When it comes to your diet's influence on bone health, there are some foods that you should avoid and others that you should go out of your way to include. In terms of what not to eat, remember these three words: DON'T EAT JUNK. Highly processed and empty-calorie foods are not nutritious and they displace other wholesome foods that help build bone. Soft drinks in particular have a confirmed association with weak bones. Sodium-rich foods (like snack foods and other processed foods) hinder calcium absorption and deplete calcium stores from bones, as can diets that are very high in caffeine or protein from animal sources. Excessive amount of iron and vitamin A from supplements, liver, milk (in the case of vitamin A only) or red meats (in the case of iron only) can also deplete bones. If you take a multivitamin, be sure that it does not contain iron or vitamin A in the form of retinol or vitamin A palmitate (vitamin A from beta carotene or mixed carotenoids is fine). Studies have also shown that drinking more than two servings of alcohol a day contributes to bone loss.

Eating some chopped liver and drinking a soda once in a while should not cause significant bone damage, if any, but eating a diet that regularly includes refined and processed foods will deprive your body of the nutrients it needs for bone health (and good health in general). If you need to eliminate some foods from your diet now, there is some good news: There are plenty of delicious bone-healthy foods that you can replace them with.

✔ Eat Wholesome Foods

There is a wide array of nutrients that influence bone health, which can be found primarily in minimally processed foods such as vegetables and fruits, whole grains, beans, dairy foods, nuts, seeds and fish. Certain types of foods have been shown to strengthen bones and prevent bone loss.

Soy foods in particular have been shown to prevent bone loss and stimulate bone formation, especially in menopausal women who consume them regularly for at least 14 years after menopause. Eating just five grams of soy protein a day can reduce fracture risk by 31% for menopausal



women. Whole soy foods are the best sources of soy protein's protective benefits. They include edamame (green soy beans), tofu, soy milk and soy nuts. One serving a day of any of these foods should be adequate for women in early menopause who want to benefit from soy's bone-building benefits. Soy supplements and soy protein isolate are not recommended.

Green tea has also been shown to increase bone mineral density. The phytonutrients in green tea (and, to a much lesser extent, black tea) can help stimulate bone building and slow bone loss. Both caffeinated and regular green tea are beneficial, but it is best to drink tea when it is hot since cold water binds to some of the beneficial nutrients. Four to five cups of tea a day is optimal.

In general, a diet that is adequate in protein (but not high in protein from red meat) can help to build strong bones. This is especially true when adequate calcium is also consumed. Plant proteins like beans and soy are good choices, as are fish. The omega-3 fatty acids in fish have the added benefit of helping to preserve calcium in bones and building bone density. Additionally, fish that is canned with bones offers a great source of calcium and vitamin D. If you do not eat fish frequently, consider supplementing with a high-quality fish oil that does not contain vitamin A (you will not get the benefits of the protein, calcium or vitamin D contained in fish, but you will at least still benefit from the omega-3 fatty acids).

Eating foods rich in prebiotics can help you to maximize the nutrients that you eat in other foods, especially calcium-rich foods, to help increase bone mineral density. Prebiotics are indigestible carbohydrates that promote the growth of healthy bacteria in the colon that aid in the absorption of calcium and other minerals. Whole intact grains (like oats and barley), onions, asparagus, artichokes, Jerusalem artichokes, bananas, tomatoes, jicama and legumes all naturally contain prebiotics.

Leafy green vegetables are an important group of produce that is especially important for bone health. Leafy greens contain vitamin K, which has been shown to reduce fractures and bone loss. Try to include one of the following in your diet each day: broccoli, Brussels sprouts, spinach, collard greens, mustard greens, kale, Swiss chard, dark green lettuces, escarole and bok choy. As an added benefit, these foods also contain calcium, vitamin C, potassium and beta carotene, which are essential to bone health.

Vitamin C, which can be found in citrus fruits, strawberries, kiwis, tomatoes, red peppers and leafy greens, is also vital for the production of collagen, the connective tissue that helps keep bones together. The antioxidant action of vitamin C may also help protect bones from deteriorating, as vitamin C has been shown to suppress bone loss.

✔ Supplement Wisely

Consuming adequate calcium throughout your lifetime is essential for strong bones, but the adequate level of calcium intake is still up for debate. If your diet is high in produce and whole grains and adequate in protein and you supplement with vitamin D, then studies indicate that you may only need 700 milligrams (mg) of calcium a day. If your diet is less than optimal or if you already have osteoporosis or take medication for osteoporosis, then 1,000-1,200 mg may be a more appropriate goal, but this could require that you take supplements since it is difficult to eat that much calcium.

Studies show that a very small percentage of adults actually meet their goals for fruit, vegetables and whole grains, so if you cannot clean up your diet and add the foods recommended in the previous section, then a supplement may be necessary. I recommend calcium citrate plus vitamin D, but only in quantities that would make up the difference between what you eat and what you need. (As a side note, men should be very cautious about taking supplemental calcium and consuming a lot of high calcium foods, since excess calcium can increase the risk of prostate cancer.)

It appears that eating one serving a day of a high-calcium food, such as plain low-fat or non-fat yogurt, hard cheese, collard greens, turnip greens, milk, calcium-

Bone-Building Foods	
<ul style="list-style-type: none"> • Low fat and nonfat yogurt, milk and cheese • Almonds and walnuts • Sesame seeds and poppy seeds • Dark green leafy vegetables • Onions and garlic • Citrus fruit • Figs (fresh or dried) 	<ul style="list-style-type: none"> • Tofu, edamame, soy nuts and soy milk • Canned salmon and sardines with bones • Fish • White beans and black-eyed peas • Blackstrap molasses • Calcium-fortified juices • Green tea (hot, not iced) • Whole grains

fortified soy milk or orange juice, canned fish with bones or black-eyed peas, plus plenty of vegetables, nuts, seeds and whole grains, should provide you with adequate calcium. Alternatively, eating two servings of moderate-calcium foods a day, such as tofu, edamame, black beans, sesame seeds, almonds, blackstrap molasses, cottage cheese, white beans, bok choy, kale, spinach, or dried figs, along with plenty of vegetables, nuts, seeds and whole grains, should also meet your needs.

Vitamin D is vital to strong bones because it aids in calcium absorption. These two nutrients must be consumed adequately in order to maximize their collective bone-building benefits. Supplementing with vitamin D alone can reduce fracture incidence, as can supplementing with calcium alone, but combining the two confers a much greater reduction in fracture risk.

In studies where 700-800 International Units (IU) of supplemental vitamin D was given along with calcium, hip fractures were reduced by about 30%. In addition to increasing bone mineral density, vitamin D can increase muscle strength and improve balance, thus reducing risks of falls. Studies show that supplementing elderly individuals with vitamin D can reduce falls by as much as 20%.

There is growing evidence that vitamin D deficiency is widespread among adult women and men, which increases their risks of bone fractures, as well as certain cancers. Vitamin D is actually a hormone that our bodies make from a combination of cholesterol and ultraviolet (UVB) rays from the sun (yes, there are some good things about both cholesterol and sun exposure). Thanks to aggressive public health campaigns for sunscreen use, sun exposure and skin cancer rates have decreased dramatically. However, the incidence of vitamin D deficiencies has increased at the same time. Some vitamin D

can be obtained through what we eat, but it is unlikely that diet alone can meet our needs. Eggs and fatty fish, like salmon and sardines, naturally contain some vitamin D, and milk, some breakfast cereals and orange juice are fortified with vitamin D. Supplements or a little bit of controlled sun exposure should help provide the balance of our needs. It is important not to guess how much you need to supplement, though. Ask your doctor for a blood test to help determine the dose that is right for you. Generally, 800-1000 IU of vitamin D3 (not D2) is a good amount to supplement with, but discuss it with your doctor first.

Whether you are old or young, male or female, tall or short, there are things you can do starting today to lower your fracture risk. Lifestyle factors such as regular physical activity, eating healthfully, not smoking and limiting alcohol are things that we should all manage for bone health and general health.



Jessica's Store Appearances
Service Deli Sampling

Jessica will be sampling some of her healthful salads from our Service Deli and answering your questions about cooking, food and nutrition.

Century City
Friday, December 4, 12:00pm

Newport Beach
Monday, December 7, 12:00pm

West Hollywood
Friday, December 11, 12:00pm

Santa Barbara
Saturday, December 12, 12:00pm

North Hollywood
Monday, December 14, 12:00pm

Century City
Thursday, December 17, 12:00pm

Can You Taste It?

We all remember the elementary school science lesson about sweet, sour, salty and bitter tastes and, until recently, there were only four identified tastes (so don't start thinking that your science teacher didn't do her homework!). However, a scientist in Japan actually identified and named umami—the “fifth” taste—about 100 years ago, hence the Japanese-sounding name, which translates to mean “delicious essence.” Umami has been kept a secret for quite some time, but in the 1980s, several studies confirmed that umami was indeed the fifth taste. The fifth taste is subtle, but can best be described as savory. The important thing to know, though, is that understanding umami can help make you a better cook, since umami's essential role is to enhance flavor.

Three of the most familiar umami foods are tomatoes, soy sauce and Parmigiano Reggiano cheese. If an umami food is paired with a sweet or salty food, it will magnify and round out the sweetness or saltiness—think about how a sprinkling of Parmigiano Reggiano cheese enhances your spaghetti marinara. If umami is paired with a sour or bitter food, it will mute those unpleasant flavors—as in Asian cooking where bitter greens like cabbage and bok choy are cooked with soy sauce to quiet the bitter taste and enhance the overall flavor of the dish.

Umami really magnifies the taste of savory foods by extending the amount of time the flavors linger on your tongue. For example, the richness of a steak eaten with sautéed onions lingers in your mouth long after you have swallowed. Another great way to understand how umami works is to think about drinking an earthy, bold red wine (wine contains umami). If you drink it while eating a sweet food, like a fruity dessert, the sweetness in the dessert will bring out the bitterness in the wine and cancel any sweetness that existed. Yuck. On the other hand, if you drink the wine while eating cheese, which contains salty and astringent elements, the taste of both the cheese and the wine will be greatly enhanced by the pairing and the sweetness in the wine will be magnified.



Umami foods are naturally rich in the amino acid glutamate (Monosodium Glutamate, or MSG, was the first artificial umami flavor). The savory flavor of umami is that of the isolated amino acid glutamine, which you can see and taste distinctly in a wedge of parmesan cheese. Those white crystals covering the cheese are actually the glutamate that has formed in the aging process and they contain the umami taste that gives the cheese its unique flavor. The processes of aging, curing and fermenting, in fact, bring out the umami in foods (prosciutto, cheese and balsamic vinegar are good examples of this). Many people cannot identify the taste of umami on its own, but that is not a problem as long as the person doing the cooking understands and applies the principles of using the different taste combinations to enhance the flavor of what they are cooking. To help you put umami to use, I have compiled a list of umami-containing foods. Use them in combination with one another or use them to help enhance or mute the other four tastes in whatever foods you prepare. Who knows, with the help of umami, you may even learn to love a previously hated bitter vegetable! This month, try my recipes for Filet Mignon with Cherry-Balsamic Reduction, Thai Red Curry Vegetables and Sautéed Mixed Mushrooms. *Bon Appétit*—or should I say *Bon Umami*?

Umami Foods

VEGETABLES

- Asparagus
- Carrots
- Chinese cabbage
- Enoki mushrooms
- Olives
- Onions
- Porcini mushrooms
- Potatoes
- Seaweed
- Shiitake mushrooms
- Soy beans
- Sweet potatoes
- Tomatoes
- Truffles

CONDIMENTS & SEASONINGS

- Anchovy paste
- Balsamic vinegar
- Bouillon
- Fish sauce
- Ketchup
- Miso
- Oyster sauce
- Soy sauce
- Tomato paste
- Tomato sauce
- Worcestershire sauce

PROTEIN-RICH FOODS

- Bacon
- Beef
- Bonito flakes
- Chicken
- Clams
- Cod
- Cured ham
- Cured salami
- Mackerel
- Other cheeses
- Oysters
- Parmigiano Reggiano cheese
- Pork
- Sardines
- Scallops
- Sea bream
- Shrimp
- Squid
- Tuna

BEVERAGES

- Green tea
- Wine