

# Osteoporosis and Oral Health: Potential for Thinning Jaw Bones

No bones about it, osteoporosis is a concern for many individuals. Osteoporosis is a disease in which the bones become porous and brittle. As a result, the weakened bones are at increased risk for fracture. Each year an estimated 1.5 million people suffer a fracture because of osteoporosis. The hip, skeletal vertebrae, and wrist are the most common areas of involvement. Osteoporotic bone fractures can be painful and significantly impact a person's quality of life.

Although osteoporosis is more prevalent in postmenopausal women, it can strike at any age and affects both men and women. Approximately 10 million Americans are estimated to have this disease, and an additional 34 million individuals have low bone density. The diagnosis of osteoporosis is made by the physician based on a test which measures bone density called dual energy X-ray absorption (DXA). Several risk factors include small, thin body frame, family history of osteoporosis, diet low in calcium and vitamin D, inactive lifestyle, smoking, excessive alcohol consumption, and low estrogen levels. Some of these same risk factors play a role in the progression of periodontal disease and tooth loss.

## *What is the relationship between periodontitis and osteoporosis?*

Periodontitis is an inflammatory disease caused by bacterial plaque which destroys the bone supporting the teeth. Studies show that at least half of Americans older than 55 have periodontitis. An individual's susceptibility plays a major role in this disease process, just as it does in osteoporosis. One risk factor, smoking, has been linked to both periodontitis and osteoporosis. It seems logical that systemic bone destruction could also occur in the oral cavity, and indeed, a positive correlation between oral bone density and systemic density has been demonstrated. Some studies suggest that osteoporosis may lead to tooth loss because the density of the bone supporting the teeth is decreased, making it more susceptible to loss resulting from



periodontal inflammation. More research is needed to clarify the relationship between these 2 diseases.

### ***What medications are used to treat osteoporosis, and do they affect oral health?***

Osteoporosis is often treated with drugs called bisphosphonates, which block bone loss and effectively prevent bone fractures. Oral bisphosphonates are commonly prescribed for individuals with osteoporosis, while intravenous (IV) medications are used in the management of breast, prostate, and bone cancers. In rare cases, individuals receiving IV bisphosphonates for cancer have developed lesions of dead bone in the jaw called osteonecrosis. This is even more rare in persons taking the oral bisphosphonates. At present, the medical benefits of these medications strongly outweigh their potential side effects.

### ***What are the signs and symptoms of osteoporosis?***

- Back pain, which can be severe
- Loss of height over time, with an accompanying stooped posture
- Fracture of the vertebrae, wrists, hips, or other bones
- May not have any symptoms in early stages

### ***What are the signs and symptoms of periodontitis?***

- Gums that bleed easily
- Inflamed, swollen gum tissue
- Mobile teeth or shifting resulting in a change in tooth alignment

- Halitosis
- May not have any symptoms

### ***How can the risk for periodontitis and osteoporosis be reduced?***

- Schedule regular physical examinations by your physician including bone density tests for persons with risk factors for osteoporosis
- Schedule regular dental examinations and care
- Perform daily brushing and flossing
- Don't smoke
- Avoid excessive alcohol intake
- Eat a well-balanced diet with adequate calcium and vitamin D
- Engage in a regular exercise program

### ***In summary***

Currently, there seems to be a positive correlation between osteoporosis and thinning of the jaw bone. However, further investigation is warranted to better understand the exact nature of the link between osteoporosis and oral health. A healthy lifestyle and regular health care can aid in prevention and early diagnosis and treatment of both osteoporosis and periodontal disease.

### ***Additional resources:***

- American Dental Association: <http://www.ada.org>
- American Academy of Periodontology: <http://www.perio.org>
- National Osteoporosis Foundation: <http://www.nof.org>