

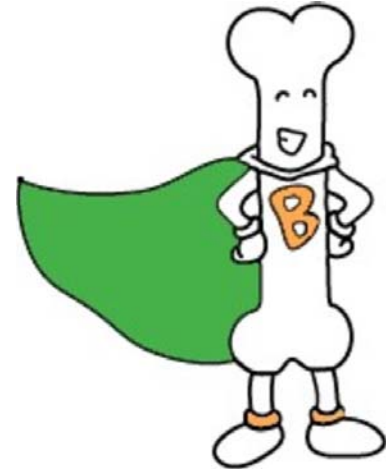
## About Sunny Hill

Sunny Hill Health Centre for Children is a provincial facility offering specialized services to children with disabilities, their families and communities throughout British Columbia. Using a family-centred approach, Sunny Hill helps promote the healthy development of children and youth by supporting families and community service providers in their efforts. It is also a resource for educational services and information about disabilities. Services are delivered close to home in a child's community, or on site at Sunny Hill, located in Vancouver.

## How To Contact Us

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*Promoting Better Health for Children with Disabilities  
through Clinical Services, Education and Research*



## Introduction:

Children with neuromotor disability (such as cerebral palsy, spinal cord injury, myelomeningocele, brain injury, muscular dystrophy...) may have some problems with their bone health. If your child has a neuromotor disability, there are some things you can do to help your child's bones stay healthy and strong!

## Why Should I Pay Extra Attention To My Child's Bones?

Children with neuromotor disability often have bones that are more **fragile** than typical bones. This puts them at greater risk of **fractures**. Fractures can happen as a result of minimal force, slight injury or even during normal daily routines. The following are signs/symptoms of a fracture:

- Pain
- Swelling
- Discomfort
- Deformity that is not typical of your child's limbs
- Irritability or change in behaviour or sleeping patterns
- Redness, warmth

Fractures can cause discomfort and upset for the child and for the people who love and care for them. Fractures also mean long periods of time are spent recovering, and this means children are not out participating in life.



## Why Are My Child's Bones More Fragile?

Children with neuromotor disabilities are more likely to have bones which are not as dense, thick or solid. This means they have less **bone mineral density (BMD)**. You may have also heard this referred to as **osteoporosis**. The following are some of the reasons that children may have less density or strength in their bones:

- If children are **not actively moving and putting weight through their bones** because of their disability, then they may have less bone mineral density. When we stand, walk, swim, bike, and move, we not only put weight through our bones, but we also use our muscles. Both of these factors help to shape our bones and make them solid and strong.
- Sometimes children with neuromotor disabilities are **immobilized for periods of time** (i.e. in bed or not moving around) because of surgeries, illnesses and injury such as fractures. Once again, this means they are not moving their muscles or putting weight through their bones, and this affects bone density.
- Some children with neuromotor disability have difficulty eating **enough nutrients** for proper nutrition and strong bones. Just as children may have trouble controlling the muscles of their legs and arms, they may also have trouble controlling the muscles of their mouths and throats. This can make it hard to get the nutrition needed. Low body weight in children may lead to lower bone mineral density.



- Sometimes children don't get enough of the **proper nutrients** like **calcium** and/or **vitamin D**. This happens for various reasons; for instance, they don't eat enough of the right foods, perhaps they have food allergies or are picky eaters!
- Sometimes, children have less calcium in their bones because of a lack of certain **hormones**. These hormones affect the body's ability to use vitamins and minerals properly, so the bones don't get all that they need to stay strong.
- Finally, sometimes the **medicines** children must take to keep them healthy (such as anticonvulsants) can interfere with their body's ability to use vitamin D and calcium. As we have mentioned, vitamins and minerals are important for strong bones.

These are some of the reasons your child's bones may be more fragile...now lets talk about what you can do to help!



## How Can I Help My Child Build Healthy Bones?

There are many things you can do to help your child have solid, healthy bones. Speak to your doctor and your therapist about which may be right for your child.

- **Being active and on the move!** Even if your child can't stand, walk or move about on their own, they might be able to do these activities with the help of equipment. There are **standing frames, walkers and adapted sports equipment** available to get your child up and moving. Walking, swimming, biking, and moving works the muscles, increases strength and endurance, and lets the child see their world from a whole new angle! It can also improve social interaction and participation with peers. There is mixed evidence about whether or not standing alone improves bone mineral density, however one research study did show that there was an improvement in BMD in the spine. Speak to your therapist about what equipment may be best for your child, and what schedule would fit your lifestyle.
- **Proper nutrition** is really important for all children. For bone health, it is especially important to get **calcium** and **vitamin D**.
  - Vitamin D comes mainly from the sun...so take advantage of those sunny days and go for a walk! However when the sun just is not shining... Vitamin D can also be found in fortified dairy products, egg yolks and various types of fish: tuna, salmon, sardines...
  - Calcium in your child's diet comes from foods like: milk, yogurt, calcium fortified products (orange juice, rice, or soy milk), cheese, tofu, skim milk powder.



If you are concerned that your child does not get enough of these foods, you can speak with a dietitian or doctor. They may be able to suggest ways to increase these foods, or can suggest calcium and vitamin **supplements** if needed. You can also try the following on-line resource for more information: <http://www.dialadietitian.org/>

- It is important that children with neuromotor disabilities are well nourished. This not only improves their bone mineral density, but is also important for **general development** of their brains and bodies. If your child is **underweight, or struggles to get enough food in at mealtime**, it is really important to talk with your doctor or other health professionals about feeding. Here are some signs of feeding difficulty or poor nutrition to watch for:
  - Eating very slowly or inefficiently
  - Not chewing their food well
  - Losing a lot of food from their mouths
  - Coughing, choking, sounding gargly or wheezy with meals
  - Frequent respiratory infections
  - Low body weight and minimal fat
  - Lethargy or tiredness

Improving your child's general nutrition will help with many aspects of health...including healthy bones!



- It is important for you to know that despite everyone's best efforts, children who have a disability which limits them from moving and putting weight through their bones have bones that are more fragile to some degree. We must be careful **when dressing, changing and transferring these children**. As well, do not use a lot of force when **exercising and stretching their bodies**.

If you want more information about bone health, talk with your doctor!

## When Do I Contact A Health Professional?

If you suspect a fracture or have symptoms as described on page 1 - see a health professional without delay.

