**Disease/Medical Condition**

**OSTEOPOROSIS**

(also referred to as “thin” or “brittle” bones)

**Date of Publication: March 11, 2013**

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**Is the initiation of non-invasive dental hygiene procedures* contra-indicated?** Yes

- Is medical consult advised? ...................................... No (assuming patient/client is already under medical care for osteoporosis and has no complicating oral features).

**Is the initiation of invasive dental hygiene procedures contra-indicated?** Yes

- Is medical consult advised? ...................................... No (assuming patient/client is already under medical care for osteoporosis and has no complicating oral features).
- Is medical clearance required? .................................. No
- Is antibiotic prophylaxis required? .............................. No
- Is postponing treatment advised? .............................. No

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**Oral management implications**

- Low estrogen levels, which commonly occur in post-menopausal women, are associated with osteoporosis and decreased alveolar bone density. The risk of tooth loss is particularly high in osteoporotic women who smoke. Estrogen replacement therapy (ERT) may be beneficial in decreasing tooth loss in women with osteoporosis, as well as in reducing gingival inflammation and attachment loss.
- Dental x-rays can distinguish patients/clients with low bone density from those with normal bone density. Patients/clients suspected to have osteoporosis on radiographic examination (and previously undiagnosed) should be referred for medical evaluation.
- The majority of osteoporotic fractures result from low trauma (i.e., falls from standing height or lower). Fractures of the wrist are most common, followed by fractures of the upper arm. Wrist fractures tend to occur at a younger age than spine and hip fractures. Such fractures, especially in one’s dominant arm, may interfere with brushing and flossing ability.
- The dental hygienist should be alert for signs/symptoms of osteonecrosis of the jaw (BRONJ or BONJ) in patients/clients treated with bisphosphonates (see below). Some invasive dental procedures should be minimized for patients/clients treated with injectable bisphosphonates, although routine scaling is often indicated during bisphosphonate therapy to optimize oral health and reduce risk of BRONJ development.

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**Oral manifestations**

- Osteoporosis is associated with alveolar bone loss and an elevated risk of periodontal disease. Osteoporotic women, in particular, are at increased risk of alveolar bone resorption, attachment loss, tooth loss, and edentulousness. Dental concerns that may indicate low bone density include loose teeth, receding gums or gums detaching from teeth, and loose or ill-fitting dentures.
- Bisphosphonate drugs (used to treat osteoporosis, in addition to Paget’s disease, multiple myeloma, and hypercalcemia of malignancy) can infrequently lead to osteonecrosis of the jaw. Bisphosphonate-associated osteonecrosis (BON) can occur with the oral administration of bisphosphonates (which is typically the administration route for osteoporosis patients/clients, and includes risedronate and alendronate), but is rare. BON is a more common complication of injectable bisphosphonates (such as pamidronate and zoledronic acid), which are used in patients/clients with primary bone cancer or skeletal metastases. In the early stages of BONJ, no radiographic abnormalities can be seen and patients/clients are usually asymptomatic. However, patients/clients may develop severe pain due to necrotic bone becoming secondarily infected. A common initial complaint is the sudden presence of intraoral discomfort and roughness that may progress to involve the soft oral tissues surrounding the area of necrotic bone. Often progressive, BON may lead to areas of bony exposure and dehiscence, as well as extraoral fistula formation.
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## Related signs and symptoms

- Osteoporosis is a skeletal disorder characterized by low bone density and elevated risk of fracture. Spine, hip, and wrist fractures associated with osteoporosis are a significant cause of disability, mortality, health care utilization, and health care costs.
- 2 million Canadians are affected by osteoporosis, with the disease being most common in persons 50 years of age and older. At least 1 in 3 women and 1 in 5 men will break a bone due to osteoporosis in their lifetime.
- Signs/symptoms (which arise late in the clinical course of the disease following a typically long asymptomatic period) include:
  - bone pain or tenderness
  - fractures with no or little trauma (i.e., fragility fractures)
  - height loss over time
  - kyphosis, and
  - low back and/or neck pain from vertebral fractures.
- Osteoporosis is more likely to develop if one does not reach optimal peak bone mass during one’s bone-building years.
- Persons at elevated risk for osteoporosis include those who are:
  - female
  - Caucasian (white) or Asian
  - Post-menopausal women
  - older adults
  - small in body size (thin)
  - eating a diet low in calcium
  - eating a diet low in Vitamin D or experiencing little sun exposure
  - physically inactive
  - drinking alcohol excessively
  - taking certain medications (e.g., glucocorticoids, antiseizure drugs, and excessive thyroid hormone).

## References and sources of more detailed information

- College of Dental Hygienists of Ontario  
  [http://www.cdho.org/Advisories/CDHO_Advisory_Osteoporosis_and_Osteonecrosis.pdf](http://www.cdho.org/Advisories/CDHO_Advisory_Osteoporosis_and_Osteonecrosis.pdf)
- Public Health Agency of Canada  
- Osteoporosis Canada  
  [http://www.osteoporosis.ca/](http://www.osteoporosis.ca/)
- National Institutes of Health: Osteoporosis and Related Bone Diseases National Resource Centre  
  [https://www.bones.nih.gov/health-info/bone/osteoporosis](https://www.bones.nih.gov/health-info/bone/osteoporosis)  
- National Institutes of Health: Research Portfolio On-line Reporting Tools  

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1 Kyphosis is curving of the spine that causes a bowing or rounding of the back, which results in hunchback or slouching posture.

*cont’d on next page...*
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### References and sources of more detailed information


* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.

** Ontario Regulation 501/07 made under the Dental Hygiene Act, 1991. Invasive dental hygiene procedures are scaling teeth and root planing, including curetting surrounding tissue.

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