



**Old Colony Memorial**

PRINTER-FRIENDLY FORMAT

## House Calls: Your child's bones

August 14, 2007 | *Old Colony Memorial*

By **Terence R. McAllister, MD**

Although most of the consequences of poor bone health, such as fractures and osteoporosis, mainly occur in older people, the foundation for bone health starts in childhood.

Bones are made up of a combination of living cells, a protein matrix and mineral (calcium, phosphate and magnesium) deposits. Bones are, in fact, living organs that are constantly growing. Bone cells, called osteoclasts, remove old bone so that the osteoblast cells can replace it with new bone. This is why a fractured bone can eventually repair itself. In children, the osteoblasts tend to be more active, which is one reason why broken bones in children tend to repair faster. When osteoclasts are more active than osteoblasts, bone is broken down, becoming weaker, leading to osteoporosis.

Bones grow in children not just by becoming longer, but they also become denser. Studies have shown that a person's bones reach peak bone mass at the end of puberty (late teens or early 20s), and, after this age, bones gradually become less dense. By optimizing bone health in childhood and adolescence, the strength of the skeleton can be more easily preserved.

Bone health is influenced by a multitude of factors, some of which we cannot control, such as gender, ethnicity and genetics. Three factors we can influence, however, are calcium, Vitamin D and physical activity.

Calcium is the dominant mineral component of bone and is the substance that gives bone much of its strength. Your body also uses calcium to help muscles and blood vessels contract and expand, to secrete hormones and enzymes and to send messages through the nervous system. It is recommended that adults get at least 1,000 mg of calcium daily and children get at least 1,300 mg. Unfortunately, our children and teenagers are not getting enough calcium. National nutrition surveys show that most teenage girls and almost half of teenage boys are not getting the recommended amount of calcium. Calcium can be found in dairy products - a serving of milk contains about 300mg of calcium - and in other foods, such as green leafy vegetables, tofu, broccoli, chickpeas, lentils, canned sardines, salmon and other fish with bones and Calcium-fortified foods such as juices and cereals. It is also possible to get calcium through dietary supplements and vitamins.

Vitamin D is a vitamin that aids the body's absorption of calcium and has been gaining increasing attention for its role in maintaining good health and preventing disease. Experts recommend that children and adults, get at least 400 international units of Vitamin D daily. The human body is able to create vitamin D when the skin is exposed to sunlight. However, exposure to sun also has negative consequences including an increased risk of skin cancer. Research has consistently shown that many Americans do not spend enough time outside to get the UV exposure they need to produce enough Vitamin D. The problem is especially acute during the winter months in parts of the world distant from the equator, like Massachusetts! You can get Vitamin D in the diet (4 servings of milk daily) or through a vitamin supplement. Breastfeeding mothers should be especially aware that breast milk does not contain Vitamin D. The American Academy of Pediatrics recommends that all breast fed babies receive a Vitamin D supplement.

Physical activity, especially weight bearing exercise, is necessary for healthy bone growth. Studies done on astronauts who spend extended periods of time in space have shown that they lose bone density, because their bones are not bearing weight. It is also well known that people who are bed ridden due to illness lose bone density. This is just one more benefit that exercise has for our bodies, and another reason to keep kids active.

Good bone health in childhood will help to protect bones and prevent osteoporosis in individuals as they age.

*Dr. Terence McAllister is the medical director of Performance Pediatrics in Plymouth. He is on the medical staff at Jordan Hospital.*

---

Copyright © 2007 [GateHouse Media, Inc.](#) Some Rights Reserved.  
Platform developed by [Etimes3, Inc.](#)

Wicked Local Plymouth :: 254 Second Avenue, Needham, MA 02494  
Phone: (781) 433-6700 | Email: [info@wickedlocal.com](mailto:info@wickedlocal.com)

Original content available for non-commercial use  
under a [Creative Commons](#) license.

