

STONE ANALYSIS BY FTIR

Photograph

Sample: : Kidney Stone / s

Aggregate weight :

Composition :

Representative stone analysed

Comments

Fourier Transform Infrared Spectroscopy (FTIR) is a technique to determine the composition of a stone with respect to the nature and percentage of compounds present in the stone. FTIR has an advantage over other conventional methods of analysis as the recognition of stone components is more precise and accurate. This technique recognizes small fractions of multiple components as percentages, present in a stone whereas conventional methods recognizes only commonly occurring stone components.

STONE TYPE	PERCENT OF ALL STONES
Calcium oxalate & Phosphate	70
<ul style="list-style-type: none">• Idiopathic hypercalciuria• Hyperuricosuria• No known metabolic abnormality• Hypercalciuria&Hypercalcemia• Hyperoxaluria• Enteric• Primary	50
	20
	15-20
	10
	5
	4.5
	0.5
Magnesium Ammonium Phosphate (Struvite)	15-20

Uric Acid	5-10
<ul style="list-style-type: none"> • Associated with hyperuricemia • Associated with hyperuricosuria • Idiopathic 	
Cystine	1
Others / Unknown	5

DIETARY RECOMMENDATIONS FOR PREVENTION OF RECURRENCE

STONE COMPONENT	ITEMS TO BE AVOIDED	SUGGESTED ITEMS FOR PREVENTION
Oxalate	Tea, Coffee, Colas, Cocoa, Spinach, Beans, Chaulai, Cucumber, Onions, Amla , Chikoo, Black grapes, Citrus fruits, Nuts & Berries	Coconut water, Barley, Pineapple juice & Bananas
Uric Acid	Cauliflower, Pumpkin, Mushrooms, Brinjal, Red meat & Red wine	Lemon peel, Carrots, Horse gram (Kultha dal) & Bitter gourd (Karela)
Cystine	High protein diet	-