

# Bisphosphonate treatment for children

Information for parents and carers



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hospital

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## What are Bisphosphonates

Bisphosphonates are a group of drugs that prevent the loss of bone mass. They are used in children who have weak or fragile bones causing them to have recurrent fractures, bone or back pain. They are used in a range of low bone mass conditions such as osteogenesis imperfecta, prolonged immobility and long term steroid use.

### *At Leeds we currently use: -*

**Pamidronate** – given through a vein

**Zoledronate** – given through a vein

**Risedronate** – given orally

## How do they work?

### *There are two main cells within bones: -*

- Osteoblasts – these cells make new bone
- Osteoclasts – these cells remove old bone – a process called resorption

These cells work together continuously to make the bone strong in both children and adults. Bisphosphonates stick to the bone and reduce the activity of the osteoclasts so less bone is reabsorbed. Osteoblasts continue their work forming new bone, thus making bones denser and stronger.

## What are the benefits?

By improving bone density, the bisphosphonate treatment is thought to reduce the risk of fractures and reduce bone pain. If children have loss of height in the bones of their back it may help restore the shape and size of the vertebrae.

## Are there any side-effects?

Pamidronate and Zoledronate have similar side-effects

It's not uncommon to have "flu like" symptoms following the first cycle of treatment. Your child may suffer with a temperature, achy joints and feel generally unwell for a few days. Paracetamol can be given to make your child feel more comfortable during this time. This reaction does not usually occur with subsequent treatments.

Some children may experience an upset tummy following the first treatment. If this happens please ensure your child has plenty of fluids to drink and contact us for further advice.

Bisphosphonates can lower the calcium level in the body. Following the first treatment your child will be given a short course of calcium medication to take at home. We also encourage a diet rich in calcium including dairy products and cheese.

If any orthopaedic surgery is being planned we may alter the cycles of treatment to ensure the bisphosphonates don't interfere with bone healing after your child's operation.

Another side-effect reported in adults receiving bisphosphonate treatment is called osteonecrosis of the jaw. This is a condition where the jaw bone becomes exposed (such as following dental extractions). It does not heal and the bone weakens and dies causing pain.

There are no reports of this occurring in children. It is mainly reported in adults with cancers who are also receiving a bisphosphonate. However, as with all children it is recommended your child has good oral hygiene and visits the dentist every six months. It is important to inform your child's dentist they are receiving bisphosphonate treatment.

The oral preparation Risedronate can irritate the oesophagus (food pipe) it is important to follow the instructions on the packet and the information leaflet provided by your team.



## How is the treatment given?

Your child will attend the children's day care unit, they will have their pulse, temperature and blood pressure checked to ensure they are well enough for the treatment.

**Pamidronate** and **Zoledronate** are given as an intravenous infusion. A cannula (small plastic tube) will be inserted into a vein – usually in their hand or arm. Blood tests for calcium and Vitamin D will be taken before every infusion.

**Pamidronate** is administered over four hours for two consecutive days. The treatment is repeated every three months. The cannula will be secured with a dressing and bandage, and can stay in for both treatments.

**Zoledronate** is administered over one hour. As it is a more potent drug, only one infusion is required every six months. The child is advised to drink plenty of fluids on the day of treatment.

**Risedronate** is a tablet that is usually taken once a week. Your team will provide you with information on the dose and frequency of this medication. It should be taken on an empty stomach in the morning with tap water. The child should not lie down or eat anything else for the next hour. Your team can provide you with an information leaflet to advise on how and when to take.

**A page for notes or any questions you may want to ask your child endocrine team.**

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# The children's endocrine metabolic bone team

- **Dr Mushtaq** – Consultant Paediatric Endocrinologist
- **Dr Nadia Amin** – Consultant Paediatric Endocrinologist
- **Sr Clare Patchett** – Children's Endocrine Nurse Specialist
- **Daniella Peat** – Endocrine Team Administrator

## Contact Us

If you have unanswered questions or concerns please ring

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## Support groups

- The Brittle Bone society  
Website: [www.brittlebones.org](http://www.brittlebones.org)
- The National Osteoporosis Society  
Website: <https://nos.org.uk>
- Strongbones Charity



## What did you think of your care?

Scan the QR code or visit [bit.ly/nhsleedsfft](https://bit.ly/nhsleedsfft)

*Your views matter*

