



**National Institutes of Health  
Osteoporosis and Related  
Bone Diseases ~  
National Resource Center**

2 AMS Circle  
Bethesda, MD 20892-3676

**Tel:** 800-624-BONE or  
202-223-0344

**Fax:** 202-293-2356

**TTY:** 202-466-4315

**Internet:** [www.niams.nih.gov/bone](http://www.niams.nih.gov/bone)  
**E-mail:** [NIAMSBoneInfo@  
mail.nih.gov](mailto:NIAMSBoneInfo@mail.nih.gov)

The NIH Osteoporosis and Related Bone Diseases ~ National Resource Center is supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases with contributions from the National Institute on Aging, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, the National Institute of Dental and Craniofacial Research, the National Institute of Diabetes and Digestive and Kidney Diseases, the NIH Office of Research on Women's Health, and the HHS Office on Women's Health.

*The National Institutes of Health (NIH) is a component of the U.S. Department of Health and Human Services (HHS).*



# What People Recovering From Alcoholism Need to Know About Osteoporosis

## Alcoholism and Recovery

According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), nearly 14 million Americans – or 1 in 13 adults – abuse alcohol or are alcoholic. Alcoholism is a disease characterized by a dependency on alcohol.

Because alcohol affects almost every organ in the body, chronic heavy drinking is associated with many serious health problems, including pancreatitis, liver disease, heart disease, cancer, and osteoporosis. In fact, NIAAA estimates that the economic costs of alcohol abuse approach \$185 billion per year.

Maintaining sobriety is undoubtedly the most important health goal for individuals recovering from alcoholism. However, attention to other aspects of health, including bone health, can help increase the likelihood of a healthy future, free from the devastating consequences of osteoporosis and fracture.

## Facts About Osteoporosis

Osteoporosis is a condition in which bones become less dense and more likely to fracture. Fractures from osteoporosis can result in significant pain and disability. Osteoporosis is a major health threat for an estimated 44 million Americans, 68 percent of whom are women.

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 one's youth helps prevent osteoporosis and fractures later in life. However, it is never too late to adopt new habits for healthy bones.

### **The Link Between Alcohol and Osteoporosis**

Alcohol negatively affects bone health for several reasons. To begin with, excessive alcohol interferes with the balance of calcium, an essential nutrient for healthy bones. It also increases parathyroid hormone levels, which in turn reduce the body's calcium reserves. Calcium balance is further disrupted by alcohol's ability to interfere with the production of vitamin D, a vitamin essential for calcium absorption.

In addition, chronic heavy drinking can cause hormone deficiencies in men and women. Men with alcoholism tend to produce less testosterone, a hormone linked to the production of osteoblasts (the cells that stimulate bone formation). In women, chronic alcohol exposure often produces irregular menstrual cycles, a factor that reduces estrogen levels, increasing the risk for osteoporosis. Also, cortisol levels tend to be elevated in people with alcoholism. Cortisol is known to decrease bone formation and increase bone breakdown.

Because of the effects of alcohol on balance and gait, people with alcoholism tend to fall more frequently than those without the disorder. Heavy alcohol consumption has been linked to an increase in the risk of fracture, including the most serious kind – hip fracture. Vertebral fractures are also more common in those who abuse alcohol.

### **Osteoporosis Management Strategies**

The most effective strategy for alcohol-induced bone loss is abstinence. People with alcoholism who abstain from drinking tend to have a rapid recovery of

osteoblastic (bone-building) activity. Some studies have even found that lost bone can be partially restored when alcohol abuse ends.

**Nutrition:** Because of the negative nutritional effects of chronic alcohol use, people recovering from alcoholism should make healthy nutritional habits a top priority. As far as bone health is concerned, a well-balanced diet rich in calcium and vitamin D is critical. Good sources of calcium include low-fat dairy products; dark green, leafy vegetables; and calcium-fortified foods and beverages. Supplements can help ensure that you 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, increasing to 1,200 mg for those age 50 and older.

Vitamin D plays an important role in calcium absorption and bone health. It is synthesized in the skin through exposure to sunlight. Food sources of vitamin D include egg yolks, saltwater fish, and liver. Many people obtain enough vitamin D by getting about 15 minutes of sunlight each day; others, especially those who are older or housebound, may need vitamin D supplements to achieve the recommended intake of 400 to 600 IU (International Units) each day.

**Exercise:** Like muscle, bone is living tissue that responds to exercise by becoming stronger. The best exercise for your bones is weight-bearing exercise that forces you to work against gravity. Some examples include walking, climbing stairs, weight training, and dancing. Regular exercise, such as walking, may help prevent bone loss and will provide many other health benefits.

**Healthy lifestyle:** Smoking is bad for bones as well as the heart and lungs. Women who smoke tend to go through menopause earlier, resulting in earlier reduction in levels of the bone-preserving hormone estrogen and triggering earlier bone loss. In addition, smokers may absorb less calcium from their diets. Studies suggest that in people recovering from alcoholism, smoking cessation may actually enhance abstinence from drinking. Many suspect that smokers who abuse alcohol tend to be more dependent on nicotine than those who don't; therefore, a formal smoking cessation program may be a worthwhile investment for individuals in recovery. Alcohol also can have a negative effect on bone health. Those who drink heavily are more prone to bone loss and fracture, because of both poor nutrition and increased risk of falling.

**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 one's chances of fracturing in the future. The BMD test can help determine whether medication should be considered.

Individuals in recovery are encouraged to talk to their health care providers about whether they might be candidates for a BMD test.

**Medication:** There is no cure for osteoporosis. However, medications are available to prevent and treat osteoporosis. The Food and Drug Administration has approved several medications (alendronate, risedronate, ibandronate, zoledronic acid, raloxifene, calcitonin, teriparatide, and estrogen/hormone therapy) for the prevention and/or treatment of osteoporosis in postmenopausal women. Alendronate and risedronate also are approved for use in men. For people with or at risk for glucocorticoid-induced osteoporosis, alendronate (for treatment) and risedronate (for prevention and treatment) are approved.

## Resources

**For more information on osteoporosis,** visit the National Institutes of Health Osteoporosis and Related Bone Diseases ~ National Resource Center Web site at [www.niams.nih.gov/bone](http://www.niams.nih.gov/bone) or call 800–624–2663.

**For more information on alcohol abuse and alcoholism,** visit the National Institute on Alcohol Abuse and Alcoholism Web site at [www.niaaa.nih.gov](http://www.niaaa.nih.gov).

Reviewed January 2009

---

### For Your Information

This publication contains information about medications used to treat the health condition discussed here. When this fact sheet was printed, 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 Food and Drug Administration at 888–INFO–FDA (888–463–6332, a toll-free call) or visit its Web site at [www.fda.gov](http://www.fda.gov).

For updates and questions about statistics, please contact the Centers for Disease Control and Prevention’s National Center for Health Statistics toll free at 800–232–4636 or visit its Web site at [www.cdc.gov/nchs](http://www.cdc.gov/nchs).

*Recognizing the National Bone and Joint Decade: 2002–2011*