

# STONE ANALYSIS IS MORE INFORMATIVE THAN 24 HOURS URINE COLLECTION

OR :

“BECAUSE STONES ARE MORE IMPORTANT THAN URINE”

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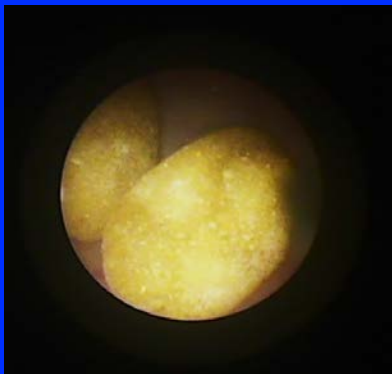
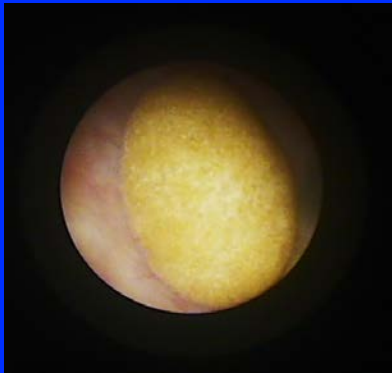


5<sup>th</sup> April 2018, Paris

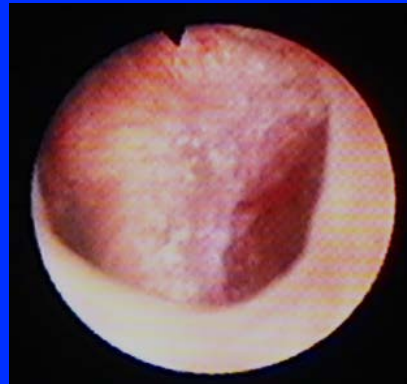
Trans-Atlantic Leaders in ENdourological  
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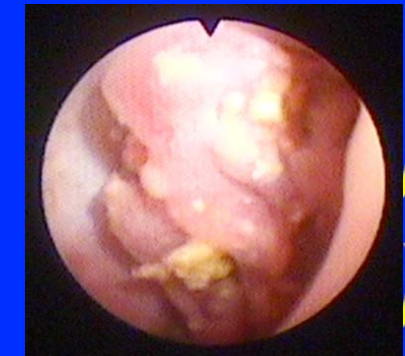
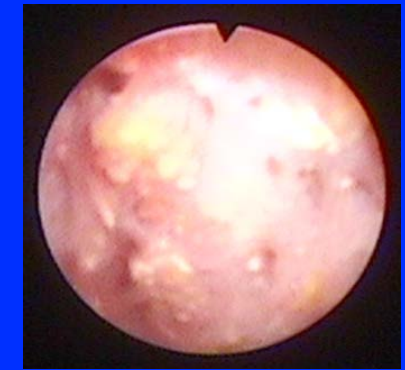
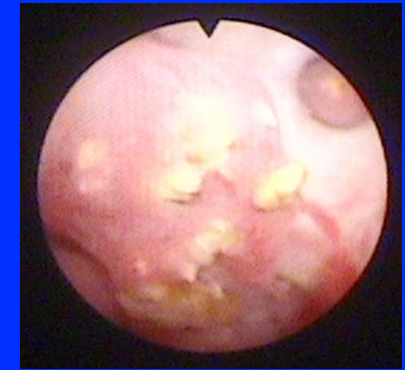
# First rendez-vous with the stone



5<sup>th</sup> April 2018, Paris



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# Stone composition defines recurrence risk

(Historic data of the old GDR-registry)

Stone type	Recurrence rate [%]
Calcium oxalate	30-50
Infection stones (struvite / apatite / ammonium urate)	40-50
Brushite	50-60
Uric acid	50-65
Cystine	60-90

Schneider, Urolithiasis: ethiology and diagnosis 1985



# Where calcium oxalate stones form

## Lessons from micropuncture studies

**Oxalate**

0.05 mmol/l

5.5 mmol/l

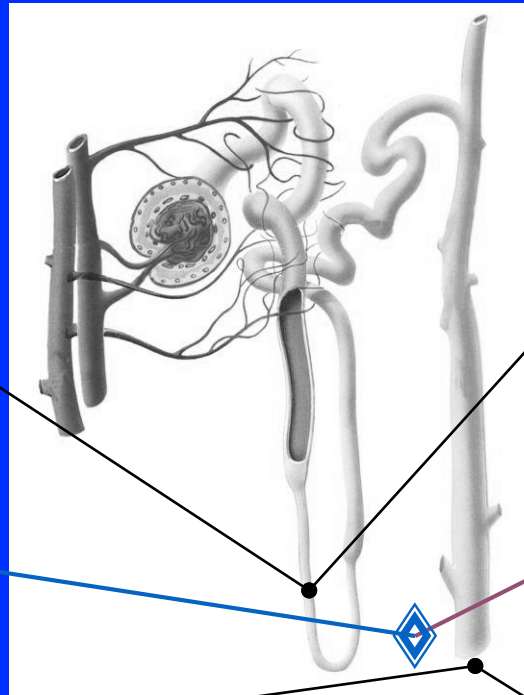
0.3 mmol/l

**Calcium**

2 mmol

20 mmol/l

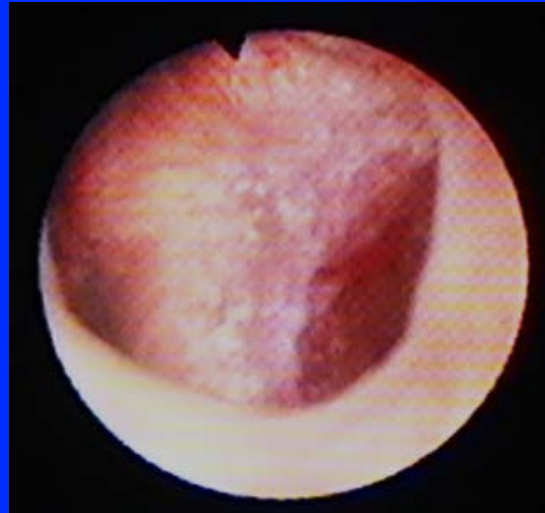
5 mmol/l



Adapted from Hautmann u. Osswald 1982

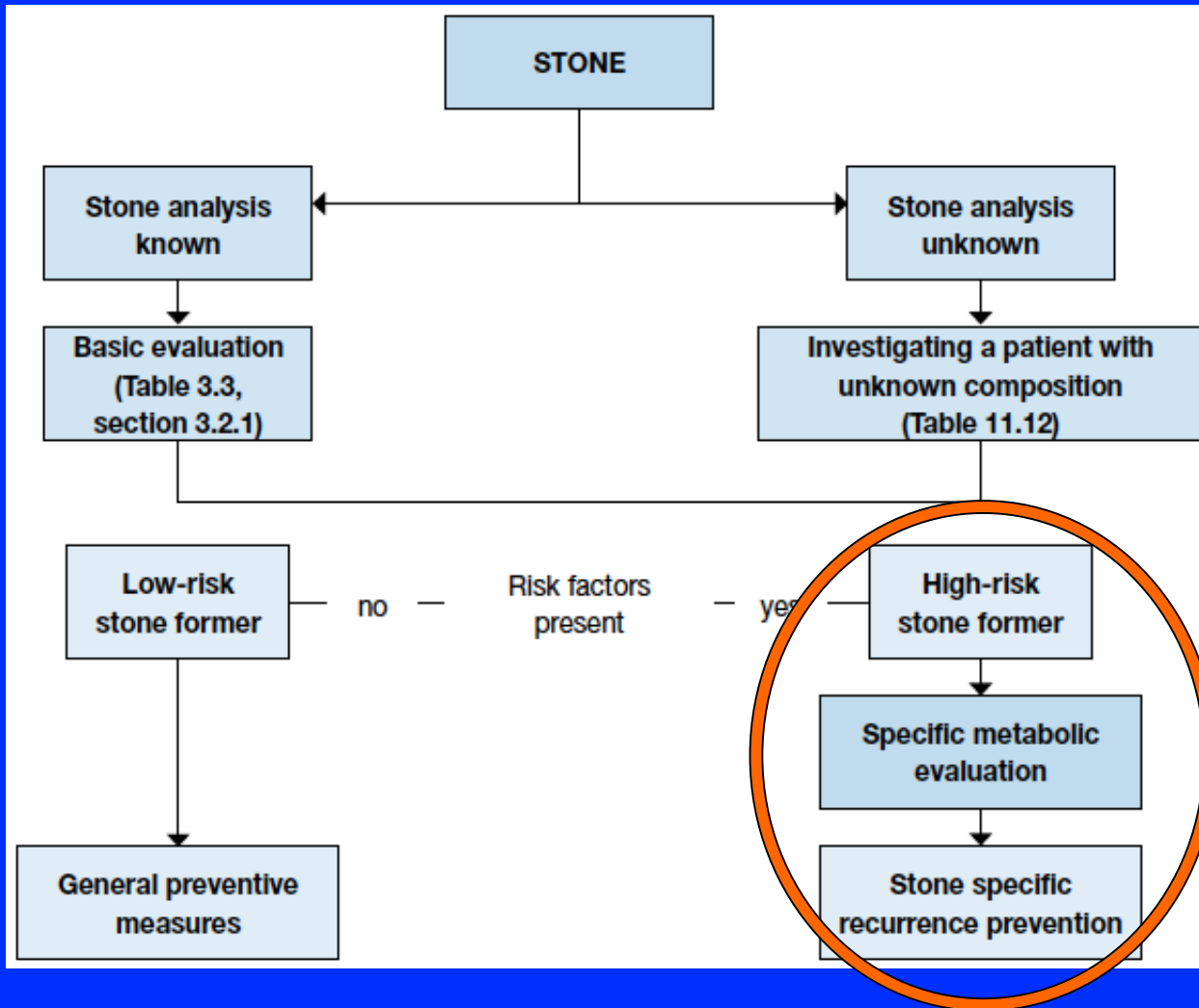


# Note



- Stones form in the nephron and its environment
- Voided urine and its composition differs significantly from intra-renal urine





**25% OF  
ALL STONE  
FORMERS**

EAU-Guideline ed. 2018



# Matching pills and stones

	Calcium oxalate	Calcium phosphate	Uric acid	Struvite	Cystine
<b>Alkaline citrate</b>	X	X	X		X
<b>Allopurinol</b>	X		X		
<b>Antibiotics</b>				X	
<b>Calcium</b>	X				
<b>Chlortalidone</b>	X	X			
<b>Febuxostat</b>	X		X		
<b>Hydrochlorothiazide</b>	X	X			
<b>L-Methionine</b>		X		X	
<b>Magnesium</b>	X				
<b>Sodium bicarbonate</b>	X	X	X		X
<b>Pyridoxine</b>	X				
<b>Tiopronin</b>					X



# Europe or US: who's right?

## EAU Guidelines



Stone composition is the basis for further diagnostic and management decisions

**CORNERSTONE**

## AUA Guidelines



Stone composition may help direct preventive measures

**MAY HELP**





# Stones provide more information than urine – why?

- Stone composition defines recurrence risk
- Stones form in the environment of the nephron
- Stones contain metabolic history of the patient
- Stone composition is the easiest key to recurrence prevention and preventive medication





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Any doubt?

