Patient ID	Patient Name		Birth Date	Sex	Age	Weight
R039222	VALIDATIONSOFT, TESTING		03/21/2008	M	18	71 kg
Order Number M225034416	Client Order Number	Ordering Physician UNKNOWN, PROVIDER	Previous Supersaturation Testing: Patient has a single prior 24 hr duration test and 6 prior random tests.			
Account Information CVALIDC Test Validation's MCL 35 characters		Collection Date* 03/25/2026 14:27				

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Overall Calculated Supersaturation Profile By Stone Type

MCR

Stone Type	Patient Supersaturation Delta Gibbs (DG)	Non-Stone Formers**		Deviation from Reference Mean
		Mean	25% - 75% Range	<Less Stone Risk — More Stone Risk>
Calcium Oxalate	0.48	1.89	1.42 - 2.13	-1.11 -0.11 0.89 1.89 2.89 3.89 4.89
Calcium Phosphate (Brushite)	-1.87	0.46	-0.41 - 1.32	-2.54 -1.54 -0.54 0.46 1.46 2.46 3.46
Calcium Phosphate (Hydroxyapatite)	2.07	4.19	3.33 - 5.31	1.19 2.19 3.19 4.19 5.19 6.19 7.19
Uric Acid	-1.40	1.18	-1.10 - 3.41	-1.82 -0.82 0.18 1.18 2.18 3.18 4.18

** Based on normal value study of 48 adult men and 52 adult women

The DG is related to supersaturation. DG is negative for undersaturated solutions, zero for solutions at the solubility product, and positive for saturated solutions. Any value greater than the Reference Mean is considered a risk for the respective crystal type formation.

In general, a higher calculated SS means the risk for forming that type of stone is increased. A positive DG value indicates that the urine is supersaturated for that crystal type.

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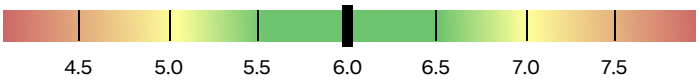
Urine pH MCR

6.0

Reference Value 4.5-8.0

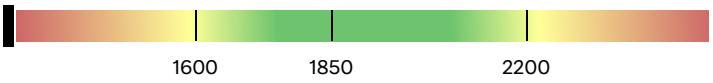


<Favors Uric Acid Stones — Favors Calcium Phosphate Stones>

Creatinine MCR

990 mg/24 h

Reference Value 930-2955



<Likely Under-Collected — Likely Over-Collected>

Normalized Values

"The following report utilizes literature-based reference ranges and clinical significance may vary for each individual patient." MCR

Analyte Ratio	Result	Normal Range*
Calcium/Creatinine	0.09	<0.25 mg/mg
Oxalate/Creatinine	0.02	<0.03 mg/mg
Uric Acid/Creatinine	0.23	<0.60 mg/mg

*Literature-based normal values

Analyte Ratio	Result	Normal Range*
Phosphorus/Creatinine	0.45	<0.75 mg/mg
Magnesium/Creatinine	0.09	>0.05 mg/mg
Citrate/Creatinine [1]	0.98	>0.25 mg/mg

*Literature-based normal values

Metabolic Risk Factors

MCR

Analyte	Result (24 h)*	Non-Stone Formers**		Relative Risk
		Median	25% -75% Range	
Calcium	90 mg	234	159 - 291	159 234 291
Oxalate [1]	0.23 mmol	0.30	0.25 - 0.35	0.25 0.30 0.35
Uric Acid	225 mg	685	565 - 833	565 685 833
Citrate [1]	975 mg	637	492 - 911	492 637 911

* Items are flagged based upon the reference range cut-offs

** Based on normal value study of 48 adult men and 52 adult women

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Dietary Risk Factors

MCR

	Analyte	Result (24 h)*	Non-Stone Formers**		Relative Risk
			Median	25% -75% Range	
	Red = More Stone Risk ... Green = Less Stone Risk				
Fluid Intake	Volume	1500 mL	1307	1119 - 2037	1119 2037
	Osmolality	310 mOsm/kg	693	550 - 815	550 815
Salt Intake	Sodium	188 mmol	187	156 - 247	156 247
	Chloride	188 mmol	189	149 - 225	149 225
Fruits/Veggies	Potassium	38 mmol	72	54 - 88	54 88
	Magnesium	90 mg	140	101 - 157	101 157
Protein Intake	Sulfate [1]	16 mmol	27	23 - 31	23 31
	Urea Nitrogen	7.0 g	11.5	7.8 - 14.3	7.8 14.3
	PCR	69 g	97	73 - 114	73 114
Other	Phosphorus	450 mg	1164	1010 - 1419	1010 1419
	Ammonium [2]	34 mmol	31	24.5 - 42	24.5 42

* Items are flagged based upon the reference range cut-offs

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Overall Calculated Supersaturation Profile By Stone Type — Historical Trends

	Calcium Oxalate	Brushite	Hydroxyapatite	Uric Acid	pH
Range*	1.42 - 2.13	-0.41 - 1.32	3.33 - 5.31	-1.10 - 3.41	5.7 - 6.3
Units	DG	DG	DG	DG	
03/25/2026**	0.48	-1.87	2.07	-1.40	6.0
12/24/2025	-0.43	-3.58	2.79	-7.06	6.8

* Non-Stone Formers 25 - 75% Range for adult Male

** Denotes Current Report Data

Normalized Values — Historical Trends

	Calcium	Oxalate	Uric Acid	Phosphorus	Magnesium	Citrate	Creatinine
Range*	<0.25	<0.03	<0.60	<0.75	>0.05	>0.25	930 - 2955
Units	mg/mg	mg/mg	mg/mg	mg/mg	mg/mg	mg/mg	mg/24h
03/25/2026**	0.09	0.02	0.23	0.45	0.09	0.98	990
12/24/2025	0.16	0.04	0.36	0.16	0.16	2.20	375

* Reference Range, 95% for a 18 year old Male

** Denotes Current Report Data

Metabolic Risk Factors — Historical Trends

	Calcium	Oxalate	Uric Acid	Citrate
Range*	159 - 291	0.25 - 0.35	565 - 833	492 - 911
Units	mg	mmol	mg	mg
03/25/2026**	90	0.23	225	975
12/24/2025	60	0.15	135	825

* Non-Stone Formers 25 - 75% Range for adult Male

** Denotes Current Report Data

Dietary Risk Factors — Historical Trends

	Volume	Osmolality	Sodium	Chloride	Potassium	Magnesium	Sulfate	Urea Nitrogen	PCR	Phosphorus	Ammonium
Range*	1119 - 2037	550 - 815	156 - 247	149 - 225	54 - 88	101 - 157	23 - 31	7.8 - 14.3	73 - 114	1010 - 1419	24.5 - 42
Units	mL	mOsm/kg	mmol	mmol	mmol	mg	mmol	g	g	mg	mmol
03/25/2026**	1500	310	188	188	38	90	16	7.0	69	450	34
12/24/2025	1500	332	188	188	6	60	10	7.7	73	60	28

* Non-Stone Formers 25 - 75% Range for adult Male

** Denotes Current Report Data

Urine Supersaturation Laboratory Trends Over Time

- Lower dietary protein than previously.
- Considerable variation in creatinine excretion, suggesting variable completeness in 24 hr collection.

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General Comments - Adult Male Patients

Metabolic Risk Factors

Urine values that affect stone risk due to combinations of genetic and environmental influences.

Analyte	Non-Stone Formers 25 - 75% Range	Comment
Calcium	159 - 291	Hypercalciuria is a common risk for calcium oxalate and calcium phosphate stones. Most cases are idiopathic (familial/genetic) but hyperparathyroidism and other secondary causes need to be considered.
Oxalate	0.25 - 0.35	Hyperoxaluria is a common risk factor for calcium oxalate kidney stones. Mild hyperoxaluria is usually due to dietary imbalance between high oxalate intake and/or low calcium intake. Moderate increases (0.5 – 1.0 mM) are often due to enteric hyperoxaluria while values greater than 1.0 mM suggest the possibility of primary hyperoxaluria.
Uric Acid	565 - 833	Hyperuricosuria is usually due to a high protein/purine diet and is a risk factor for calcium oxalate stones. Low urinary pH is much more important risk factor for uric acid stones. Dietary intervention and or allopurinol can be considered.
Citrate	492 - 911	Low urinary citrate is a risk factor for calcium oxalate and calcium phosphate kidney stones. High-protein diet, lower gastrointestinal losses, and renal tubular acidosis are potential causes. Can treat with dietary intervention versus oral alkali such as potassium citrate.
pH	5.7 - 6.3	Low urine pH (<5.5) is a risk factor for uric acid stones while high urine pH (>6.5) is a risk factor for calcium phosphate stones.

Normalized Values

Normalizing urine values to urinary creatinine excretion can help to adjust for over or under collection of a 24 hr urine.

Analyte	Reference Range, 95%	Comment
Calcium / Creatinine	<0.25 mg/mg	When high, treat as if 24 hour urinary calcium excretion were high.
Oxalate / Creatinine	<0.03 mg/mg	When high, treat as if 24 hour urinary oxalate excretion were high.
Uric acid / Creatinine	<0.60 mg/mg	When high, treat as if 24 hour urinary uric acid excretion were high.
Phosphorus / Creatinine	<0.75 mg/mg	When high, treat as if 24 hour urinary phosphorus excretion were high.
Magnesium / Creatinine	>0.05 mg/mg	When low, treat as if 24 hour urinary magnesium excretion were low.
Citrate / Creatinine	>0.25 mg/mg	When low, treat as if 24 hour urinary citrate excretion were low.

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Dietary Risk Factors

Urine values that reflect dietary intakes.

Analyte	Non-Stone Formers 25 - 75% Range	Comment
Volume	1119 - 2037	Low values are risk factor for all forms of kidney stones. Target at least 2 L per day although more may be necessary for larger individuals.
Osmolality	550 - 815	Urine osmolality is a better index of fluid intake and kidney stone risk than volume alone. Target urine osmolality less than 400.
Sodium	156 - 247	Urine sodium reflects dietary salt intake. Target less than 100 mEq per day.
Chloride	149 - 225	Urine chloride reflects dietary salt intake. Target less than 100 mEq per day.
Potassium	54 - 88	Very low values (<20 mEq) suggests gastrointestinal losses or chronic potassium deficiency. Higher values are typically seen with higher fruit and vegetable intake or use of potassium supplements.
Magnesium	101 - 157	Very low values (<60 mg) suggests gastrointestinal losses or malnutrition. High values suggest increased dietary magnesium intake via laxatives, magnesium supplements, or specific magnesium rich foods.
Sulfate	23 - 31	Sulfate is found in certain amino acids. Higher values suggest higher protein intake.
Urea Nitrogen	7.8 - 14.3	Urine urea nitrogen is derived from protein metabolism. Higher values suggest higher protein intake.
Protein Catabolic Rate (PCR)	73 - 114	This value is calculated from the urine urea nitrogen. Higher values suggest higher protein intake.
Phosphorus	1010 - 1419	Lower values suggest gastrointestinal losses or malnutrition. Higher values suggest high phosphorus intake. Does not directly alter kidney stone risk.

Calculated Supersaturation

The computer program EQUIL2 combines key urinary concentrations to estimate the urinary supersaturation for common stone types. Delta G stands for the thermodynamic term delta Gibbs. Positive Delta G values imply oversaturation and negative values undersaturation for that crystal type.

Analyte	Non-Stone Formers 25 - 75% Range	Comment
Calcium Oxalate	1.42 - 2.13	Most persons are somewhat oversaturated for calcium oxalate, but stone formers more so. Higher calcium and oxalate, lower volume and citrate all increase calcium oxalate SS.
Calcium Phosphate (Brushite)	-0.41 - 1.32	Although rare in stones, brushite is the most thermodynamically stable form of calcium phosphate. High urine pH (> 6.3) greatly increases brushite SS.
Calcium Phosphate (Hydroxyapatite)	3.33 - 5.31	The most common form of calcium phosphate in stones. High urine pH (> 6.3) greatly increases hydroxyapatite SS.
Uric Acid	-1.10 - 3.41	Low urine pH (<5.5) greatly increases uric acid SS.

Laboratory Notes

1 This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

2 This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

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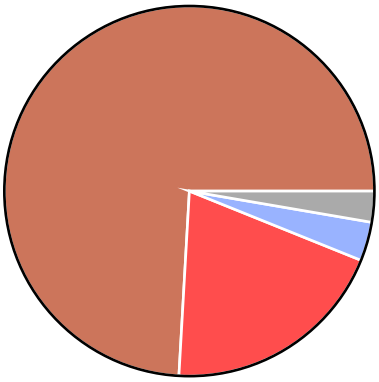
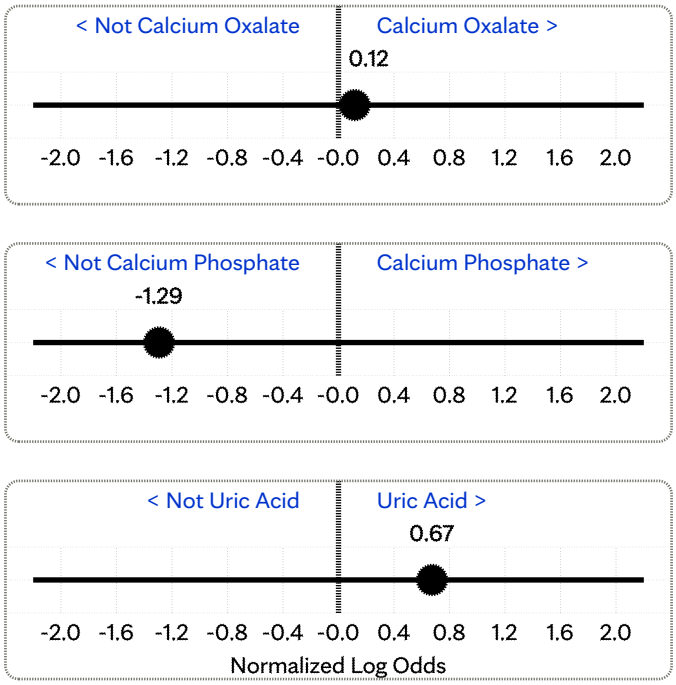
Predicted Kidney Stone Type

The following report combines age, sex, urine chemistry measurements, and supersaturation delta Gibbs values above to estimate the most likely composition of any kidney stone passed or removed in the past 90 days. The prediction is based on an algorithm trained with more than 10,000 paired urine and stone samples.

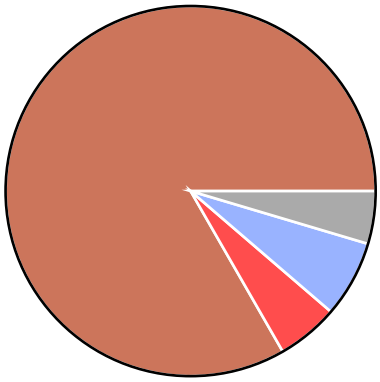
Others Your Age and Sex



Calcium Oxalate	0.74
Calcium Phosphate	0.20
Uric Acid	0.03
Other Stone Type	0.03



Your Likely Stone Type



Calcium Oxalate	0.83
Calcium Phosphate	0.05
Uric Acid	0.07
Other Stone Type	0.05

Understanding Your Results

Others Your Sex and Age

Shows how common each type of kidney stone is in people in the same age group and sex as yourself. For example, most kidney stone patients have a calcium oxalate stone. This is what your prediction would look like without any other information other than taking into account your sex and age group. Age groups are under 45 years old, 45-65, and over 65.

Log Odds Scores

Shows how strongly your urine results match the patterns seen with each type of stone. A higher score means a stronger match. These scores are used to help calculate your personal type of stone in your sex and age group.

Your Likely Stone Type

Takes into account your age, sex, and urine measurements. These numbers show how likely each stone type is for you.

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