**NEPHROLITHIASIS (KIDNEY STONE):**

**SOME TERMINOLOGIES:**

**Kidney stone medical term:**

**Nephrolithiasis urinary stone**

**Renal calculus urolithiasis**

**IVP: Intravenous Pyelogram It’s a x-ray that provide image of kidney their location.**

It is a crystalline material which is made by formed in kidney

or it can also formed in urinary tract.

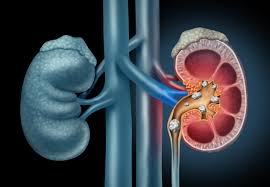
**Causes**:

1: if the body is dehydrated then it is a major cause for kidney

Stone it can also increase the risk for nephrolithiasis

2: Other than this if you’re taking any medication it can also

Cause the risk factor for kidney stone /nephrolithiasis such as

In the condition of gout

**Symptoms:**

1: the main symptoms are pain in kidney area

2: Hematuria is also a symptom of nephrolithiasis.

**Treatment and diagnosis:**

1: It can easily diagnose by ultrasound or IVP

2: It can easily treated by medication that can control pain, and it can also facilitate the passage of urine

3: Other the this a surgical method called lithotripsy is a surgical technique that can remove the stone from kidney

**PATHOPHYSIOLOGY:**

**SOME TERMINOLOGIES:**

**UROTHELIUM: this is a lining of the ureters, urethra. And urinary bladder**

**RANDELLS PLAQUE: it is a microscopic plaque made by calcium deposition in the interstitial tissue also in renal papilla. These plaques are thought to serve as a house for urinary stone formation.**

This word is originated from a Greek word pathos which means suffering basically this term is relate to the study of some changes(abnormal changes ) in body functions that are the causes, disease processes.

**Pathophysiology of nephrolithiasis:**

When there is the occurrence of crystal in urine not in just urine , in supersaturated urine and this can effect urithelium then a house is formed for the growth of stone formation ,and plaque is formed which is named a Rendell’s plaque but not all the stone or deposition of calcium and oxalate occur in that plaque . The kidney stone are formed ant they can destroy the urithelium also And these stone can also deposit the calcium oxalate.

Precipitation of crystal occur from supersaturate urine

Urine

Then it attached to renal tissue

In renal tissue there is infectious pathogen or it can be crystal also.

Attached to renal epithelium

Then it drain into supersaturated urine

A foci is formed that will make stone further

**Recent theory about nephrolithiasis:**

In a recent theory it is said that there is a big role

Of cell surface molecule these molecule lower the

Adhesion force for crystal when adhesion is low

Then it attached to cell and then it can relate to

calcium oxalate also , now you are wondering why we are discussing it the answer is right here so when any urothelial injury occur and stone is remove or repair then more crystal can also form after the removal also , hence the stone prevention can also formed the chance of crystal formation that will lead to stone

**Risk factor of nephrolithiasis:**

**Hypercalcemia:** mostly nephrolithiasis is occur by hypercalcemia as it name indicate the high amount of calcium can weaken your bone and causes kidney disease yes you heard right calcium is not only good for health it can be harmful also as efficiency of anything can lead to harm

**Low fluid intake:** those people who do not drink water or drink less water suffer from nephrolithiasis because hydration is really important if you don’t drink water the urine become supersaturated and it is also difficult to pass out it.

**Deactivation of VDR:**

VDR activity promotes excretion of citrate and citrate hih maount can cause increase in calcium and oxalate. A diet which can boosts citrate excretion may cause stone formation

**High salt intake:** Current guidelines says that limiting total daily sodium intake is2,300 mg.

Try to reduce the amount of salt intake to avoid kidney disease and reduce your daily intake into 1500 mg. because sodium is the main product that can increases the amount of calcium and increase the amount of oxalate also, so avoid high amount of sodium.



**Animal protein intake**: takin high protein meal such

As red meat poultry egg, sea food etc. can also lead

To kidney stone as high protein increases uric acid

Which will causes kidney diseases mainly kidney

stone .if you have kidney stone then try to eat Avery less amount of animal protein remember your health is your first priority .

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[**https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4953772/**](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4953772/)

[**https://www.pulsus.com/scholarly-articles/kidney-stones-mechanism-of-formation-pathogenesis-and-possible-treatments-4896.html**](https://www.pulsus.com/scholarly-articles/kidney-stones-mechanism-of-formation-pathogenesis-and-possible-treatments-4896.html)

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