Mashhad University of Medical Sciences

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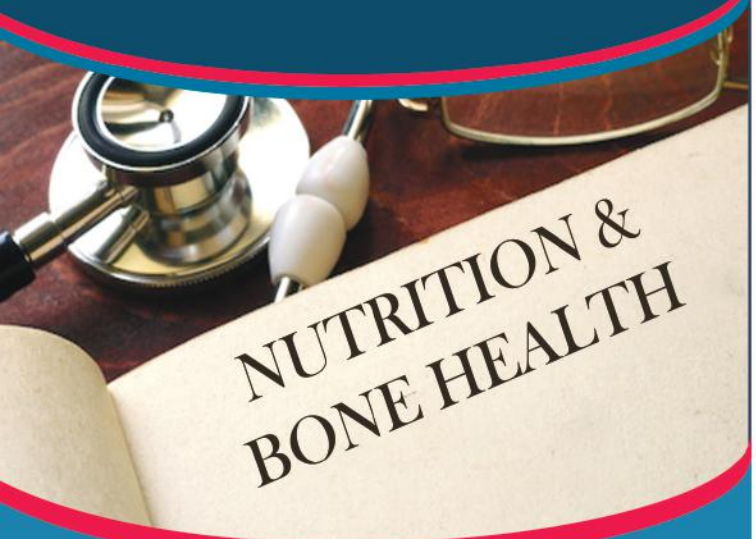
Nutrition & Bone Health



Dr. Majid Ghayour Mobarhan
Nutritionist from the UK

Protein:

Dietary protein provides the body with a source of amino acids to support building of the bone matrix. It also has a favorable effect on bone by increasing blood levels of insulin-like growth factor I which plays an important role in bone formation. Variation in protein intake during childhood and adolescence can affect skeletal growth. In older adults, low protein intake is associated with loss of bone mineral density at the hip and the spine.

These three nutrients are very important to optimize bone health in children and adolescents.

Important nutrition for bone health found in the new guidelines:

- Reduce daily sodium intake to less than 1 teaspoon per day.
- Consume alcohol in moderation-up to one drink per day for women and two drinks per day for men.
- Choose foods that include calcium and vitamin D: select fat-free or low-fat options available for milk, yogurt, cheese, or fortified soy beverages. The good news is that fat-free and low-fat milk products actually contain more calcium than higher fat versions.
- Increase vegetable and fruit intake, especially dark-green, red and orange vegetables, and beans or peas. They contain important bone health nutrients like: vitamin A, vitamin C, vitamin K, magnesium and iron.

- Avoid very low-calorie diets: Diets providing too few calories have been found to reduce bone density, even when combined with resistance exercise. Consume a balanced diet with at least 1,200 calories daily to preserve bone health.
- Caffeine increases urinary and fecal calcium losses and so, in combination with a diet low in calcium, has the potential to adversely affect bone health.

Osteoporosis

For patients with osteoporosis or low bone mass, clinical guidelines have been prepared by the North American Menopause Society. These recommendations provide a range of recommended calcium and vitamin D intakes that can exceed the recommendations for the general population. Patients can be monitored for risk of osteoporosis to determine when diet is sufficient or drugs become necessary.

Nutrition and Bone Health

Bone is a living tissue and consequently requires all essential nutrients for growth and maintenance.

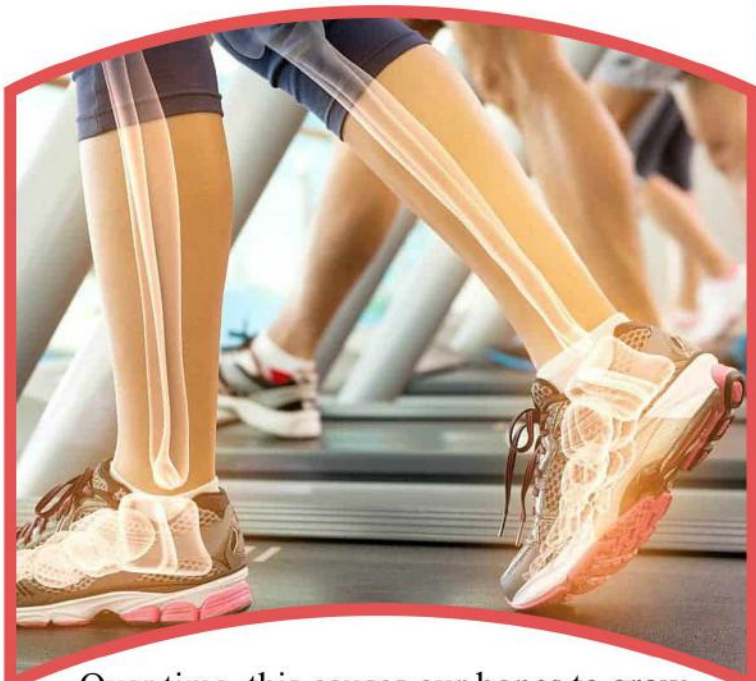
The health and strength of our bones rely on a balanced diet and a steady stream of nutrients, most importantly, calcium and Vitamin D.

Calcium is a mineral that people need to build and maintain strong bones and teeth. It is also very important for other physical functions, such as muscle control and blood circulation.

Calcium is not made in the body; it must be absorbed from the foods we eat. To absorb calcium from food effectively, our bodies need Vitamin D.

Nutrition & Bone Health

If we do not have enough calcium in our diets to keep our bodies functioning, calcium is removed from where it is stored in our bones.



Over time, this causes our bones to grow weaker and may lead to osteoporosis that is a disorder in which bones become very fragile.

Nutritional Needs

Calcium:

Calcium is important for bone health throughout the life-course, particularly during the teenage years when about half of our bone mass is accumulated.

Vitamin D:

Vitamin D plays two key roles in the development and maintenance of healthy bones:

- Assists calcium absorption from food in the intestine
- Ensures correct renewal and mineralization of bone