



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

2 AMS Circle
Bethesda, MD 20892-3676

Phone: 202-223-0344
Toll free: 800-624-BONE
Fax: 202-293-2356
TTY: 202-466-4315

Email: NIAMSBoneInfo@
mail.nih.gov

Web site: www.niams.nih.gov/bone

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).



Oral Health and Bone Disease

Osteoporosis and tooth loss are health concerns that affect many older men and women. Osteoporosis is a condition in which the bones become less dense and more likely to fracture. This disease can affect any bone in the body, although the bones in the hip, spine, and wrist are affected most often. In the United States today, 10 million individuals already have osteoporosis and 34 million more have low bone mass, placing them at increased risk for this disease.

Research suggests a link between osteoporosis and bone loss in the jaw. The bone in the jaw supports and anchors the teeth. When the jawbone becomes less dense, tooth loss can occur. Tooth loss affects approximately one-third of adults age 65 and older.

Skeletal Bone Density and Dental Concerns

The portion of the jawbone that supports our teeth is known as the alveolar process. Several studies have found a link between the loss of alveolar bone and an increase in loose teeth (tooth mobility) and tooth loss. Women with osteoporosis are three times more likely to experience tooth loss than those who do not have the disease.

Low bone density in the jaw can result in other dental problems as well. For example, older women with osteoporosis may be more likely to have difficulty with loose or ill-fitting dentures and may have less optimal outcomes from oral surgical procedures.

Periodontal Disease and Bone Health

It is estimated that periodontal disease affects up to 80 percent of men and women in the United States. Periodontitis is a chronic infection that affects the gums and the bones that support the teeth. Bacteria and the body's own immune system break down the bone and connective tissue that hold teeth in place. Teeth may eventually become loose, fall out, or have to be removed.

Although tooth loss is a well-documented consequence of periodontitis, the relationship between periodontitis and skeletal bone density is less clear. Some studies have found a strong and direct relationship among bone loss, periodontitis, and tooth loss. It is possible that the loss of alveolar bone mineral density leaves bone more susceptible to periodontal bacteria, increasing the risk for periodontitis and tooth loss.

Role of the Dentist and Dental X Rays

Research supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) suggests that dental x rays may be used as a screening tool for osteoporosis. Researchers found that dental x rays were highly effective in distinguishing people with osteoporosis from those with normal bone density.

Because many people see their dentist more regularly than their doctor, dentists are in a unique position to help identify people with low bone density and to encourage them to talk to their doctors about their bone health. Dental concerns that may indicate low bone density include loose teeth, gums detaching from the teeth or receding gums, and ill-fitting or loose dentures.

Effects of Osteoporosis Treatments on Oral Health

It is not known whether osteoporosis treatments have the same beneficial effect on oral health as they do on other bones in the skeleton. Additional research is needed to fully clarify the relationship between osteoporosis and oral bone loss; however, scientists are hopeful that efforts to optimize skeletal bone density will have a favorable impact on dental health.

Bisphosphonates, a group of medications available for the treatment of osteoporosis, have been linked to the development of osteonecrosis of the jaw (ONJ), which is cause for concern. The risk of ONJ has been greatest in patients receiving large doses of intravenous bisphosphonates, a therapy used to treat cancer. The occurrence of ONJ is rare in individuals taking oral forms of the medication for osteoporosis treatment.

Taking Steps for Healthy Bones

A healthy lifestyle can be critically important for keeping bones strong. You can take many important steps to optimize your bone health:

- Eat a well-balanced diet rich in calcium and vitamin D.
- Engage in regular physical activity or exercise. Weight-bearing activities—such as walking, jogging, dancing, and weight training—are the best for keeping bones strong.
- Don't smoke, and limit alcohol intake.
- Report any problems with loose teeth, detached or receding gums, and loose or ill-fitting dentures to your dentist and your doctor.

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 or call 800-624-2663.

For more information on oral health, visit the National Institute of Dental and Craniofacial Research Web site at www.nidcr.nih.gov or call 301-496-4261.

Reviewed May 2009

For Your Information

This fact sheet 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 U.S. Food and Drug Administration at 888-INFO-FDA (-888-463-6332, a toll-free call) or visit its Web site at 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.