

NATIONAL NUTRITION MONTH

Rashtriya Poshan Maah

#PoshanMaah
1-30 September

Converging towards a healthy walk through life

Bone Health

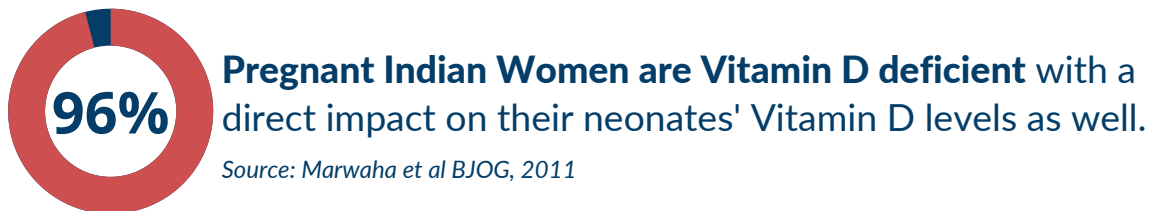
Your bones are mainly composed of calcium salts and collagen and perform many important functions of the body such as allowing movement, storage of calcium and giving a framework to your body etc.

It is vital to take care of your bone health throughout your life via correct nutrition and appropriate exercise.



Indians are vitamin D deficient despite abundant sunlight.

Source: CV Harinarayan et al Frontiers in Endocrinology, 2021



Pregnant Indian Women are Vitamin D deficient with a direct impact on their neonates' Vitamin D levels as well.

Source: Marwaha et al BJOG, 2011



Osteoporosis affects an estimated **50 million Indians**.

Source: Binita Priyambada, Tech2, 2019

Poor Bone health is responsible for causation of **8.5 million fractures** annually worldwide.

Projected number of **Osteoporotic Hip Fractures** to reach **6.26 millions** worldwide by 2050.

Age factor!

From birth up to age 10

Bone starts to develop and continues to grow strong.

10-20 yrs

This is the age where peak bone mass is established. This phase is also called as 'BONE BANK'.

20-30 yrs

Your bones will reach their peak strength during these years. It is important to get adequate calcium and exercise to help achieve peak bone density.

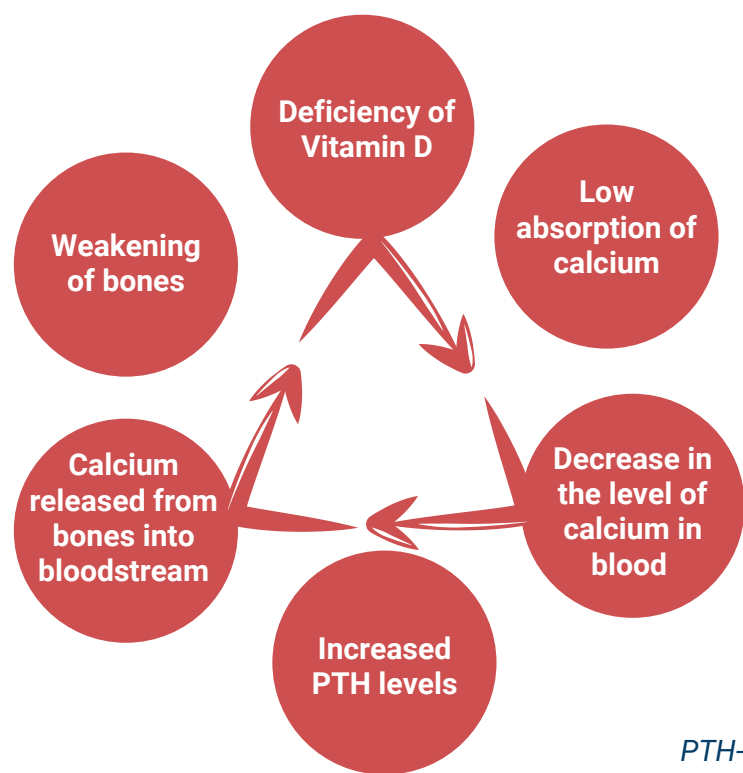
30-50 yrs

After you reach your peak bone mass, you will begin to gradually lose bone. Up until about age 40, all the bone removed is replaced. After age 40, however, less bone is replaced & remodeled.

Source: AAOS (American Academy of Orthopedic Surgeons); National Osteoporosis Foundation; NHS UK



Bone Loss: Interplay of Calcium & Vitamin D insufficiency



PTH-Parathyroid hormone

Pro-Bone nutrients

Nutrients	Role	Sources	RDA (Adult Sedentary)	
			Men	Women
Calcium (mg)	Helps develop strong bones and delay the onset of osteoporosis.	Milk & milk products, ragi, green leafy vegetables and nuts.	1000	1000
Vitamin D (IU)	Helps absorption of calcium; essential to maintain bone strength.	Sunlight & Vitamin D fortified products.	600	600
Vitamin K (mcg)	Essential for mineralization of the bone	Greenleafy vegetables, eggs, liver and meat	55	55
Magnesium (mg)	Inadequate intake can lead to fragile & brittle bones and increase the risk of osteoporosis.	Nuts, whole grains, green leafy vegetables, seafood etc.	440	370
Phosphorous (mg)	Essential for mineralization & functioning of the bone.	Milk & it's products, legumes, nuts, fish and egg etc.	1000	1000

Osteoporosis

A condition that results from reduced density and quality of bone resulting in fragile and porous bones that are at an increased risk of injuries and fractures.

SILENT DISEASE

Until a fracture happens people do not even realize they have weak bones.

Main causes

1. Inactive lifestyle
2. Calcium & Vitamin D deficiency
3. Oestrogen deficiency in Women

Risk factors

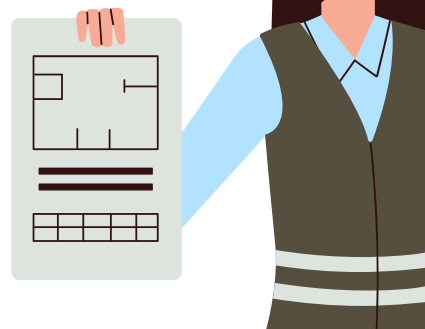
- Sedentary life style
- Thin built
- Old age
- Family history of Osteoporosis
- Early Menopause
- Poor Calcium and Vitamin D intakes

Early Signs to look out for

- Lower back pain
- Frequent injuries/fractures
- Loss of height
- Decreased strength (over a long period) etc.

Diagnosis

Osteoporosis is diagnosed by measuring "Bone Density", which is ideally performed using DEXA Densitometer. Ideally all women at menopause and all individuals over 65 should undergo this test.



Source: Indian Society for Bone & Mineral Research; Illinois Bone & Joint Institute.

Tips to maintain bone health

- 1 **Sun Exposure**
Let your skin expose to sunlight for about 10-15 mins (between 10am - 4 pm and preferably in summers). It helps activate Vitamin D in your body.
- 2 **Include Protein**
Include good amount of protein from milk and milk products, beans, lentils, lean meat, eggs etc.
- 3 **Get your Calcium**
In your daily diet, include a minimum of one glass of milk every day. In case of lactose intolerance choose almond or soy milk.
- 4 **Get enough Vitamin D**
Include Vitamin D fortified (packaged) products in your daily diet (Read the labels for more information).
- 5 **Regular Physical activity**
Exercise daily as they help thicken and strengthen the bones, lack of exercise makes the bone thin and light making them prone to injuries. Avoid overuse of muscles and heavy lifting.