

# Cauvery College for Women (Autonomous)

Nationally Accredited (III Cycle) with 'A' Grade by NAAC

Annamalai Nagar, Tiruchirappalli-18.



Name of the Faculty : **B.THANUJA**

Mobile Number : 9894700414

Designation : Associate Professor

Department : Food Service Management &  
Dietetics

Programme : Bsc., Nutrition & Dietetics

Batch : 2016-2017 Onwards

Semester : VI

Course Title : **Dietetics –II**

Course Code : **16SCCND8**

Unit : II

Topics Covered : Urinary Calculi

# URINARY CALCULI

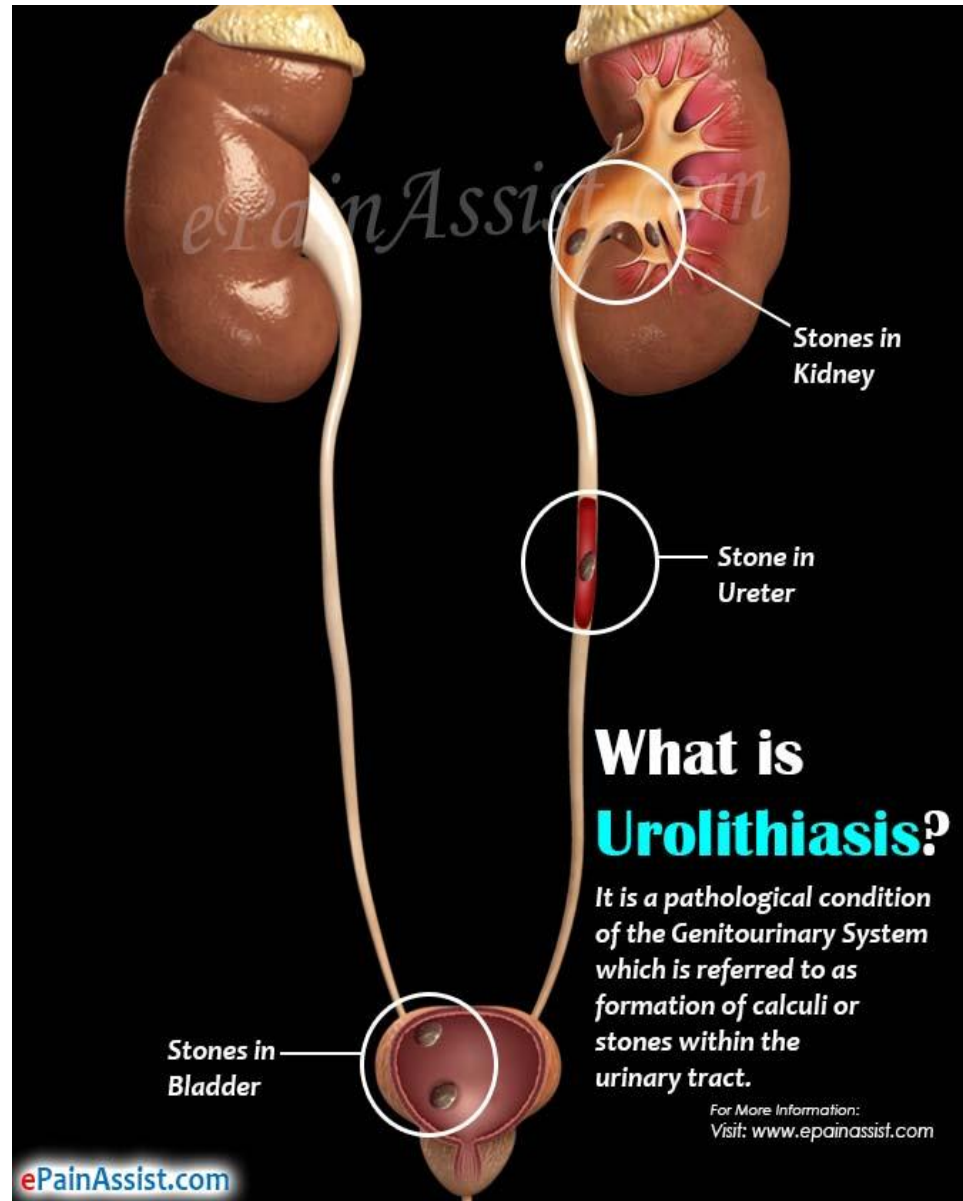


**B.THANUJA**  
**Associate professor & Head**  
**Dept. of Food Service Management & Dietetics**  
**Cauvery College For Women(Autonomous)**  
**Trichy.**

## Kidney stones

(renal lithiasis, nephrolithiasis or urinary calculi ) are hard deposits made of minerals and salts that form inside kidneys.

Often, stones form when the urine becomes concentrated, allowing minerals to crystallize and stick together.



# Symptoms

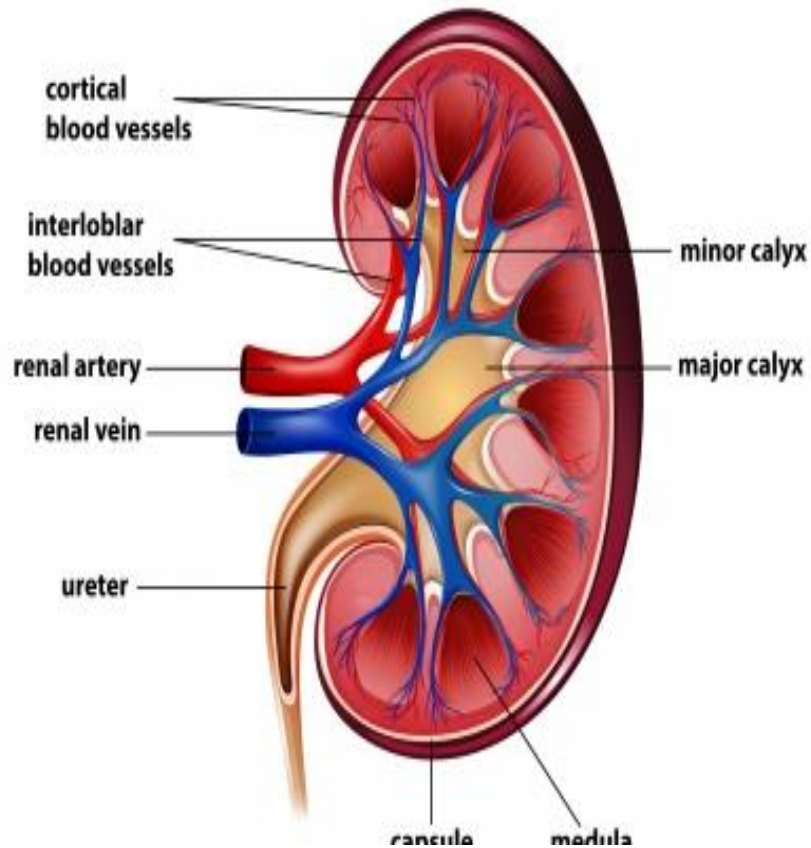
- Severe pain in the side and back, below the ribs
- Pain that radiates to the lower abdomen and groin
- Pain that comes in waves and fluctuates in intensity
- Pain on urination
- Pink, red or brown urine
- Cloudy or foul-smelling urine
- Nausea and vomiting
- Persistent need to urinate
- Urinating more often than usual
- Fever and chills if an infection is present
- Urinating small amounts

## Risk factors

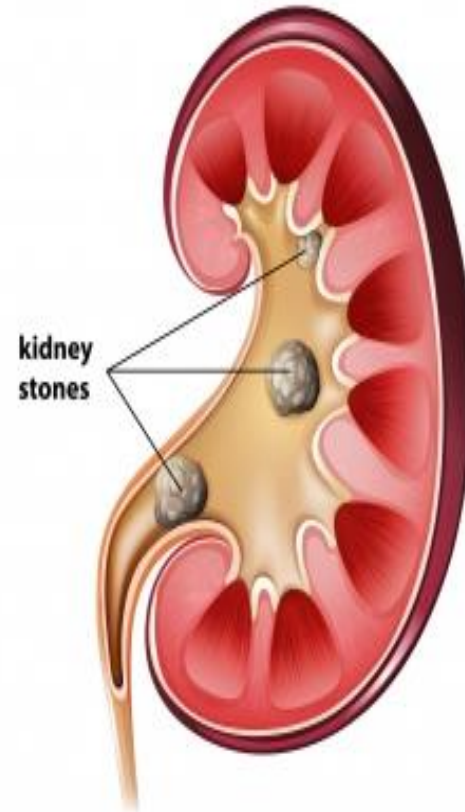
- Family or personal history
- Dehydration
- Certain diets
- Being obese
- Digestive diseases and surgery
- Other medical conditions

# Human Kidney Stones

Healthy Kidney



Kidney with Kidney Stones



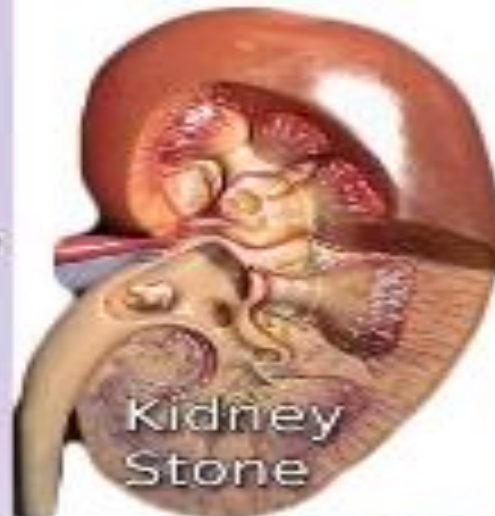
# TYPES OF RENAL STONES



**Calcium Stone**



**Struvite Stone**



**Uric Acid Stone**



**Cystine Stone**



# Types of *Urinary Stones*

## Calcium stones

These are composed of calcium compounds mostly calcium oxalate. Sometimes other minerals such as calcium phosphate may also form stones. Calcium Stones may be caused by high calcium level such as in Hyperparathyroidism. High oxalate level can also cause increased risk for calcium stones



## Uric Acid Stones

Uric Acid Stones are formed due to low urine output, excessive intake of proteins especially red meat, alcohol intake, inflammatory bowel disease, Gout. These form in acidic urine and are not visible in a plain X-RAY



## Struvite

These type of stones are usually associated with urinary infection. They can grow very rapidly forming cast in the urinary tract (Staghorn calculus). Left untreated these may cause chronic infection and permanent kidney damage



## Cystine Stone

These occur due to an inherited defect in amino acid transport, manifests as recurrent stones in young patients



# Dietary Recommendations

- Drink plenty of fluid
- Limit foods with high oxalate content
- Eat enough dietary calcium
- Avoid extra calcium supplements
- Eat a moderate amount of protein
- Avoid high salt intake
- Avoid high doses of vitamin C supplements

# DIET AND KIDNEY STONES



Green tea



Water with lemon, lime or orange slices or juice



Low-fat yogurt, kefir or milk



Broccoli



Bok choy



Kale

## HAVE



Coffee



Bananas




Papaya



Cantalopes




Raw red and yellow pepper




More than 500 mg of calcium, 2000 IU of vitamin D, and 500 mg of vitamin C supplement a day



Salty and sugary foods




Cold cuts and other processed meats




Grapefruit juice


## AVOID




Swiss chard




Spinach




Rhubarb



Potatoes and yams




Beets




Raspberries


### HIGH-OXALATE FOODS




Tofu, miso and other soya foods



Dark chocolate and cocoa powder




Nuts and seeds




Beans



Wheat bran



Buckwheat



Black tea

# THANK YOU

