

How to care for your bones through the ages

July 9 2009, By Nancy Churnin

Bones are the body's first lines of defense. They protect the brain, heart and lungs and anchor the muscles. They keep us mobile. And all they ask in return is our support to keep them strong: good nutrition, weight-bearing exercise, calcium and Vitamin D.

Bones' needs also vary with age. You accumulate an astonishing 90 percent of all your bone mass by the time you're 21, so it pays to bank that calcium in your early years. After that, it's all about maintenance -- which is important if you don't want to be a senior citizen with broken hips or curved vertebrae, which can lead to hunched posture and difficulty breathing.

Here are tips on how to optimize bone health at the three major stages of life from doctors from Texas Health Presbyterian Hospital Dallas, Baylor Regional Medical Center at Plano and Texas Scottish Rite Hospital for Children:

Kids (birth to age 19)

This is when you need to think of drinking milk (or taking in other calcium-rich sources) as putting money in your bone bank as you strive to achieve your peak bone mass. Because once you hit adulthood, you are cruising on what you've accumulated in calcium and in Vitamin D, which helps you metabolize that calcium.

Healthy food intake, with lots of vitamins and minerals is key to maximizing your bone strength potential. Adolescent girls should be

especially wary of fad diets and alert to the signs of [anorexia](#) and [bulimia](#), as these can wreak havoc on bone health, says Dr. Karl Rathjen, a pediatric orthopedic surgeon at Texas Scottish Rite Hospital for Children.

Weight-bearing exercise of about 30 minutes most or all days of the week is important, but so is being careful to avoid major orthopedic injuries and overuses between childhood and adolescence, according to Dr. Amy Hayes, a pediatrician at Texas Health Presbyterian Hospital Dallas.

Dr. Hayes refers to these years as the "Growth Plate Era," because it's the time when long bones are getting bigger and going through the changes that will become permanent in adulthood. Damage to the growth plate can affect how much the bones grow, which can lead to uneven arms and legs.

Adults (ages 20 to 70):

When young adults leave their parents' home, it's crucial that they don't leave their good bone health habits behind. The time for building bone density has passed; now they must do their best to maintain and prevent bone loss.

Dr. Kim Allen, an internist at Texas Health Presbyterian Hospital Dallas, advises her adult patients to exercise at least 30 minutes five times a week, do weight-bearing exercise and take in at least two servings of calcium-rich foods, such as milk, yogurt, cheese and vegetables, daily.

It also helps the bones if you don't smoke, as that can inhibit the absorption of calcium and vitamin D. This is a particular issue for pregnant women because if they smoke, don't get enough calcium or vitamin D, or don't exercise, they can hurt their baby's bone-mineral

acquisition in the womb, according to a 2008 MRC Epidemiology Resource Centre and Centre for Developmental Origins of Health and Adult Disease report.

Seniors (older than 70 years)

Seniors need to keep up the weight-bearing exercises and good nutrition they established as adults, increasing calcium intake to at least 1,200 mg.

It is particularly crucial that women have a bone density assessment after menopause, says Dr. Mitch Carroll, gerontologist and director of the [Senior](#) Health Clinic at Texas Health Presbyterian Hospital Dallas.

Men may need this assessment, too, but it's not always clear at what age they should get it. But men who have lost height or have been exposed to steroids should get them as soon as possible, he says.

The noninvasive bone scan, which feels like a slow-moving X-ray, is vital for women, Dr. Carroll says, because the loss of estrogen after menopause causes a thinning of the bones. That can lead to osteopenia, which can turn into osteoporosis, which can cause the bones to fracture spontaneously, leaving a bedridden patient subject to blood clots or pneumonia.

Early detection of bone loss can be mitigated by a variety of [bone](#) strengthening therapies to help prevent serious problems.

"Even if you followed all the advice for each stage of life, all the healthy lifestyle modifications may not work because of genetic predisposition," Dr. Carroll notes. "But fortunately there's still a lot we can do if they stay active, stay strong, get informed and take the medicines we tell them." Sunscreen and vitamin D

Are our bones getting less calcium than in generations past? Dr. Murray Fox, a gynecologist on the Baylor Plano medical staff says yes. The reason? Even if we are drinking the same amount of milk and calcium-rich foods as our parents, we are getting less vitamin D, which is needed to absorb that calcium.

We can get vitamin D from the sun. But now we are getting less sun and less vitamin D - because of the increased use of sunscreen to block harmful UV rays.

That doesn't mean the answer is to go out in the sun unprotected. The American Academy of Pediatrics advises using sunscreen to protect your skin and making up the difference in [Vitamin D](#) supplements. Fox says that newborns through adolescents need 400 IU a day (premature babies need up to 800 IU), while adults and seniors need 800-1,000 IU.

HOW MUCH DO I NEED?

Normal daily recommended intakes in milligrams (mg) for calcium are generally defined as follows:

Persons U.S. (mg)

Infants birth to 3 years of age 400 to 800

Children 4 to 6 years of age 800

Children 7 to 10 years of age 800

Adolescent and adult males 800 to 1200

Adolescent and adult females 800 to 1200

Pregnant females 1200 to 1500

Breast-feeding females 1200 to 1500

Source: www.mayoclinic.com

BEYOND THE SUPPLEMENTS

You can also get calcium the old-fashioned way, from calcium-rich foods.

Food (amount) Milligrams (mg) of calcium

Nonfat dry milk, reconstituted (1 cup) 375

Lowfat, skim, or whole milk (1 cup) 290 to 300

Yogurt (1 cup) 275 to 400

Sardines with bones (3 ounces) 370

Ricotta cheese, part skim ($\frac{1}{2}$ cup) 340

Salmon, canned, with bones (3 ounces) 285

Cheese, Swiss (1 ounce) 272

Cheese, cheddar (1 ounce) 204

Cheese, American (1 ounce) 174

Cottage cheese, lowfat (1 cup) 154

Tofu (4 ounces) 154

Shrimp (1 cup) 147

Source: www.mayoclinic.com

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