

## The link between osteoporosis and periodontal disease

Osteoporosis and periodontal disease are both characterized by bone resorption. After menopause, bone loss rate is dramatically accentuated, which seems to potentially accelerate and/or aggravate periodontal tissue breakdown.

The dental biofilm induces the immune system to produce inflammatory factors. The inflammation around the teeth may lead to bone destruction and tooth mobility and loss.

The association between osteoporosis and periodontal disease can be explained by the fact that both conditions have common predisposing factors for bone loss. In osteoporosis, there is systemic bone loss, while in periodontal disease it is localized on the bone around the teeth.

### *The influence of osteoporosis and its treatment in periodontal condition*

Studies assessing the association between osteoporosis and periodontal disease differ widely in their methodology, techniques for periodontal examination and bone mineral density (BMD) assess. Despite such heterogeneity in study designs, most of them showed an association of low systemic BMD with periodontal disease and tooth loss.

Periodontal disease is more common in women with osteoporosis and vitamin D deficiency.

Supplementation of calcium and sufficient levels of vitamin D may lead to an increase in mandibular bone mass for postmenopausal women.

Antiresorptive therapy for low bone mass is a protective bone therapy. Bisphosphonates (BP) and denosumab are commonly prescribed drugs for managing osteoporosis. Bisphosphonates are highly concentrated in the jaws and have shown to act as blockers of tooth-supporting alveolar bone destruction. Postmenopausal women with low BMD who received BP therapy showed better periodontal status, alveolar bone and decreased tooth mobility, than those who did not have treatment.

There is a slight risk of developing osteonecrosis of the jaw (ONJ) in individuals who use antiresorptive drugs for osteoporosis treatment. Despite of the low incidence of ONJ, it is important for patients with osteoporosis to be aware of this condition, and the preventive measures to avoid this complication. Dental care prior to starting antiresorptive therapy is recommended.

Health care professionals and patients should be aware of the influence of systemic bone condition on the periodontal status. Managing osteoporosis, maintaining good oral hygiene, and complying with dental visits for biofilm control are especially important measures for avoiding periodontitis in susceptible individuals.

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