

Bones Keep Growing

Do you think of your bones as solid, permanent structures? They're not! Bone tissue continually renews throughout your life, just like your skin, blood and other tissues. Two types of specialized bone cells are busy all the time – one building new bone, the other dissolving

old bone and whisking it away. This process is called “bone remodeling.” It is the way your body repairs tiny microfractures and other defects to ensure that your bones remain strong and durable. When viewed through a microscope, strong, healthy bone cells appear like girders supporting a bridge.

In your childhood and teenage years, the bone-building cells outperform the bone-removing

cells so that your bones grow both in size and density. Even after you stop growing, your bones still gain density up until about age 30. That's when you achieve “peak bone mass.” It's very important that you build a strong skeletal foundation to this point because from then on, the bone-building cells slowly become less dominant.

The Role of Hormones

Several hormones play strong roles in bone health, including estrogen in women and testosterone in men. These hormones help control the balance between bone building and bone destruction. When women reach menopause and estrogen levels begin to decline, the rate of bone loss can increase dramatically.

In the past few decades, many women took hormone-replacement therapy (HRT) to counter increased bone loss. Today, however, more and more women are electing not to use HRT after discussing its potential risks with their doctors. Consequently, they may be at increased risk for osteoporosis.

What Is Osteoporosis?

Osteoporosis is a metabolic bone condition characterized by low bone mass and gradual deterioration of bone tissue. The bones become fragile; under a microscope, the cells appear wispy and porous, like cobwebs strung together. The bones of the spine can begin to collapse upon each other, creating what was once called a “dowager's hump.” In very serious cases of osteoporosis, even a slight jolt or bump can cause a bone to fracture.

Hip fractures are a big health threat among older people, especially women. According to a report by the U.S. Surgeon General, as many as 20% of older people with an osteoporosis-related fracture end up in a nursing home within a year of the fracture. Even when osteoporosis does not lead to fractures, it often curtails a person's activity and independence.

Certain medications are available to stabilize bone metabolism and reduce further bone loss. However, no medicine can make osteoporotic bones young again. This underscores why it is so important to *build strong bones while you are young*, and then to do everything you can to keep them strong in your adult years.

Diet and Lifestyle Are Big Players in Bone Health!

Although your genes partly rule your bone health, lifestyle factors play a significant role, too. These are the things you can control. Calcium is a nutrient often associated with bone health but many other nutrients contribute to bone health: vitamin D, vitamin K, potassium, magnesium, protein, vitamin C and some B vitamins, to name a few. Besides nutrition, other factors also are important. For example, weight-bearing exercise helps strengthen bones, while excessive alcohol intake and smoking can harm them.

Soy foods can be a good source of calcium if they're enriched, such as calcium-enriched soymilk or tofu. In addition, recent studies show soy consumption can improve both bone density the overall quality of the



bone. Research also has shown that soy protein acts to protect bone health and bone mass.



Over the past decade, evidence has grown that suggests a component of soyfoods, called “isoflavones,” may benefit bone health. Soy isoflavones have weak estrogen-like effects in the

body and direct the activities of the bone-dissolving and bone-building cells. As a result, bone loss slows and bone mineral density improves.

Studies show that postmenopausal women who eat higher amounts of soyfoods have less bone loss and fewer bone fractures than women who consume little soy. Although their effect is not nearly as strong as that of estrogen, soy isoflavones may be particularly valuable for postmenopausal women when natural estrogen production tapers off.

How Can I Get More Soy in My Diet?

As an excellent source of calcium (300 mg per 8-ounce serving), soymilk is a terrific choice for women concerned about their bone health. However, different brands of soymilk provide different types of calcium, so it is important to choose one with highly absorbable calcium, such as Silk™.

Soymilk is also fortified with vitamin D, which, along with calcium, is crucial for bone health. Vitamin D not only helps the body absorb calcium from the diet, it can stimulate the bone-building process. Vitamin D is actually made by the skin when it is exposed to the ultraviolet light from the sun. However, several factors, including age, skin pigmentation, use of sunscreens, and distance from the equator, can affect the skin’s ability to produce vitamin D.

Since few foods contain a significant amount of vitamin D, fortified foods like soymilk are considered

an excellent source of vitamin D. Silk soymilk contains 30 percent of the Daily Value for vitamin D.

Soy milk is also ideal for bone health because it provides vitamin A, riboflavin, vitamin B12, folate, vitamin D, potassium and high-quality protein and 20 to 40 milligrams of isoflavones per cup. Soybeans, soymilk, meat substitutes made with soy, tofu, and products made with soy flour can also contribute soy protein and isoflavones to your diet. Unfortunately, soybean oil (present in many processed foods) and soy sauce are not good sources of soy isoflavones or soy protein.

Many delicious new food and beverage products made with soy are available today. Even people who think they may not care for soy will be pleasantly surprised by the taste and variety of soy foods – from smoothies to snack crisps to “soynog” eggnog! In addition, many tasty recipes and entire cookbooks have been created to help Americans learn how to include more soy in their diets.



These easy and mouthwatering recipes can get you started on a healthy soy habit!

*Cinnamon French Toast

Serves 6

3 large eggs

¾ cup Silk Nog or Vanilla Silk

2 teaspoons vanilla extract

¼ teaspoon cinnamon

⅛ teaspoon freshly grated nutmeg

Six 1-inch thick slices cinnamon swirl or any sliced bread

2 tablespoons unsalted butter

Sifted powdered sugar for topping

In large bowl, whisk together eggs, soymilk, vanilla, cinnamon and nutmeg. Place bread slices in flat casserole dish and cover with egg mixture. Let soak for 5-10 minutes.

Heat non-stick skillet over medium heat and melt 1 tablespoon of butter. Add slices of soaked bread and cook until golden brown. Top the French toast with maple syrup or fruit and sprinkle with powdered sugar.



*White Corn Chowder

Serves 6

- 1 tablespoon olive oil or unsalted butter
- 1 large leek, white and pale green parts only, cleaned and diced
- 1 rib celery, finely diced
- 2 shallots, minced
- 1 clove garlic, minced
- 3 cups vegetable broth
- 2 cups plain *Silk* soymilk
- 2 cups fresh or frozen (thawed) corn kernels
- 2 medium potatoes, peeled and finely diced
- 1 bay leaf
- ½ teaspoon fresh thyme
- 1 teaspoon kosher salt
- ½ red bell pepper, seeded and finely diced
- freshly ground pepper
- 1 to 2 tablespoons chives or fresh tarragon for garnish.

Heat oil in heavy stockpot or Dutch oven over medium heat. Add leeks, celery, shallots, and garlic and cook over medium heat for 3-4 minutes. Add vegetable broth, soymilk, corn kernels, potatoes, bay leaf, thyme, and salt. Bring to a boil and simmer for 5-7 minutes or until potatoes are tender. Remove 1 cup of the vegetables and ½ cup broth. Puree in food processor or blender until smooth and return to pot. Add bell pepper and simmer another 2 minutes. Season with pepper to taste and garnish with chopped chives.

*Wild Honey Rice Pudding

Serves 6

- Canola cooking spray
- ⅓ cup short-grain white rice
- 1 ½ cups water
- ⅛ teaspoon kosher salt
- ⅛ teaspoon ground cinnamon
- ⅛ teaspoon ground cardamom
- ⅛ teaspoon freshly grated nutmeg, plus more for garnish
- ⅓ cup raisins
- 4 large eggs
- 5 tablespoons sugar
- 2 tablespoons honey
- 2 cups plain *Silk* soymilk
- ¼ cup *Silk* soy creamer
- 1 teaspoon vanilla extract

Preheat oven to 325 degrees F. Coat shallow casserole dish with cooking spray. Place rice, water and salt in 2-quart saucepan over medium-high heat and bring to boil. Cover, reduce heat to medium and cook at low boil for 15 minutes. Drain and put into medium bowl. Add cinnamon, cardamom, nutmeg and raisins. Place in shallow casserole dish. Bring kettle of water to a boil for the water bath and keep hot.

In separate bowl, whisk together the egg, sugar and honey. Bring soymilk to a bare simmer in small saucepan. Remove from heat and very slowly whisk into the egg mixture. Fill shallow casserole dish with the soymilk mixture. Grate some fresh nutmeg over each ramekin. Create a hot water bath by filling a larger pan or dish 1 inch up the sides with the hot water. Place pan in oven and bake for 40-45 minutes. Serve warm or cold.



From *Hollywood Dish*, courtesy of Akasha Richmond.

What You Can Do

No matter your age, it's never too soon or too late to start taking better care of your bones. As an added bonus, the changes you make for bone health are the same changes that can benefit many other areas of your health as well.

- Increase your calcium intake to at least 1,000 mg a day – and more if you are a teenager or over age 50. Sources include cow's milk or calcium carbonate-fortified soymilk, cheese, yogurt, leafy green vegetables.

***Bonus:** Some studies found that young women on a weight-loss diet and taking calcium had an easier time losing weight. Leafy green vegetables provide a host of other nutrients that are good for your health.*

- Be more physically active. Experts recommend at least 30 minutes daily of whatever you like to do best: walking, dancing, cycling, jogging, playing sports.

***Bonus:** Physical activity helps control weight, keeps your joints moving and helps your cardiovascular system.*

- If you smoke, quit.
- Limit alcohol to one drink daily.

***Bonus:** One drink a day (for women) has been linked to heart health; more alcohol than that, however, does no extra good and may begin to do harm.*

- Get about five-to-10 minutes of sunshine daily so that your skin can produce vitamin D. To get vitamin D in your diet, eat oily fish such as tuna, salmon and herring, drink soymilk or fortified cow's milk, and take calcium or vitamin supplements that include vitamin D.

***Bonus:** Adequate vitamin D has been linked to reduced risk for certain cancers.*

- Eat plenty of fruits and vegetables to provide the wide array of other nutrients bones need.

***Bonus:** Fruits and vegetables not only are vitamin- and mineral-rich, they also provide antioxidants and colorful compounds linked to cardiovascular health and reduced risk for cancer.*

Want to Learn More?

For more information about soy and your health, as well as information about soy food sources, recipes and meal tips, visit www.soynutrition.com

