



PATIENT & CAREGIVER EDUCATION

Osteonecrosis of the Jaw (ONJ)

This information explains osteonecrosis (os-tee-oh-neh-kroh-sis) of the jaw (ONJ) and answers some frequently asked questions.

What is ONJ?

ONJ is when the bone cells in your jaw break down or die.

What causes ONJ?

ONJ is a rare, but serious side effect of certain medications that target the bone. These medications are bisphosphonates and denosumab. You may be prescribed these medications if you have:

- Multiple myeloma or other cancers.
- Cancer that has spread to the bone.
- Osteoporosis or osteopenia. This is a weakening of the bones that can lead to fractures (broken bones).

Bisphosphonates

Bisphosphonates can be given orally (by mouth) or intravenously (through a vein). Some examples of bisphosphonates are:

- Zoledronic acid (known as Zometa[®] for cancer treatment and as Reclast[®] for osteoporosis treatment)
- Pamidronate disodium (Aredia[®])
- Alendronate (Fosamax[®])
- Risedronate sodium (Actonel[®])
- Ibandronate sodium (Boniva[®])

Denosumab

Denosumab is given by injection (shot). Examples of denosumab include:

- Xgeva[®] for cancer treatment
- Prolia[®] for osteoporosis treatment

Both bisphosphonates and denosumab are given in higher doses and more often to people with cancer than to people with osteoporosis.

What are the symptoms of ONJ?

Symptoms of ONJ can range from very mild to severe. ONJ looks like an area of exposed bone in your mouth. It

can cause tooth or jaw pain and swelling in your jaw. Severe symptoms include infection in your jaw bone.

You can get ONJ after some dental surgeries, such as getting teeth extracted (removed) or implanted. If this happens, it may take a long time for you to heal after dental surgery or you may not heal at all.

What is the treatment for ONJ?

Mild cases of ONJ can be treated with a mouth wash. More severe cases can be treated with antibiotics, topical gels (gels you put directly on your gums), and dental procedures.

How many people develop ONJ?

Only a small number of people who take bisphosphonates or denosumab will develop ONJ. We don't know who will develop it and who will not.

Studies show that about 1% to 2% of people (1 to 2 people out of 100) who take these medications for cancer involving the bones will develop ONJ. The risk is much lower for people who are taking them to treat osteoporosis. Studies show that less than 0.01% of people, (about 1 out of 10,000 to 1 out of 100,000) who are taking the medications for osteoporosis will develop ONJ.

What increases my risk of getting ONJ?

Your risk of ONJ increases the longer you're treated with bisphosphonates or denosumab. Since people who take these medications to treat cancer usually take them for longer periods and at higher doses than do people with osteoporosis, they are at a higher risk of developing ONJ. People with multiple myeloma also seem to have a higher risk of developing ONJ.

You also have an increased risk of developing ONJ if you have dental surgeries done while you're taking these medications.

What can I do to reduce my risk of getting ONJ?

If you start taking bisphosphonates or denosumab, it's very important for you to keep your teeth and gums healthy. Before you start taking these medications, make sure to visit your dentist. If you need to have any major dental surgeries (such as implants or extractions), have them before starting these medications. Your mouth needs to be healed from any dental surgeries before you start taking these medications. This could take months, depending on the surgery.

Once you start taking bisphosphonates or denosumab,

tell your dentist so that they will be prepared to treat you. Make sure to get regular dental checkups to prevent problems.

If you need to have dental surgery, tell your oncologist (cancer doctor).

What should I consider when deciding whether to take bisphosphonates or denosumab?

When deciding to take these medications, it's important to consider both the small risk of developing ONJ and the known benefits of bone protection. These medications prevent broken bones due to osteoporosis, osteopenia, or cancer weakening your bones. Sometimes broken bones or the problems caused by broken bones are very serious. They can be life threatening or disabling (prevent you from doing some activities). Your healthcare provider believes that the benefits of these medications outweigh the small risk of developing ONJ. The decision is yours to make. Discuss it with your healthcare provider.

Call Your Healthcare Provider if:

- You have any pain in or around your jaw

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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