

BASICS OF BONE HEALTH

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Bones are the living tissues that form the major portion of your skeleton. There are 206 bones in an adult's body whereas infants have around 300 bones in their body. Bones help you in mobility and protect your internal organs.

Bone structure

Your bone is made up of proteins and other minerals like calcium, phosphate and magnesium. Collagen (a protein), which is a cementing substance, forms the structure and framework of your bones.

▪ This basic structural components of a bone are:

- Periosteum:
This is a thin membrane that covers the outer surface of your bone. It consists of nerves and blood vessels.
- Compact bone: This forms the outer layer of all your bones and is very dense. When you look at a skeleton, the compact bone is what you see.
- Cancellous bone: This looks like a sponge and is not as hard as the compact bone. It covers the bone marrow which is the innermost part of your bone.

▪ **Bone growth:** Your bones continuously keep undergoing a vigorous process of resorption (removal of old bone) and deposition (formation of new bone) known as bone metabolism. There are two major Cells involved in the resorption and deposition of your bones. They are:

- Osteoblasts: These are Cells that are responsible for the formation of new bones.
- Osteoclasts: These are Cells that are responsible for the breaking down of bones.

It is with the cooperation of these Cells that your body maintains proper balance of minerals required for your body's physiological functions. The process of resorption and deposition goes on throughout life.

▪ **Diet and bone health:** Intake of adequate calcium is necessary to maintain healthy bones since your bone contains 99% of the calcium present in your body. Other important nutrients include phosphorus, magnesium, fluoride and vitamin K. Foods that are rich in calcium are milk and dairy products.

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Vitamin D is required for proper absorption of calcium from food. Sunlight provides your body with enough vitamin D which is absorbed by your skin. It can also be obtained through dietary sources such as fortified milk, vitamin D-fortified foods and fatty fish.

▪ **Factors affecting bone health.**

There are various factors that affect bone health.

- **Genetics:** Bone disorders can run in the family. If your parents or siblings have had bone problems, you are more likely to get it. Certain ethnic groups have comparatively stronger bones than other ethnic groups.
- **Diet:** Adequate calcium and vitamin D is required for healthy bones. Cigarette smoking and consuming alcohol increase the risk of bone loss.
- **Physical activity:** Regular exercises and physical activity strengthen your bones.
- **Age:** The strength of your bones decreases with age. You are more likely to develop bone problems as you reach Menopause.
- **Body size:** Thin and underweight women tend to have weaker bones.

And finally

One can maintain healthy bones with a calcium rich diet and physical exercise. Bone disorders can affect the quality of life. When it comes to certain exercise, check with your doctor before you embark on an exercise schedule.

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