



# What People With Anorexia Nervosa Need To Know About Osteoporosis

## National Institutes of Health Osteoporosis and Related Bone Diseases National Resource Center

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## What is anorexia nervosa?

Anorexia nervosa is an eating disorder characterized by an irrational fear of weight gain. People with anorexia nervosa believe that they are overweight even when they are extremely thin.

Individuals with anorexia become obsessed with food and severely restrict their dietary intake. The disease is associated with several health problems and, in rare cases, even death. The disorder may begin as early as the onset of puberty. The first menstrual period is typically delayed in girls who have anorexia when they reach puberty. For girls who have already reached puberty when they develop anorexia, menstrual periods are often infrequent or absent.

## What is osteoporosis?

Osteoporosis is a condition in which the bones become less dense and more likely to fracture. Fractures from osteoporosis can result in significant pain and disability. In the United States, more than 53 million people either already have osteoporosis or are at high risk due to low bone mass.

Risk factors for developing osteoporosis include:

- Thinness or small frame.
- Family history of the disease.
- Being postmenopausal and particularly having had early menopause.
- Abnormal absence of menstrual periods (amenorrhea).
- Prolonged use of certain medications, such as those used to treat lupus, asthma, thyroid deficiencies, and seizures.
- Low calcium intake.
- Lack of physical activity.
- Smoking.
- Excessive alcohol intake.

Osteoporosis often can be prevented. It is known as a silent disease because, if undetected, bone loss can progress for many years without symptoms until a fracture occurs. Osteoporosis has been called a childhood disease with old age consequences because building healthy bones in youth helps prevent osteoporosis and fractures later in life. However, it is never too late to adopt new habits for healthy bones.

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## The link between anorexia nervosa and osteoporosis

Anorexia nervosa has significant physical consequences. Affected individuals can experience nutritional and hormonal problems that negatively impact bone density. Extremely low body weight in females can cause the body to stop producing estrogen, resulting in a condition known as amenorrhea, or absent menstrual periods. Low estrogen levels contribute to significant losses in bone density.

In addition, individuals with anorexia often produce excessive amounts of the adrenal hormone cortisol, which is known to trigger bone loss. Other problems, such as a decrease in the production of growth hormone and other growth factors, low body weight (apart from the estrogen loss it causes), calcium deficiency, and malnutrition, may contribute to bone loss in girls and women with anorexia. Weight loss, restricted dietary intake, and testosterone deficiency may be responsible for the low bone density found in males with the disorder.

Studies suggest that low bone mass is common in people with anorexia and that it occurs early in the course of the disease. Girls with anorexia may be less likely to reach their peak bone density and therefore may be at increased risk for osteoporosis and fracture throughout life.

## Osteoporosis management strategies

Anorexia is often identified during mid- to late adolescence, a critical period for bone development. The longer the duration of the disorder, the greater the bone loss and the less likely it is that bone mineral density will ever return to normal. The primary goal of medical therapy for individuals with anorexia is weight gain and, in females, the return of normal menstrual periods. However, attention to other aspects of bone health is also important.

**Nutrition.** A well-balanced diet rich in calcium and vitamin D is important for healthy bones. Good sources of calcium include low-fat dairy products; dark green, leafy vegetables; and calcium-fortified foods and beverages. Supplements can help ensure that people get adequate amounts of calcium each

day, especially in people with a proven milk allergy. The Institute of Medicine recommends a daily calcium intake of 1,000 mg (milligrams) for men and women up to age 50. Women over age 50 and men over age 70 should increase their intake to 1,200 mg daily.

Vitamin D plays an important role in calcium absorption and bone health. Food sources of vitamin D include egg yolks, saltwater fish, and liver. Many people may need vitamin D supplements to achieve the recommended intake of 600 to 800 International Units (IU) each day.

**Exercise.** Like muscle, bone is living tissue that responds to exercise by becoming stronger. The best activities for your bones are weight-bearing and resistance exercises. Weight-bearing exercises force you to work against gravity. They include walking, climbing stairs, and dancing. Resistance exercises – such as lifting weights – can also strengthen bones.

Although walking and other types of regular exercise can help prevent bone loss and provide many other health benefits, these potential benefits need to be weighed against the risk of fractures, delayed weight gain, and exercise-induced amenorrhea in people with anorexia and those recovering from the disorder. For these reasons, individuals recovering from anorexia should speak with a doctor before beginning an exercise program.

**Healthy lifestyle.** Smoking is bad for bones as well as the heart and lungs. In addition, people who smoke may absorb less calcium from their diets. Alcohol also can have a negative effect on bone health.

**Bone density test.** A bone mineral density (BMD) test measures bone density in various parts of the body. This safe and painless test can detect osteoporosis before a fracture occurs and can predict a person's chances of fracturing in the future. The BMD test can help determine whether medication should be considered.

**Medication.** There is no cure for osteoporosis. However, medications are available to prevent and treat the disease in postmenopausal women, men,

and both women and men taking glucocorticoid medication.

## Resources

For more information on osteoporosis, contact the:

**NIH Osteoporosis and Related Bone Diseases  
National Resource Center**

Website: <https://www.bones.nih.gov>

For more information on anorexia, contact the:

**National Institute of Mental Health**

Website: <https://www.nimh.nih.gov>

If you need more information about available resources in your language or another language, please visit our website or contact the NIH Osteoporosis and Related Bone Diseases ~ National Resource Center.

## For your information

This publication contains information about medications used to treat the health condition discussed here. When this publication was developed, we included the most up-to-date (accurate) information available. Occasionally, new information on medication is released.

For updates and for any questions about any medications you are taking, please contact the U.S. Food and Drug Administration (FDA) toll free at 888-INFO-FDA (463-6332) or visit its website at <https://www.fda.gov>. For additional information on specific medications, visit Drugs@FDA at <https://www.accessdata.fda.gov/scripts/cder/daf>. Drugs@FDA is a searchable catalog of FDA-approved drug products.

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