

Patient:
DOB: Age: Gender:
Patient Identifiers:
Visit Number (FIN):

Client:
Physician:

ARUP Test Code: 2008771
Collection Date:
Received in lab:
Completion Date:

Calculus

Calculated Risk Relative Supersaturation

Calcium Oxalate **7.09**



Calcium Hydrogen Phosphate **2.92**



Uric Acid **1.42**



Calculated risk is derived by a computer program that models the thermodynamics of calculi formation using measured urine components.

Specimen Condition

Analyte	Result	Units	Reference Interval	Effect
Hours Collected	24	h	24	Collection for 24 hours reflects daily excretion.
Total Volume	1150	mL	M 800-1800 F 600-1600	Low urine volume (<1L/24h) promotes calculi formation.
pH	5.59		5.00-7.50	Acidic urine (pH<5.5) promotes precipitation of uric acid. A alkaline urine (pH>7.2) promotes formation of CaHPO4 stones.
Creatinine	1495	mg/d	1000-2500	Excretion provides a measure of completeness of 24h urine collection.

Stone Formation Promoters

Analyte	Result	Units	Reference Interval	Effect
Calcium ¹	354	mg/d	100-250	Hypercalciuria (>200 mg/d) promotes formation of CaOx and CaHPO4 stones.
Oxalate	18	mg/d	16-49	Hyperoxaluria (>40 mg/d) promotes formation of CaOx stones.
Phosphorus	1346 H	mg/d	400-1300	Phosphorus forms insoluble complexes with calcium.
Sodium	170	mmol/d	51-286	Increased sodium promotes formation of CaOx and CaHPO4 stones.
Sulfate	37 H	mmol/d	6-30	Normal to high sulfate promotes precipitation of CaOx and CaHPO4 stones.
Uric Acid	565	mg/d	250-750	Hyperuricosuria (>600 mg/d) promotes formation of uric acid stones.

Stone Formation Inhibitors

Analyte	Result	Units	Reference Interval	Effect
Citric Acid	431	mg/d	320-1240	High citrate inhibits formation of CaOx and CaHPO4 stones.
Magnesium	91	mg/d	12-199	High magnesium inhibits formation of CaOx and CaHPO4 stones.



Patient:
ARUP Accession: 21-308-112183

Supersaturation Profile, Urine

Patient: | Date of Birth: | Gender: | Physician:
Patient Identifiers: | Visit Number (FIN):

Other Components

Analyte	Result	Units	Reference Interval	Effect
Potassium	59	mmol/d	25-125	Potassium forms soluble complexes.
Chloride	148	mmol/d	140-250	Chloride forms soluble complexes.

¹Average calcium diet (about 800 mg/d).

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

Patient Historical Result Summary

No historical data found

Interpretive Information

This test predicts formation of calcium oxalate, calcium hydrogen phosphate (brushite), and uric acid calculi using concentrations of analytes measured in a 24-hour urine specimen. Analyte concentrations are used in a calculation to predict formation of complexes that may exceed their solubility and crystallize as renal calculi. Development of renal calculi is related to increased urine concentrations of stone-forming substances such as calcium, oxalate, urate, cystine, and xanthine. Low urine volume enhances calculus formation. High concentrations of citrate and magnesium in the urine decrease the probability of stone formation.

This profile does not include testing for magnesium ammonium phosphate (struvite) or cystine calculi. If struvite stones associated with bacterial urinary tract infection are suspected, urinalysis and urine culture are recommended. If cystine calculi are suspected (calculi formation in relatively young individuals or family history of cystinuria), order Cystine Quantitative, Urine (ARUP test #0081106).

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Software Reference

Marangella M, Petrarulo M, Daniele PG, Sammartano S. LithoRisk: a software for calculating and visualizing nephrolithiasis risk profiles. *G Ital Nefrol* 2002; 19(6):693-8.



Patient:
ARUP Accession: 21-308-112183