



The Association of Paediatric Chartered Physiotherapists

APCP Information - Bone Health Management in Children with Physical Disabilities

Information for Parents and Carers

What is 'Bone Health'?

Bone health is a term commonly used to describe the strength and density of children's bones whilst they are developing.

Children with a physical disability are at risk of poor bone health and their bones can be described as being **Osteoporotic** and having **Low Bone Mineral Density**.

What affects bone health?

Risk factors for poor bone health include:

- * Children who spend less time standing or walking
- * Children who are taking medications such as anticonvulsants (seizure medication) or steroids
- * Children with poor nutrition (diet)
- * Children who have decreased exposure to sunlight

Poor bone health can lead to **Non-Traumatic Fractures**. These most commonly occur in the long bones of the legs or in the spine. Non-traumatic fractures often occur due to low impact trauma to the affected bone or through normal handling and movement of your child.

How can we help to manage this risk?

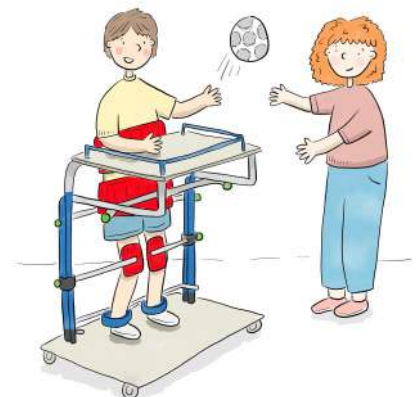
Your physiotherapist can provide advice and education about how to move your child safely and support your child to participate in safe and regular weight bearing activities such as standing.

Your child's doctor can provide advice and education about your child's risk of low bone mineral density and help to identify potential risk factors. They may also prescribe additional Vitamin D and Calcium supplements to support your child's bone health.

Will my child still be at risk of a fracture if we follow all the advice given?

Evidence tells us that a child with a physical disability will have lower bone mineral density than a child who is independently mobile, subsequently placing them at a higher risk of fractures through normal handling and movement.

However, evidence also tell us that the use of vitamin D supplements and weight-bearing activities, such as using a standing frame, can increase bone mineral density in children with a physical disability. This can decrease the risk of non-traumatic fractures.



What happens if my child has a fracture?

If you think your child has had a fracture, you will need to attend your local Emergency Department (ED) for treatment by a member of the orthopaedic team.

Signs and symptoms of a fracture may include:

- * Swelling
- * Bruising
- * Tenderness
- * Abnormality/change of shape
- * Pain when pressed or moved
- * Sometimes there isn't any clear sign but your child appears in pain or unsettled – seek further advice from your child's doctor or their physiotherapist if you are worried.

It is important that you give the Emergency Department as much information about your child. This should include:

- * Information about the disability your child has, specifically the physical disability that affects their ability to stand or walk
- * Information about medications your child may take
- * Information about any activity your child may have been participating in during the time of suspected fracture
- * Information about whether your child can identify if they are in pain, are able to locate the pain and are able to communicate pain

If your child does not present with an obvious deformity from the suspected fracture and is unable to identify the location of their pain, they may require an x-ray above and below the suspected fracture site to ensure the doctor is able to clearly locate any injury.

What happens after my child has had a fracture?

If there is no clear traumatic injury that could have caused the fracture this may be considered a 'non-traumatic fracture'. You should discuss the next steps with your child's paediatrician. Current guidelines advise that after a first non-traumatic fracture a child should be referred for a DXA scan (Dual Energy X-ray Absorptiometry) which can measure bone mineral density.

Your child's medical team will be available to offer support and advice whilst your child is recovering from the fracture.

What happens if my child has another fracture?

If your child experiences a second non-traumatic fracture they may be offered a medication called bisphosphonate to help increase their bone strength.

NB: Bisphosphonate is not offered as a preventative measure due to the unknown long-term side effects and the limited evidence to support its role in preventing this type of fracture. You should discuss this with your child's medical team.

How can I protect my child if they have been identified as at risk of fracture due to poor bone health?

Evidence supports the continuation of weight-bearing activities, such as standing frames, and supported physical activity to improve bone health.

It is important that your child is handled correctly by all carers and therapists involved in their day to day care. This includes moving and handling your child, carrying out changing or toileting and any physiotherapy programmes or use of equipment.

You should seek support and advice from your child's physiotherapist and occupational therapist to enable you to make informed decisions about your child's care and to fully understand any risks associated with their movement and therapy activities.

Will my child continue to have these risks when they become an adult?

Your child/young adult may continue to have poor bone health into their adult life as a result of the ongoing reduction in weight-bearing activities. This will always need to be considered throughout your child's life.

Further information

There is further information on osteoporosis in children at the Royal Osteoporosis website.

www.theros.org.uk

You can find additional information on how to ensure your child is eating enough Vitamin D and Calcium and what foods these can be found on the British Dietetic Association website.

Calcium - www.bda.uk.com/resource/calcium.html

Vitamin D – www.bda.uk.com/resource/vitamin-D.html

This leaflet has been produced after an initial review of literature and where there is a lack of evidence, a consensus of expert opinion is agreed, correct at time of publication

APCP

<https://apcp.csp.org.uk>

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