

# Diabetes and Osteoporosis

The rising trend of osteoporosis worldwide indicates a need for greater awareness to improve bone health that reduces the risk of falling. Eating the right kinds of food and exercise can give us the maximum peak bone mass and boost our bone density at any age. Nutritionist Kohila Govindaraju breaks it down for you.

Many of us think that osteoporosis is only an old person's disease. While ageing is one among many factors of osteoporosis, with men and women losing up to 3% of bone mass each year after the age of 50, osteoporosis can strike at any age!

Osteoporosis results from many factors such as:

- Deficiency of calcium in the diet
- Poor absorption of calcium
- Eating disorders
- Lack of exercise
- Hormone disorders
- Hereditary factors

Diabetes is a metabolic disorder and osteoporosis is a silent disease where bones lose their mass, thus becoming weaker and increasing the risk of fracture. So, we always wonder how diabetes is related to osteoporosis. Studies show that early onset of diabetes, in particular, is associated with reduced bone density and patients with type 1 diabetes show evidence of low bone mass following adolescence.

Diabetes Osteoporosis is a disease characterised by abnormally low bone mass. In individuals with type 2 diabetes, though their bone density is not low, they still have a higher risk of fractures than normal people because persons with a large body size and relatively high bone mass have higher risk of falling due to hypoglycaemia (low blood sugar level) and visual impairment.



With age, bone can gradually become weak due to bone-thinning process. In women, this process accelerates after menopause.

*Lifestyles characterised by low physical activity and high-energy food intake contribute to an increasing incidence of diabetes and osteoporosis.*

The typical diet of teenager contains much saturated fat, carbonated drinks/soda and not enough milk. Young adults should be encouraged to achieve normal peak bone mass by getting enough calcium through their diet for a healthy bone formation.

## What can we do to prevent Diabetes and Osteoporosis?

### Nutrition

Making a commitment to healthy eating is a great start towards a healthier life.

Type 1 (insulin dependent) diabetic individuals must take insulin and monitor the blood glucose very closely. Diets that minimise large fluctuations in blood glucose are more useful. Foods or combination of foods that have low glycaemic index can be considered and spacing the meals throughout the day are very important for maintaining the blood glucose level.

Keeping your weight in check, being active, and eating a healthy diet can prevent most cases of type 2 (non-insulin dependent) diabetes. Our diet should include complex carbohydrates, low-fat dairy products, low sodium, low saturated fat, and cholesterol with adequate protein and fibre, green leafy vegetables, fruits and nuts.

### Calcium

Calcium is the cornerstone of strong bones. A diet rich in calcium and vitamin D helps to maintain healthy bones. Calcium also plays a major role to keep the muscles, nerves and heart functioning, as well as in aiding the blood clotting. Young adults should have 1,000 mg of calcium through diet. Milk is considered an easy source of calcium. A cup of milk provides 300mg of calcium. Go for high calcium milk. Calcium in dairy products is better absorbed than plant sources.

What if you are lactose intolerant? Do not fret. We can very well tolerate yoghurt! A cup of yoghurt contains the same amount of calcium as a cup of milk.

It is interesting to learn that green vegetables do contain large amounts of calcium. Take a look at the list of vegetables that are high in calcium:

- pak choy
- chards
- chinese cabbage
- radish leaves
- broccoli
- chestnuts
- almonds
- pistachios
- hazelnuts
- sunflower seeds.

Seafood, such as the kinds below, provides a good source of calcium:

- salmon
- shrimp
- oysters
- clams
- sardines



Ikan bilis (anchovies) and eggs are also good sources of calcium. Soybean is rich in isoflavones, a plant based chemical that strengthens the bone density.

Consumption of carbonated drinks in the long run may end in profound loss of calcium. As far as caffeine and sugar are concerned, they both cause dehydration and massive depletion of minerals (iron and calcium).

Teenagers are highly affected because of the huge amounts of carbonated beverages they consume. Cut those unnecessary calories and health hazards from your diet. Stay hydrated with water or non-sugared drinks.

Salt is another culprit that deprives the body of calcium. The more salt we take, the more calcium gets carried away by urine.

### Sunlight

Never underestimate the power of the sun. It may not be classified as a nutrient but it helps in the synthesis of a much neglected nutrient, vitamin D. Vitamin D that plays a major role in absorbing calcium. Enjoying a little sunlight for about 10 to 15 minutes per day can provide the body the vitamin D it needs. Most adults need at least 400 units of vitamin D.

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### Exercise

Inactivity is not good for bone health. Exercise has shown to reduce the risk of non-insulin dependent diabetes because it helps insulin to lower blood glucose.

A daily routine of 30 minutes per day is recommended to provide cardiovascular benefit. Like muscle, bone is a living tissue that responds to exercise by becoming stronger. We need to motivate ourselves by changing the type of exercise from time to time so that we enjoy the activity. Weight bearing exercises like walking, dancing, stair climbing where bone and muscles work against gravity, all help to maintain and develop healthy bones.

Strength training activities that apply weight or resistance to specific muscles also work directly on our bones. Training with free weights can be as simple as lifting 0.5kg weight or 0.5 litre water bottles in each hand. Tai chi and yoga can help improve balance and bone density.

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