Bone Health

Our bones do many things. They provide structure, protect organs, anchor muscles, and store calcium. Adequate calcium in your diet and weight-bearing physical activity help build strong bones, improve bone amounts, and may reduce the risk of weakening of bones (*osteoporosis*) later in life.

PEAK BONE MASS

By age 20, the average woman has acquired most of her skeletal bone mass. A large decline occurs in older adults which increases the risk of osteoporosis. In women this occurs around the time of menopause.

It is important for young girls to reach their peak bone mass in order to maintain bone health throughout life. A person with high bone mass as a young adult will be more likely to have a higher bone mass later in life. Not enough calcium consumption and physical activity early on could result in a failure to achieve optimum bone mass in adulthood.

OSTEOPOROSIS

Osteoporosis is a disease of the bones. It is defined as low bone mass with deterioration of bone structure. Osteoporosis leads to an increase risk of fractures with falls. These fractures commonly happen in the wrist, hip, and spine.

While men and women of all ages and background can develop osteoporosis, some of the risk factors for osteoporosis are:

- Female.
- White/Caucasian.
- Post menopausal.
- Older adults.
- Small in body size.
- Eating a diet low in calcium.
- Physically inactive.
- Smoking.
- Use of some medications such as prednisone.
- Family history.

CALCIUM

Calcium is a mineral needed by the body for healthy bones, teeth, and proper function of the heart, muscles, and nerves. The body cannot produce calcium so it must be absorbed through food. Good sources of calcium include:

- Dairy products (low fat or nonfat milk, cheese, and yogurt).
- Dark green leafy vegetables (bok choy and broccoli).
- Calcium fortified foods (orange juice, cereal, bread, soy beverages, and tofu products).
- Nuts (almonds).

Recommended amounts of calcium vary for individuals. Below is a guide for how much calcium you should take in daily, as outlined by the National Academy of Science.

RECOMMENDED CALCIUM INTAKES

AGE	AMOUNT MG/DAY
Birth - 6 months	210 mg
6 months - 1 year	270 mg
1 - 3 years	500 mg
4 - 8 years	800 mg

9 - 13 years . . . . . .1300 mg
14 - 18 years . . . . . .1300 mg
19 - 30 years . . . . . .1000 mg
31 - 50 years . . . . . 1000 mg
51 - 70 years . . . . . 1200 mg
70 or older . . . . . 1200 mg
Pregnant & lactating . 1000 mg
14 - 18 years . . . . . 1300 mg
19 - 50 years . . . . . 1000 mg

Source: Dietary Reference Intakes for Calcium, National Academy of Sciences, 2009

Vitamin D also plays an important role in healthy bone development. Vitamin D helps in the absorption of calcium (this is why milk is fortified with vitamin D).
For more information on calcium and children visit the National Institute of Child Health and Human Development (NICHD) Website at http://www.nichd.nih.gov/milk/milk.cfm.

WEIGHT-BEARING PHYSICAL ACTIVITY

Regular physical activity has many positive health benefits. Benefits include strong bones. Weight-bearing physical activity early in life is important in reaching peak bone mass. Weight-bearing physical activities cause muscles and bones to work against gravity. Some examples of weight bearing physical activities include:

- Walking, jogging, or running.
- Field Hockey.
- Jumping rope.
- Dancing.
- Soccer.
- Tennis or Racquetball.
- Stair climbing.
- Basketball.
- Hiking.
- Weight lifting.
- Aerobic fitness classes.

Including weight-bearing physical activity into an exercise plan is a great way to keep bones healthy and meet physical activity recommendations set forth in the Dietary Guidelines for Americans.
Adults: Engage in at least 30 minutes of moderate physical activity on most, preferably all, days of the week.
Children: Engage in at least 60 minutes of moderate physical activity on most, preferably all, days of the week.

REFERENCES

For more information on the Dietary Guidelines for Americans please visit the Web site at: http://www.cnpp.usda.gov/Dietaryguidelines.htm

For more information on bone health and osteoporosis please visit the National Osteoporosis Foundation online at http://www.nof.org/

Most information courtesy of the Department of Health and Human Services.

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