Vertebral Fractures in Children

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Introduction

Osteoporosis is a condition that causes the bones in the body to become weak and fragile. If bones are weak, they are more easily broken (fractured). Most people will know of osteoporosis as a condition which occurs as a result of aging, especially in women following the menopause. In children, this can happen as a result of an underlying bone condition or as a result of chronic illness.

The spine in the back is made up of several small bones called vertebrae and in many cases it is the spine that can often be the site of osteoporosis.

What is a vertebral fracture?

A spinal fracture occurs when a vertebral body collapses. When this happens in children and adolescents, the child’s bones are very weak and osteoporosis is diagnosed.

A fracture in the vertebra is less obvious compared to a fracture in the arms or legs. However, it can be quite painful and your child may need pain relieving medicines. Children may complain of localised pain over the spine as opposed to broader back pain associated with muscle weakness and posture.

A vertebral fracture can also cause ongoing back pain, although in some children, vertebral fractures can be associated with little or no pain at all.
How are vertebral fractures diagnosed?
As mentioned, some children with vertebral fractures can have back pain. Your child will need special x-rays of the back to confirm the diagnosis. On an x-ray, the affected bones in the spine will have a different shape to normal bones. Doctors may also request these x-rays of the back regularly if vertebral fractures are common for you or your child’s underlying condition.

How do you treat this kind of fracture?
The goal of treatment is to reduce or eliminate pain, restore function and keep the spine stable.

- Bisphosphonates
- Pain relief medicines
- Exercise
- Posture and positioning

If there is a lot of back pain as a result of vertebral fractures, doctors will consider treatment with medicines called bisphosphonates which are usually given as a drip infusion into the veins. Bisphosphonates are very good at improving bone pain although sometimes your child may need separate pain medicines. Bisphosphonates also help strengthen the weak bones.
It is important that your child remains as active as possible and that you plan a gradual return to activities. If your child can walk, we recommend that bed rest is limited. If your child uses a wheelchair then, good posture when in the chair is very important. If there is a tilt in space function on the chair, then your child won’t need as much bed rest as they can use the tilt function instead. If your child has severe back pain you may need to restrict their activities such as lifting, bending, or twisting.

Your child’s return to full activity should be gradual with rest periods (such as lying down or tilting in the chair) of 5-10 minutes as needed until their tolerance develops and they are more able to sit up and move around with less pain. Your child will need a regular exercise programme to maintain their flexibility, balance and posture.

**How can I protect my child’s spine?**

It helps to learn and practice good techniques for standing (if able), sitting, lifting, reaching and doing ordinary everyday activities such as brushing teeth, washing hair, getting dressed and all aspects of moving and handling. If you or your child needs assistance to move in and out of bed or a wheelchair, using a hoist may be best rather than being manually lifted which in some cases can cause more strain on the spine.

**If your child is walking:**

Try to make sure that they maintain a straight back with their head in alignment and avoid too much flexion (bending forward) at the spine. Your child’s therapist can help you with their posture and show them how to be as symmetrical as possible, all of which help. Try to use equipment like a long handled shoe horn or a ‘pick up’ stick to reach foot or floor level. Your therapist can advise on suitable methods or equipment depending on the activity.
Your child should avoid activities that involve twisting e.g. reaching down and over to the side in either sitting or standing. Avoid anything that jars, twists or puts pressure on the spine. This includes (but is not limited to) heavy lifting, jumping, diving, riding horses, all-terrain vehicles, or motorcycles and most amusement park rides. Your child should also avoid trampolining not only because of the pressure it puts on the spine, but because it is more likely to damage the muscle if you have a condition such as Duchenne Muscular Dystrophy.

If your child uses a wheelchair:

If your child uses a wheelchair, avoiding rough, uneven and bumpy ground is important. In the car, make sure the driver doesn’t make sudden moves round corners and roundabouts. Making sure your child is as stable as possible in the car will all help with keeping pain to a minimum.

During moving and handling with a hoist, if there is a recline function on the chair, moving the back support into the reclined position before the sling is inserted can help reduce too much flexion at the hip which can increase any back pain. When helping your child move, try to limit any jerkiness during the move.

Turning in bed can be tricky and doing this as one move (log roll) is best. Avoid moving the shoulders before the hips as this corkscrew movement may be more painful and puts more pressure on the spine. It is essential that your child has good support both in the chair and in bed, your therapist can advise on your child’s positioning.

What can school children do to keep their spines healthy?

Your therapist can advise on suitable equipment if needed at school.
What else can be done to protect the spine?

Exercise is important for your child’s muscles and bones. Swimming is an excellent activity that provides joint motion without stress and is good for the heart and lungs and muscles in the back. Walking is also beneficial. Talk to your doctor and therapist about what other recreational activities would suit your child’s interests and abilities.

Any other hints?

Anyone who sits a lot either in a desk chair or in a wheelchair is best to change position often. It helps to get out of the chair and either lie down or stand for a portion of the day. If you have any questions regarding any of this advice, please do get in touch with your doctor or therapist.

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