

Bisphosphonate Therapy and the Oral Cavity

Bisphosphonates. What are they?

Bisphosphonates are a class of drugs that are used to prevent bone demineralization (weakening or destruction). These have been used since the 1970s, but technological developments in recent years have continued to reduce the frequency of dosage and made other stronger forms of the drugs available. Some of these drugs can be taken by mouth, while others must be given intravenously at a hospital or clinic. Examples include drugs such as Actonel™, Zometa™, Fosamax™, and Boniva™.



What conditions are bisphosphonates prescribed to treat?

Bisphosphonates are approved for the treatment of:

Osteoporosis: the loss of bone density often seen in postmenopausal females.

Hypercalcemia of Malignancy: Increased calcium in the blood from bone breakdown.

Metastatic disease to bone: Cancer spreading to bone tissue.

Are there side effects to my mouth from taking these drugs?

Yes, there is an important but rare side effect you should know about. Less than five years ago, doctors began reporting cases of individuals having difficulty healing after undergoing tooth extraction or other invasive dental procedures, a phenomenon called **osteonecrosis of the jaw** (see below and note area of exposed necrotic bone). The only common factor in these patients was that they were taking bisphosphonate drugs. As a consequence, most doctors agree that there is an association between osteonecrosis of the jaw and bisphosphonates, although the drugs are not the only factor involved.



How common is this problem?

Since 2003, about 4,000 cases of bisphosphonate-associated osteonecrosis of the jaw have been reported to the FDA. Considering the fact that there have been tens of millions of prescriptions written for bisphosphonate drugs, this is a rare side effect. Over 90% of these cases were in patients receiving an IV form of the drug, with a much smaller number in those taking the medication by mouth. Overall, the risk is thought to be less than 1% for patients taking IV bisphosphonates, and at least ten times less likely than that for patients taking the drugs by mouth.

If I take bisphosphonates, am I automatically at risk?

The short answer is yes. Anyone who takes these medications has a chance of developing the condition. However, most reported cases occur after oral trauma (tooth extraction or oral surgical procedure). Tobacco use, treatment with corticosteroids, long-term use of bisphosphonates, treatment with more than one kind of bisphosphonate, and diabetes also may increase the risk of this condition occurring.

What are the signs of bisphosphonate-associated osteonecrosis?

The hallmarks of this condition are gum wounds that heal very slowly or do not heal at all for six weeks or more after a procedure that exposes bone. Some patients report that this begins with a feeling of “roughness” on the gum tissue. If these open wounds become infected, you may see pus or swelling in the

adjacent gum tissue. Many times, this condition is painless in the beginning, and patients only experience pain after the exposed bone becomes infected. If this infection lasts long enough, there may even be numbness, especially in the lower jaw.

What kind of treatment is available for osteonecrosis?

Unfortunately, at this time most reported treatments are slow to resolve osteonecrosis of the jaw, so the best treatment is prevention. Current treatment methods that are used include antiseptic rinses, systemic antibiotics, and cleaning/removal of dead bone from the affected area. Sometimes if treatment is too aggressive it can make the condition worse. If your dentist diagnoses the condition he or she may send you to a specialist in oral medicine or oral surgery to evaluate the best possible therapy. Generally, therapy focuses on controlling pain and preventing infection so that the body can heal properly.

What can I do to avoid this condition if I am taking bisphosphonates?

You should discuss with your dentist ways to minimize the risk of needing invasive procedures (extractions and oral surgery). Frequent professional cleanings, attention to home care, and careful observation of any changes in your mouth are a good start. It is best to attempt to preserve teeth, when possible, through root canal therapy or other conservative treatments, rather than extractions. You and your dentist should come up with an

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overall treatment plan for comprehensive and preventive treatment. The best scenario is one where dental work is planned and executed before therapy with bisphosphonates is started.

Is osteonecrosis always associated with a dental procedure?

No, some patients have reported the condition being caused by an irritating denture, or some other injury (sharp food, for example). Some cases appear to have no immediate cause at all.

Should I stop taking my bisphosphonates before dental procedures?

Not without the advice or instruction by your physician. These drugs have been shown to be stored within the bones and slowly released over time. It is believed that, even when not taking the medications, the drugs can persist for decades in bone. There is no evidence that stopping the medication will reduce the risk of developing osteonecrosis of the jaw. **The only reason to stop taking your medication is because your physician specifically instructs you to do so.**

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The American Academy of Oral Medicine

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