

BONE HEALTH

Patient Information Fact Sheet

›Why is bone health important?

Bones, like other parts of the body, consist of living tissue that is constantly being broken down and rebuilt. Because bones are living they need constant nourishment, including calcium and vitamin D, to keep them strong.

›What factors influence bone health?

The strength of your bones is decided in part at birth and results from the characteristics you inherit from your parents. Women have thinner bones than men and a high amount of calcium is lost from their bones following menopause. This is caused by the loss of estrogen, which normally protects bones and helps maintain bone health.

Lifestyle factors also come into play. Smoking, drinking excessive alcohol, and high protein or salt intake can all result in more calcium being lost from your bones.

›Who is at risk of poor bone health?

Women are more at risk than men because of their thinner bones and the loss of calcium associated with menopause. Young women who lose a lot of weight or diet repeatedly or those who exercise excessively are particularly at risk. Women who have an early menopause (before the age of 45 years) and those on long-term corticosteroid treatment are also more at risk. Men still do suffer from poor bone health although usually later in life than women.

›What tests measure bone health?

One way of finding out how healthy your bones are is to measure your bone density. This gives an indication of how strong your bones are. DXA, or dual-energy x-ray absorptiometry, is an enhanced form of x-ray technology that is used to measure bone loss. Your doctor may also send you for a blood test to make sure there are no other medical problems causing a low bone density.

›How can I maintain bone health?

Prevention is always better than cure. However, if you have not considered your bone health until now, then it is not too late to start.

- Eating a diet high in calcium is important throughout life (see below). **Calcium** is contained in foods such as milk, cheese and yogurt. If you do not like or do not eat sufficient dairy foods, then you may benefit from a calcium supplement. **Vitamin D** is also important for strong healthy bones because it is needed to absorb calcium from foods.
- Doing regular weight-bearing exercise is important to help maintain bone health. Most hip or wrist fractures result from falls. Even gentle exercise can help you maintain your balance and hence prevent falls. Take a look around your home and try to correct any potential safety hazards, such as cords, cluttered stairs, etc.
- Smoking can cause menopause to start several years earlier and is one of the risk factors for poor bone health, as is heavy drinking. So, it makes sense to stop smoking and cut down the amount of alcohol you drink.

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- **Hormone replacement therapy (HRT)** helps prevent the rapid loss of bone density after menopause and your doctor may recommend this form of treatment.
- If you already have a low bone density your doctor may prescribe a medicine to help to maintain your bone health and prevent further loss. Examples of such drugs include a group called the **bisphosphonates** such as **alendronate** (Fosamax, Binosto), **etidronate**, **ibandronate** (Boniva), **risedronate** (Actonel, Atelvia), **zoledronic acid** (Reclast injection). **Raloxifene** (Evista) is another type of drug used to maintain bone density in postmenopausal women. Other treatments that may be prescribed include **calcitonin-salmon** (eg. Miacalcin injection, Fortical nasal spray), **denosumab** (Prolia), and **teriparatide** (Forteo).

➤ **Further information**

NIH Osteoporosis and Related Bone Diseases National Resource Center:
www.niams.nih.gov/Health_Info/Bone/Osteoporosis

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Selected Food Sources of Calcium

FOOD	MILLIGRAMS (MG) PER SERVING	PERCENT DV*
Yogurt, plain, low fat, 8 ounces	415	42
Orange juice, calcium-fortified, 6 ounces	261	26
Yogurt, fruit, low fat, 8 ounces	313–384	31–38
Mozzarella, part skim, 1.5 ounces	333	33
Sardines, canned in oil, with bones, 3 ounces	325	33
Cheddar cheese, 1.5 ounces	307	31
Milk, nonfat, 8 ounces**	299	30
Milk, reduced-fat (2% milk fat), 8 ounces	293	29
Milk, buttermilk, lowfat, 8 ounces	284	28
Milk, whole (3.25% milk fat), 8 ounces	276	28
Tofu, firm, made with calcium sulfate, ½ cup***	253	25
Salmon, pink, canned, solids with bone, 3 ounces	181	18
Cottage cheese, 1% milk fat, 1 cup	138	14
Tofu, soft, made with calcium sulfate, ½ cup***	138	14
Instant breakfast drink, various flavors and brands, powder prepared with water, 8 ounces	105–250	10–25
Frozen yogurt, vanilla, soft serve, ½ cup	103	10
Ready-to-eat cereal, calcium-fortified, 1 cup	100–1,000	10–100
Turnip greens, fresh, boiled, ½ cup	99	10
Kale, fresh, cooked, 1 cup	94	9
Kale, raw, chopped, 1 cup	100	10
Ice cream, vanilla, ½ cup	84	8
Soy beverage, calcium-fortified, 8 ounces	80–500	8–50
Chinese cabbage, bok choy, raw, shredded, 1 cup	74	7
Bread, white, 1 slice	73	7
Pudding, chocolate, ready to eat, refrigerated, 4 ounces	55	6
Tortilla, corn, ready-to-bake/fry, one 6" diameter	46	5
Tortilla, flour, ready-to-bake/fry, one 6" diameter	32	3
Sour cream, reduced fat, cultured, 2 tablespoons	31	3
Bread, whole-wheat, 1 slice	30	3
Broccoli, raw, ½ cup	21	2
Cheese, cream, regular, 1 tablespoon	14	1

Source: National Institutes of Health, Office of Dietary Supplements

* DV = Daily Value.

** Calcium content varies slightly by fat content; the more fat, the less calcium the food contains.

*** Calcium content is for tofu processed with a calcium salt. Tofu processed with other salts does not provide significant amounts of calcium.