

Bone Health: A Guide for Families

Bone Health

Your bones are an important part of your body and store very important minerals. Did you know that your bones gain strength until you are 20-30 years of age and then at an older age you start losing bone strength? The amount of bone you gain during childhood can protect you from weak bones and fractures later in life. Your bone strength is like a bank account-the more money in the bank, the stronger the account becomes!

So how do you develop a good bone bank?

Bone strength is mostly determined by your genes, but you can still make a difference through healthy diet and exercise. Here are 3 important things that you could do to keep your bone bank account full:

1. **Calcium:** Calcium is a very important mineral that strengthens bones. The recommended intake of calcium varies with age (**Table 1**). Dairy products and non-dairy foods (breads, cereals) fortified with calcium are good sources of calcium (**Table 2**). You can also get calcium through calcium supplements if you do not eat enough calcium-rich foods. Different calcium supplements have different amounts of calcium. We recommend you read the label to find out how much calcium is provided in each supplement and talk to your healthcare provider about how much is right for you. Too much calcium is not healthy either and can be harmful to the kidneys.
2. **Vitamin D:** Vitamin D is a hormone that helps absorb calcium from the intestines and kidneys and store calcium in bones. It can be made by the body with sunlight exposure. However, in the winter season or with inadequate exposure to sunlight, your body may not be able to make

enough vitamin D. In these situations, your doctor may recommend that you take supplements. Vitamin D supplements are available at various pharmacies and grocery stores without a prescription. Most multivitamins contain 400 units of vitamin D. Please read the label carefully and talk to your healthcare provider about the dose that is right for you. Some Vitamin D supplements are dosed in milliliters (mL) and some are dosed in drops. See **Table 1** for the recommended daily intake of vitamin D.

3. **Physical Activity:** Weight bearing exercises such as jump roping, basketball, soccer, and gymnastics are good for your bones. So get out there and have some fun! Centers of Disease Control and prevention recommends 60 minutes of moderate to vigorous physical activity daily in an enjoyable setting for all children and young adults.

Other Factors important for bone health

Hormones: Different hormones have a variable effect on bone. Growth hormone and puberty hormones have a positive impact, whereas steroids and excess thyroid hormones can hurt bone health. If you have any disorder of hormone production, be sure to talk to your doctor about ways to optimize bone health.

Medications: Certain medications like steroids are known to cause bone loss and decrease bone formation. If you have a disease that requires long-term steroid use, make sure you take the recommended dose of calcium and vitamin D to optimize your bone health. You may also benefit from formal testing of your bone health and certain medications that improve bone strength.

Table 1. Recommended daily calcium and vitamin D intake

Calcium Age	Vitamin D (mg/day)	(IU/day)
1-3 years	700	600
4-8 years	1,000	600
9-18 years	1,300	600
19-50 years	1,000	600

Ref: Institute of Medicine (IOM) recommendations Nov 2010

Table 2. Foods rich in calcium

Food	Calcium (mg)
Fortified oatmeal, 1 packet	350
Sardines, canned in oil with edible bones, 3 oz	324
Cheddar cheese, 1 ½ oz	306
Milk nonfat, 1 cup	300
Milkshake, 1 cup	300
Yogurt plain, low-fat, 1cup	300
Soybeans cooked, 1 cup	261
Tofu, firm with calcium, 1/2cup	204
Orange juice fortified with calcium, 6oz	200-260
Salmon canned with edible bones, 3 oz	181
Pudding, instant made with 2% milk, 1/2 cup	153
Baked beans, 1cup	142
Cottage cheese, 1% milk fat, 1 cup	138
Spaghetti, lasagna, 1 cup	125
Frozen yogurt, vanilla, soft serve ½ cup	103
Ready to eat cereal, fortified with calcium 1cup	100-1000
Cheese pizza 1 slice	100
Fortified waffles, 2	100
Turnip greens, boiled, ½ cup	99
Broccoli, raw, 1 cup	90
Ice cream, vanilla, ½ cup	85
Soy or rice mild fortified with calcium 1 cup	80-500

Source: Surgeon General's Report on Bone Health and Osteoporosis: What it Means to You. US Department of Health and Human Services, 2004, pages 12-13.

To learn more about bone health, you can use these excellent web resources.

[NIH osteoporosis and related bone diseases national resource center](http://niams.nih.gov/Health_Info/bone/default.asp)

http://niams.nih.gov/Health_Info/bone/default.asp

<http://www.bestbonesforever.gov/>



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