



AMERICAN  
BONE HEALTH

# BONESENSE on...

## How cancer patients can lower the risk of bisphosphonate-related osteonecrosis of the jaw (BRONJ)

### What we know

Bisphosphonate (BP) treatment is typically the first medicine used for patients with osteoporosis to slow the breakdown of bone and reduce the chance of fractures. Anti-resorptive agents, especially the BP zoledronic acid (or Zometa®) and the non-BP denosumab (or XGEVA®, Prolia®) are used to prevent the spread of cancers to the bone and elevated calcium levels that can accompany cancer in the bones, which occurs commonly in patients with late-stage cancers, including prostate cancer, breast cancer and myeloma. Anti-resorptive agent-treated cancer patients often report a reduction in pain. The clinical trials show a reduction of fractures by 36%<sup>[1]</sup>.

However, cancer patients who are given high doses of potent anti-resorptive treatment, such as Zometa and XGEVA have an increased risk of developing a rare, but severe complication, osteonecrosis of the jaw (BRONJ)<sup>[2]</sup> BRONJ is identified when the bone in the jaw does not heal as a result of dental surgery<sup>[3]</sup>, like a tooth extraction. BRONJ is likely to occur from a combination of the immuno-suppression of the cancer medicine, the trauma of a dental extraction, and the bacteria present in the mouth, but can be worsened by potently suppressing bone turnover. BRONJ affects the life quality of cancer patients, causing pain and swelling in the gum and poor healing of the jaw bone after dental surgery<sup>[4]</sup>.

### What can a cancer patient do to reduce the risk of BRONJ?

#### Maintain a healthy life style

Studies show that people with diabetes have nearly three times the risk of developing BRONJ<sup>[14,15]</sup>. Smoking also increases the risk of BRONJ. Therefore, keeping a healthy diet and lifestyle can improve bone health and reduce the risk of infections in the jaw<sup>[15]</sup>.

#### Prior to potent anti-resorptive therapy

##### **See the dentist before starting potent anti-resorptive treatment**

Tooth extraction is one of the key factors causing BRONJ in cancer patients taking BP or denosumab treatments<sup>[5]</sup>. Before starting such treatment, see your dentist and schedule all dental operations, such as tooth extraction, periodontal and endodontic treatments.

##### **Consider taking antibiotics before dental surgery**

More than 90% of the patients with BRONJ get a bacterial infection called *Actinomycosis*<sup>[6,12]</sup> in their jaw. A case-control study on myeloma patients receiving high doses of BP treatment for >20 months<sup>[3]</sup> found that a course of antibiotics markedly reduced the risk of BRONJ. Talk with your doctor about taking an antibiotic, such as penicillin, before any major dental procedures, if you are on Zometa or XGEVA for cancer.

#### During BP treatment

##### **See your doctor before any dental procedures**

If you have been taking BPs for more than 3 years, ask your doctor if you need to stop taking them for 3-6 months before any dental surgery.

## Regular dental care

Work closely with your dentist and oncologist to keep your teeth and gums healthy. Plan to visit the dentist at least 4 times a year while you are on treatment <sup>[13]</sup>.

## Control and monitor any infections

Continuous infections can stimulate the progression of BRONJ <sup>[5]</sup>. If you have a high risk of BRONJ, use antibacterial mouthwash to prevent the risk of infection. If you develop infection or inflammation, speak with your doctor about starting an antibiotic and medicines to relieve pain.

## References

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