

# Children Who Stay Small or Have Weak Bones

## CHAPTER 13

In this chapter we look at children with disabilities related to their bones, and at children who do not grow as tall as other children. We include rickets, brittle bone disease, and children who stay very short (dwarfism). In all of these conditions, the legs may become bowed, and the shape or proportions of the bones are often not typical.

### RICKETS

Rickets is weakness and deformity of the bones that occurs from lack of vitamin D. We get vitamin D from whole milk, butter, egg yolks, animal fats, and liver, especially fish liver oil. The body also makes its own vitamin D when sunlight shines on the skin, but the amount it makes depends on skin pigmentation, time of year, and a person's location in the world. Children born to mothers who didn't get enough vitamin D during pregnancy, children who do not get enough food with vitamin D, and children who are not often exposed to sunlight may gradually develop signs of rickets.

Rickets can be prevented by giving vitamin D to all newborn babies for the first 6 months of life (600-1200 IU of vitamin D2 or vitamin D3 by mouth once a day). Pregnant and breastfeeding women should also be given vitamin D (600 IU vitamin D2 or vitamin D3 by mouth once a day) to support the health of their growing babies. It is also helpful to eat foods that contain vitamin D, and spend time in sunlight.

Rickets is treated by giving vitamin D (vitamin D2 or vitamin D3) as well.

Age	Dose	How to take
up to 1 month	1000 IU (25 mcg)	By mouth, 1 time a day for 3 months
1 to 12 months	1000-2000 IU (25-50 mcg)	By mouth, 1 time a day for 3 months
1 to 12 years	2000-6000 IU (50-150 mcg)	By mouth, 1 time a day for 3 months
12 years and older	6000 IU (150 mcg)	By mouth, 1 time a day for 3 months

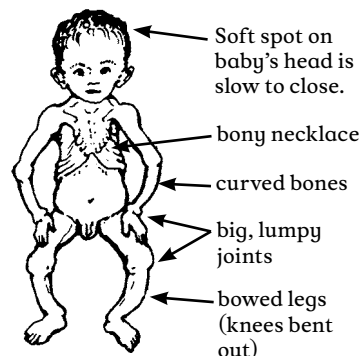
Following treatment, children younger than 1 year should be given 400 IU (10 mcg) of vitamin D one time a day and children 1 year and older should be given 600 IU (15 mcg) of vitamin D one time a day.

### BRITTLE BONE DISEASE

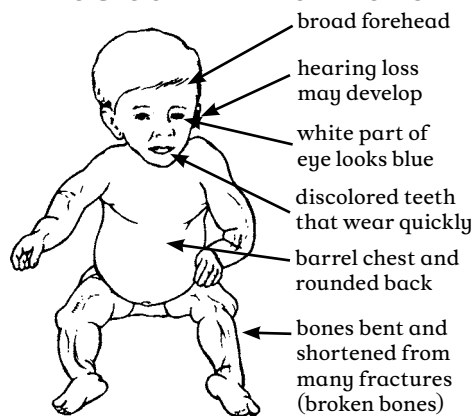
The child is born with bent or twisted limbs, or with broken bones. (Or he may seem typical at birth, and the bones begin to break later.) He may start to walk near the typical age, but increasing disability due to breaks may soon make walking impossible. Because of the many broken and bent bones, these children stay very short. Parents sometimes do not realize when their child breaks a bone.

Brittle bone disease is not common. Sometimes it is inherited, and someone else in the family will have the same condition.

#### SIGNS OF RICKETS



#### SIGNS OF BRITTLE BONE DISEASE



There is no medical treatment. However, sometimes surgery can be done to straighten and strengthen the leg bones by putting a metal rod down the middle of them. This may help the child walk for longer, but he may eventually need a wheelchair to move about. Back problems increase with age; a body brace may help (see p. 164).

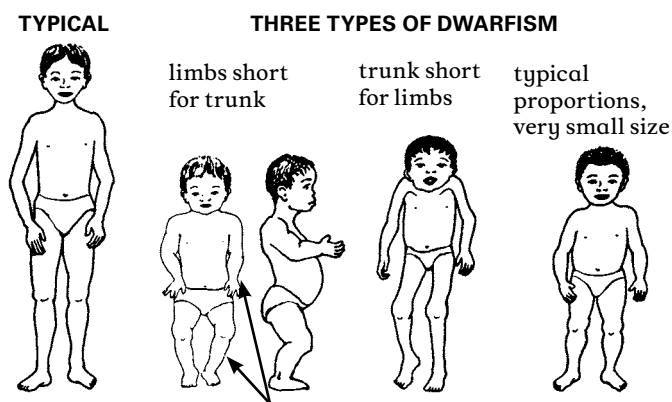
Increasing hearing loss may become a problem for children with brittle bone disease. Help them to develop their minds and learn skills that do not require physical strength. The child must learn how to protect his body from breaks. It helps to sleep on a firm bed.

## CHILDREN WHO STAY SHORT (Dwarfism)

Parents often worry when a child does not grow as quickly as other children. Shortness has many causes. Here we discuss only a few.

- **Slow growth.** Some children grow more slowly and mature sexually later than others. If the child is healthy in other ways, do not worry. He will probably grow quickly when he begins to grow up sexually, even if this happens as late as 15, 16, or 17 years old.
- **Short size.** When one or both parents are shorter than average, they may have children who are also short. Shortness “runs in the family” and this is not a reason for concern. Make sure the child is healthy and eats well.
- **Poor nutrition.** Some children do not grow because they do not get enough food or the right kinds of food. They are thin, small, have big bellies, and get sick often. Or they may lack energy, seem very unhappy, or develop swollen feet, hands, and faces. These children need more and better food (see p. 321). They may also need more stimulation, play, love, and attention in order to grow and develop (see Chapter 35).
- **Long-term illness or medication.** Severe long illness often slows a child’s growth. Also, certain medicines such as cortisone or steroids for arthritis, if given for a long time, can slow growth and weaken bones.
- **Dwarfism.** Some children are born with a condition in which the body does not grow typically. There are many different patterns and causes. In 1 of 5 children it is inherited, and certain relatives will also be very short.

In the most common type of dwarfism, the arms and legs are short for the body. The head is big, the forehead bulges, and the bridge of the nose is flat. The child often has a swayback, pot belly, and bowlegs. Hip problems, club feet, or eye problems and hearing loss may occur.



## TREATMENT

There is no medical treatment for most children who are short, including those with dwarfism. In many countries, doctors prescribe “growth hormones” to short children to make them grow faster. These may cause some growth at first, but they soon make the bones mature and stop growing, so that the child stays smaller than he would have without treatment. Do not give hormones to speed growth.

Children who are very short for their age sometimes are made fun of by other children, or get treated as though they are younger than they really are. Life can be difficult for them and they may feel unhappy or unsure of themselves. It is important that everyone treat them just like other children their age. CHILD-to-child activities can help other children become more understanding (see Chapter 47).