



Oral Health and Bone Disease

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

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Osteoporosis and tooth loss are health concerns that affect many older men and women. Osteoporosis is a disease in which the bones become less dense and more prone to fracture. This disease can affect any bone in the body, although the bones in the hip, spine, and wrist are most often affected. 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 that there is a link between osteoporosis and bone loss in the jaw. The bone in the jaw supports and anchors our teeth. When the jaw bone becomes less dense, tooth loss can occur. Tooth loss affects approximately one-third of adults 65 years and older.

Skeletal Bone Density and Dental Concerns

The portion of the jaw bone that supports our teeth is known as the alveolar process. Several studies have found that the loss of alveolar bone is linked to 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. The teeth may eventually become loose, fall out, or have to be removed.

While tooth loss is a well-documented consequence of periodontitis, the relationship between periodontitis and skeletal bone density is less clear. However, some studies have found a strong and direct relationship between 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.

The 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.

Since 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.

The 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. While additional research is needed to fully clarify the relationship between osteoporosis and oral bone loss, scientists are hopeful that efforts to optimize skeletal bone density will have a favorable impact on dental health.

Of concern is the fact that bisphosphonates, a group of medications available for the treatment of osteoporosis, have been linked to the development of osteonecrosis of the jaw (ONJ). The risk of ONJ has been greatest in those 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

There are many important steps you can take to optimize your bone health:

- Eat a well-balanced diet rich in calcium and vitamin D.
- Live a healthy lifestyle. Don't smoke, and if you choose to drink alcohol, do so in moderation.
- Engage in regular physical activity or exercise. Weight-bearing activities, such as walking, jogging, dancing, and lifting weights, are the best for strong bones.
- Report any problems with loose teeth, detached or receding gums, and loose or ill-fitting dentures to your dentist and doctor.

Resources

For additional information on osteoporosis, visit the NIH Resource Center's Web site at www.niams.nih.gov/bone or call 1-800-624-2663.

For additional information on oral health, visit the National Institute of Dental and Craniofacial Research Web site at www.nidcr.nih.gov or call 301-402-7364.

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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 U.S. Food and Drug Administration at 1-888-INFO-FDA (1-888-463-6332, a toll-free call) or visit their Web site at www.fda.gov.