

## **What are bisphosphonates?**

- Bisphosphonates (like zoledronic acid) are used to treat low bone density or thin and fragile bones, often called osteopenia or osteoporosis. These medications are helpful for children who have congenital bone disorders or low bone density and a history of broken bones.
- Bone is living, like our other organ systems, and made up of minerals, cells, and connective tissue. Our skeleton is constantly remodeling in order to remove old bone and replace it with new bone. Osteoclasts are cells that remove old bone and osteoblasts are cells that build new bone. In some medical conditions, bone is removed or broken down faster than it is replaced, causing thin and weakened bones that are at higher risk of breaking. Bisphosphonates work by slowing osteoclast action. This decreases the removal of old bone to help preserve bone density and strength.

## **How they are given**

- Administered by IV (weight-based dose) over 30 minutes to several hours every 3, 4, 6, or 12 months.

## **How to get ready for your infusion**

- 3 to 5 days prior to infusion, follow the doctor's orders about giving a calcium supplement. Be sure your child gets plenty of hydration 1-2 days before the infusion. The day of the infusion, your child's doctor will order a urine pregnancy test for all females 10 years of age or older.
- To help prevent flu-like symptoms after infusion, give Tylenol every 4-6 hours for the first 24 hours, unless instructed not to do so by your doctor. You may also be instructed to get labs done 2-3 days after infusion.

## **Side effects**

- Flu-like syndrome, low blood pressure, dizziness, fatigue, headaches, muscle pain, weakness, GI symptoms (nausea), fever and/or rash. Symptoms may last 1-2 days and up to 10-12 days after infusion.
- There is a rare risk of developing a jaw or tooth problem called osteonecrosis of the jaw. Osteonecrosis of the jaw is usually associated with trauma to the jaw (tooth extraction), history of malignancy, and/or infections while on bisphosphonate therapy. There is a rare risk of abnormal fractures of the femur (thigh bone) associated with bisphosphonates, especially if taken for many years. This often presents as thigh pain.

## **Tell your doctor**

- Bisphosphonates stay in the body for a long time, even after stopping the medication. Please continue seeing your child's doctor for monitoring and repeat bone density scans.
- Tell your doctor if your child has broken a bone or needs bone surgery. Infusions may need to be suspended. Do not take these medications if breastfeeding, pregnant, or possibly pregnant.