

## **KIDNEY STONES / URINARY CALCULI (URIC ACID STONES):**

The formation of crystals and calculi due to mineral deposits in urine are known as urinary calculi, when formed in kidney are known as kidney stones but can form anywhere in the urinary tract and they are named depending on the site where they are formed.

Uric acid - a waste product that normally passes out of the body in urine. About 10% of kidney stones are made of uric acid.

### **CAUSES**

- 1) Family history of kidney stones.
- 2) Hot climate and dehydration.
- 3) Working in hot environment.
- 4) Decreased intake of water.
- 5) Deficiency of vitamin B6 and magnesium.
- 6) Sedentary life style.
- 7) Hereditary disease - renal tubular acidosis develop kidney stones.
- 8) Cystic kidney disease.
- 9) Hormonal disorder.
- 10) Drugs used to treat HIV.
- 11) Uric acid stones: more common in men than in women.
- 12) Low urine output.
- 13) Blockage of the urinary tract.
- 14) Diet high in animal protein, such as red meat.
- 15) High intake of alcohol.
- 16) Results from a problem in metabolizing purines.
- 17) Gout.
- 18) Inflammatory bowel disease.
- 19) Excess intake of vitamin D
- 20) Urinary tract infection.
- 21) Chemotherapy.

### **DIETARY MANAGEMENT**

- 1) Kidney stones have tendency to reoccur, it can be prevented by some dietary changes. Depending upon the type of stones you can make necessary changes in your diet and prevent stone formation.
  - Fluid intake:
    - Drink lots of water, fruit juice, vegetable juice and other drinks. At least 50% total fluid intake should be water.
    - Drink about 3-5 litres of water as water dilutes urine and thereby hinders the stone formation.
    - Drink enough to ensure the passage of 2000 ml / 70 oz of urine per day.
    - Never let yourself to become dehydrated. Drink more water if you are doing strenuous work or are working in hot humid climate.
    - You can drink barley water and coconut water daily, it helps in removing stones.
  - Drink lots of orange juice or other citrus fruit juices like - grapefruit, cranberry and grape juice. Citrus fruits especially orange juice is rich in potassium and citrate, potassium citrate is commonly used to prevent kidney stones.
  - Foods that have been shown to increase the amount of oxalate in urine include

- 2) -spinach
- 3) -rhubarb
- 4) -nuts
- 5) -wheat bran
- 6) -Avoiding these foods may help reduce the amount of oxalate in the urine.
  - Reduce sodium intake. High sodium intake increases the risk of kidney stone by increasing urinary saturation of calcium phosphate and monosodium rate and decreases the inhibitory activity against calcium oxalate crystallization.
  - Increase intake of fibre - bran, whole grains, oat, green leafy vegetables, peas, beans, potatoes, raw vegetables, salads, dried fruits and fresh fruits.
  - Consume good amount of B-complex vitamin daily, especially pyridoxine (Vitamin B-6) and B-1 (thiamine) as their deficiency is associated with formation of stones.
  - Reduce intake of sugar as it is associated with kidney stones.
  - If possible stick to vegetarian diet. Studies have shown that plant sources of oxalates and calcium are not the cause for stone formation. Diet high in animal protein affects certain minerals in the urine which aids in the formation of kidney stones.
  - Avoid high purine foods. They lead to high production of uric acid.
  - Stop eating MEAT, be a vegetarian as meats are major sources of purine.
  - The following foods are very high in purine and should be avoided completely:
    - Anchovies, herring, mackerel, roe, sardines, scallops, shrimp, mussels, partridge, meat and meat extracts (oxo, bovril), red meat, mincemeat, goose, bouillon / broth / consommé of brains, kidney liver and heart.
    - Dried legumes, sweetbreads, yeast (baker's and brewer's), yeast extracts (marmite, vegemite).
  - If possible avoid alcohol or limit alcohol consumption to 1 drink three times a week. Completely avoid beer.
  - Consume moderate amount of protein. Instead of animal proteins consume plant sources of proteins.
  - Limit fat intake, foods high in fats are listed above.
  - Consume lots of vitamin C; avoid crystallization of uric acid and helps in urinary excretion of uric acid. Consume buffered form of vitamin C, ascorbate.

### **CONSULT YOUR PHYSICIAN**

- If you have continuous pain with the above mentioned symptoms contact your physician for proper diagnosis and treatment.
- Do not make changes in diet before medical evaluation of the stone / urine.
- If you notice blood or pus in urine see you physician immediately.
- If you have fever, frequent desire to urinate, continuous pain it is suggestive of infection see your physician immediately.
- Do not self medicate or take any supplements without consulting your physician.
- If you pass stone in urine take it for medical evaluation / chemical analysis of its content.

**NOTE : PLEASE CONTACT WITH YOUR DOCTOR FOR EXACT DIET FOR THE HEALTH PRBLEMS YOU HAVE.THIS A SAMPLE DIET CHART TO GET THE IDEA OF YOUR DAILY ROUTINE FOOD INTAKE TO MAKE YOUR LIFE HEALTHY .**