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INDIA'S #1 COOKERY AUTHOR

VOLUME X-ISSUE 5

JAN-FEB 2013 Rs.50

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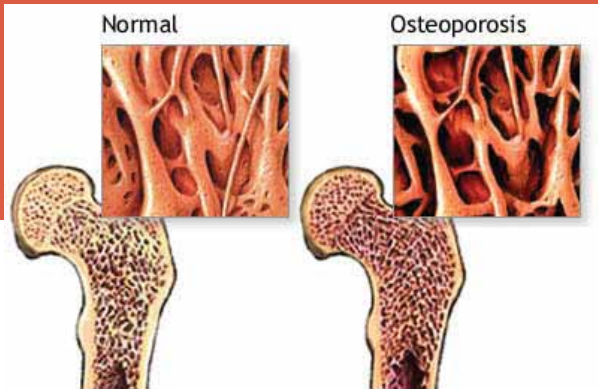


ISBN 818949144-X



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# Bones and Osteoporosis

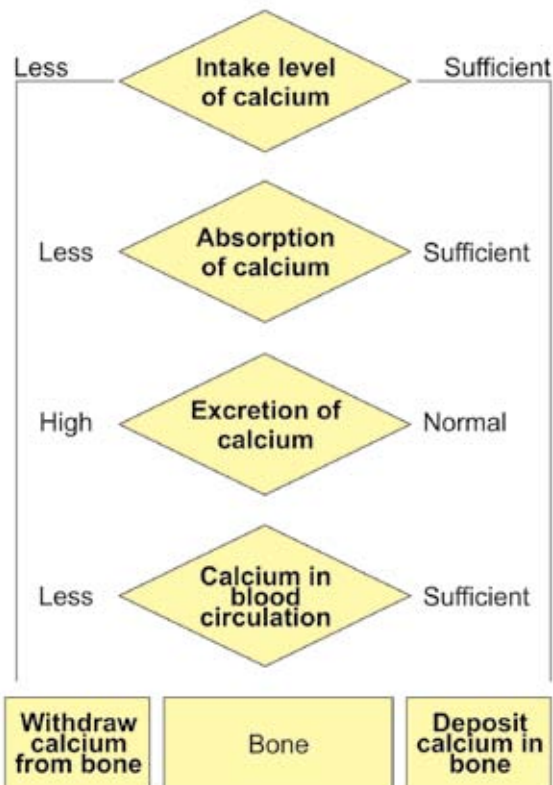


*Dr. Nupur Krishnan sheds light on osteoporosis and explains how to maintain bone health*

## What is osteoporosis?

Osteoporosis is emerging to be one of the most significant health risk especially among elderly people. After middle age bone loss is more than bone growth hence bone mass is depleted and it loses its strength. Such bones are weak and fragile even with a slight impact.

Bones may seem like hard and lifeless structures, but they are in fact living, growing tissue. Bone is an important organ of the body which gives shape, support and structure to body. The entire body dynamics depends on the strength of bones. Strength of a bone depends on many factors including its size, shape and structure as well as the density of the mineral in it.



## Osteoporosis: Indian Scenario

- One out of three females and out of eight males in India suffers from osteoporosis.
- 30 Crore Indians are suffering with osteoporosis
- Osteoporosis is responsible for more than 1.5 million fracture annually.

## Factors that can lead Osteoporosis are

### ■ Ageing :

Risk of Osteoporosis starts from middle age and at elder age it increases rapidly .

### ■ Heredity

- Asian backgrounds are more prone for the risk of Osteoporosis.
- If a person's parents had osteoporosis, he or she may be at higher risk.



### ■ **Nutrition and lifestyle:**

- Food being the major source of bone building vitamins and minerals your diet with inadequate nutrients like Calcium, Phosphorus, Magnesium and Vitamin K will lead to Osteoporosis.
- Often people indulge in starving or crash diets thus deprive their body adequate calcium & nutrients which is also causing Osteoporosis even among younger generation.
- Low body weight with lesser muscles to support stress on bones which may cause frequent fractures. People with slender body and thin bones are at greater risk.
- A sedentary lifestyle and lack of physical activity causes bones to lose its strength.
- Cigarette smoking and Excessive alcohol consumption can interfere in absorption of Calcium and leads Osteoporosis.

### ■ **Medications:**

Medications for blood pressure, Thyroid and steroids like Corticosteroids, Diuretics prevents absorption of calcium and cause Osteoporosis.

### ■ **Health condition**

Illness like Thalassemia, Thyrotoxicosis, Crushing's syndrome, Insulin dependent diabetes, Liver disease and Increased renal excretion of Calcium can lead to Osteoporosis.

■ **Gender:** Though both men & women are prone for Osteoporosis at old age, women are more likely to develop osteoporosis because of estrogen deficiency after menopause.

## **Symptoms of Osteoporosis?**

Osteoporosis is a "silent diseases" because bone loss occurs without any early visible symptoms until approximately 25% of bone density is lost so that a sudden strain, bump or fall causes fractures.

**The following symptoms are early warnings of Osteoporosis**

- Pain in the hip, arm, wrist, legs, lower back & Neck
- Loss of height and a stooped posture

## **How is Osteoporosis Detected?**

Specialized tests called Bone Mineral Density Test, DEXA and Blood calcium levels can determine risk of Osteoporosis.

## **Role of Nutrition in Osteoporosis.**

Your food plays crucial role in preventing and managing Osteoporosis. A healthy diet with adequate bone building vitamins and minerals helps preventing as well as managing Osteoporosis at any age.

Normally more than 50% of Calcium ingested is getting excreted by urine & skin every day. If the rate of excretion or depletion of these vitamins and nutrients are high due to diseases like kidney and liver diseases shall be treated nutritionally.

Because medications like Corticosteroids, diuretics, medications for blood pressure, Hyperthyroid etc can prevent absorption of calcium, these health conditions shall be treated with nutrition therapies.

A Clinical Nutrition therapy helps building adequate muscles to support bones as well as reducing excess weight which puts more stress on bones.

You can protect yourself from the dangers of osteoporosis by taking these steps:

- Consult a clinical Nutritionist to assess your risk factors.
- Know your nutritional requirements
- Make sure your diet has enough calcium and other vitamins & minerals.
- Maintain ideal body weight
- Avoid alcohol and quit smoking.
- Do adequate exercise to strengthen bones

## **How much do you need?**

Your Calcium requirement changes with age, gender and other health conditions. As per Recommended Dietary Allowance the following is normal requirement. During pregnancy and lactation the Calcium requirement increase by around 200 mg.



Age	Requirement
1-3 yrs	500 mg
4-8 yrs	800 mg
9-18 yrs	1300 mg
Above 51	Above 1200 mg
After menopause	1200 mg

The following food items will enhance your Calcium levels and bone mass. If you are still not getting enough calcium, you may need to take supplements.

Sources	Calcium per serving (mg)
Low-fat milk	297 mg/cup
Low-fat cured (yogurt)	345 mg/cup
Ice cream	176 mg/cup
Swiss cheese	272 mg/oz.
Cottage cheese	155 mg/cup
Sardines (canned, with bones)	371 mg/3 oz.
Oysters (raw)	113 mg/7-9
Salmon (canned with bones)	167 mg/3 oz.
Beans (dried, cooked)	90 mg/cup
Macaroni and cheese	362 mg/cup
Dark green leafy vegetables	200 mg/cup
Orange (medium size)	52 mg/one
Wheat bread	32 mg/slice

### Caution of Toxicity

Taking more calcium than then you need could also be harmful as the excess Calcium can deposit in Arteries and harden them. This may result in heart attack and stroke.

### Vitamin D

Your body needs vitamin D to absorb the Calcium you consume through food. You shall get 400 IU of vitamin D daily and 15 to 20 minutes of exposure to sun light helps increasing Vitamin D availability to body.

Deficiency of other vitamins and minerals will also result in Osteoporosis, hence your diet must be balanced with all these nutrients.

Major Sources of Bone Building Nutrients	
Nutrient	Major Sources
Phosphorus	Dairy product (milk, paneer, cheese), green leafy vegetables (palak, methi, drumstick leaves), calcium fortified beverages and foods
Magnesium	Seeds, nuts, legumes, dark green vegetables
Fluoride	Fluoridate drinking water, foods prepared with fluoridated water
Vitamin D	Fortified milk, fatty fish, exposing skin to sunlight
Vitamin K	Green leafy vegetables, vegetables oils

## TAKING SAFETY MEASURES

Your home should be arranged for safety and convenience. Take these steps to avoid accidents.

- Keep items you use often within easy reach. Avoid bending over or lifting heavy objects.
  - Make stairways safe with railings and nonslip surface.
  - Equip your bathroom with grab bars and other aids, such as night-lights.
- Apply adhesive strips to your tub or shower floor. Grab bars on bathroom walls should be installed
- Watch for small pets or objects on the floor.
  - Use handrails when going up and down stairs.
  - Wear shoes that grip well. Don't walk around in high heels, socks, or slippers.
  - Aged people can use a cane /walking stick for added stability.



**Dr. Nupur Krishnan - Ph.D. Food and Nutrition Director (Bio-Logics Nutrition Clinics)** - is a Clinical Nutritionist with a decade of proven experience in preventive and clinical nutrition therapies for heart attack, obesity, diabetes, high cholesterol, stroke, blood pressure, thyroid, kidney disorders, liver disease, constipation, anaemia, etc.

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