



Indian Dietetic Association

# Dietary Guidelines for Renal Calculi

## What is Renal Calculi?

Renal Calculi also known as kidney stones are formed when substances like calcium, oxalate, uric acid, phosphate, etc that are present in the urine, crystallize on the inner surfaces of the kidney or the ureters. Generally, the occurrence is more common in men than in women. Risk factors for causation of stones are genetic, obesity, less water and fluid intake, and other environmental factors like hot climate. Most common constituents of kidney stones are calcium oxalates (75%) and urates or phosphates. Uric acid stones are more common in individuals with gout.

### **DISCLAIMER**

This document is for information purpose only. It acts as a basic guideline for Renal Calculi. For specific and individual dietary advice and meal plans, please consult a qualified dietitian/nutritionist.

## *Dietary treatment guidelines*

**Stay Hydrated** – Drink plenty of fluids like plain water, lemon water, coconut water, buttermilk, fruit juices, vegetable soups so as to ensure urine output >2 litres per day.

**Step up your Vitamin C intake** – Incorporate citrus fruits - lemon, orange, musambi, in your diet as citrates in natural form, and not supplements, have a protective role in prevention of crystal formation.

**Limit Salt intake** – High sodium foods like table salt, papad, pickles, cheese, salt biscuits, namkeens, etc need to be restricted as increased sodium levels promote calcium build up in urine. Check labels on packaged and processed foods. Discourage the habit of eating packaged foods.

**Lower Animal Protein** - Lower the intake of red meat, chicken and fish if hyperuricemia is present. Consumption of plant-based proteins is better to control uric acid, except those foods that are high in purine like whole pulses and peanuts.

**Consume natural calcium rich foods** – It is better to get your calcium from natural food sources like milk, paneer, curd, tofu, cheese, egg, and green leafy vegetables, rather than from supplements. If dietary calcium intake is less, oxalates may rise thereby increasing the risk of stone formation.

**Restrict oxalate rich foods** – It is advisable to restrict foods rich in oxalates – strong tea, coffee, cocoa, chocolates, nuts - almonds, cashew nut, groundnut, gingelly seed, poppy seed, spinach, tomato, lady's finger, custard apple, soybeans, etc for preventing oxalate stones.

**Avoid carbonated drinks** – These are high in sugar providing empty calories and high in phosphates which increase the risk of kidney stone formation.

**Restrict Alcohol** – Alcohol dehydrates the body thereby decreasing the urine output.

**Reduce weight** - Reduce your weight if obese, preferably maintain your BMI < 23kg/m<sup>2</sup>.

It is advisable to restrict foods according to the type of stone formed. Develop the habit of drinking ample fluids so as to prevent stone formation. Other comorbidities like diabetes, hypertension, chronic kidney disease may exist which need to be addressed along with the renal calculi.