

Patient Results Report

PATIENT

Getsay, Tyler

MRN: 06096681

DATE OF BIRTH

09/20/1995

GENDER


M

PHYSICIAN

Kant, Kotagal Shashi

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Current Test Overview

SAMPLE ID	RESULTS TURNAROUND (IN DAYS)	PATIENT COLLECTION DATE	LAB RECEIPT DATE	DATE COMPLETED	SAMPLE BARCODE
S26343086	3	01/22/2021	01/23/2021	01/25/2021	 S26343086

Medical Director's Notes

Laboratory test values flagged with an asterisk (*) within this report refer to the following commentary from our physicians and quality assurance staff. Please feel free to call us at 800 338 4333 with questions you may have regarding this information.

SAMPLE ID COLLECTION DATE

S25921101	09/19/2019	24 hr Creatinine: As of 4/29/2018, the calibrator for urine creatinine has changed. Going forward, urine creatinine values will decrease by 17%. Reference ranges have been updated for Cr24/Kg, Ca24/Cr24, and Cit24/Cr24. Results from the last sample prior to the change in calibrator (collected on 03/14/2018) have been modified to assist in comparing data over time. The original Cr24 value was reported as 1095 and is recalculated as 909; Cr24/Kg was 20.1 and is recalculated as 16.7; and Ca24/Cr24 was 103 and is recalculated as 124.
S25921101	09/19/2019	24 hr Creatinine: Note the excessive variation in creatinine excretion, suggesting a discrepancy in the collection process. The urine creatinine result was verified by repeat analysis.
S23913141	02/10/2017	24 hr Phosphorus: The urine P result was verified by repeat analysis.

John Asplin, MD
Medical Director

Litholink's computer generated comments are based upon the patient's most recent laboratory results without taking into account concurrent use of medication or dietary therapy. They are intended solely as a guide for the treating physician. Litholink does not have a doctor-patient relationship with the individuals for whom tests are ordered, nor does it have access to a complete medical history, which is required for both a definitive diagnosis and treatment plan. Cys 24, Cys Capacity, Sulfate, and Citrate were developed and their performance characteristics determined by Litholink Corporation. It has not been cleared or approved by the US Food and Drug Administration.



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Values larger, bolder and more towards red indicate increasing risk for kidney stone formation.

Summary Stone Risk Factors

SAMPLE ID: **S26343086**PATIENT COLLECTION DATE: **01/22/2021**

ANALYTE	← DECREASED RISK	INCREASING RISK FOR STONE FORMATION →
Urine Volume (liters/day)		0.46 ●
SS CaOx		● 6.36
Urine Calcium (mg/day)	● 68	
Urine Oxalate (mg/day)	● 10	
Urine Citrate (mg/day)		124 ●
SS CaP		● 2.60
24 Hour Urine pH		● 6.519
SS Uric Acid	● 0.45	
Urine Uric Acid (g/day)	● 0.309	

Interpretation Of Laboratory Results

Note that in the following automated interpretation the current sample is compared to the sample collected on 3/14/2018 because the urine creatinine excretion varied between the current sample and the sample collected on 9/19/2019 by an excessive amount.

Urine volume has fallen and is very low (was 1.05 and now is 0.46 L/d). Low urine volume in a stone former should always be corrected if possible. A good clinical goal is 2.5 liters daily. Recheck in 6 weeks and adjust fluid intake as needed.

Urine magnesium has fallen and is below normal (was 83 and now is 37 mg/d). Bowel disease, diuretic use, laxative abuse and eating disorders can produce magnesium depletion and should be considered clinically.

Urine citrate remains low. The patient reports that potassium citrate has been prescribed. Although potassium citrate is prescribed, the expected increase in urine potassium (average was 26 mmol/d and now is 19 mmol/d) and fall in urine ammonia (average was 16 mmol/d and now is 18 mmol/d) have not occurred. Confirm use and recheck. If being taken, increase the dose of potassium citrate. Monitor serum potassium if renal function impaired and repeat urine studies in 6 weeks. SS CaP is high. Even though urine citrate is low, potassium citrate may not be ideal unless SS CaP can be reduced by increasing urine volume or reducing urine calcium excretion, and stones contain no more than 15% calcium phosphate. Hypokalemia, urinary infection, bowel disease, and reduced kidney function are all possible causes of low urine citrate. If needed, hypokalemia can be repaired using potassium chloride to avoid further increase of urine pH. High protein intake is not a likely cause of the low urine citrate (PCR = 0.6 g/kg/d, sulfate = 12 meq/d).

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Urine pH remains very elevated. Risk of calcium phosphate stones is elevated. The patient reports that alkali has been prescribed, this may have increased urine pH and calcium phosphate stone risk. Consider adjusting dosage if alkali is indeed being taken. Recheck in 6 weeks if dose is adjusted. Urine volume is low and increases calcium phosphate stone risk. Increased urine volume is clinically advisable.

Calcium oxalate stone risk (SS CaOx) has risen moderately and is borderline high (was 4.10 and now is 6.36). In general, urine calcium, oxalate, citrate, and volume are the main factors responsible. The graphic display indicates which are most deviated from normal. Management suggestions are as noted above.

Calcium phosphate stone risk (SS CaP) is persistently high. In general, urine calcium, pH, citrate, and volume are the main factors responsible. The graphic display indicates which are most deviated from normal. Management suggestions are as noted above.



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Values larger, bolder and more towards red indicate increasing risk for kidney stone formation. See reverse for further details.

Stone Risk Factors / Cystine Screening: Negative (02/13/2017)

DATE	SAMPLE ID	Vol 24	SS CaOx	Ca 24	Ox 24	Cit 24	SS CaP	pH	SS UA	UA 24
01/22/21	S26343086	0.46	6.36	68	10	124	2.60	6.519	0.45	0.309
09/19/19	S25921101	0.66	10.01	91	25	129	2.95	7.435	0.04	0.340
03/14/18	S25510641	1.05	4.10	112	17	127	2.91	7.135	0.05	0.309
09/07/17	S25361310	0.77	9.03	113	23	89	3.59	6.709	0.21	0.354
02/10/17	S23913141	0.89	8.73	185	15	99	3.11	6.989	0.09	0.312
REFERENCE RANGE		0.5 - 4L	6 - 10	male <250 female <200	20 - 40	male >450 female >550	0.5 - 2	5.8 - 6.2	0 - 1	male <0.800 female <0.750

Dietary Factors

DATE	SAMPLE ID	Na 24	K 24	Mg 24	P 24	Nh4 24	Cl 24	Sul 24	UUN 24	PCR
01/22/21	S26343086	79	19	37	0.318	18	74	12	3.81	0.6
09/19/19	S25921101	107	24	64	0.335	11	85	23	5.04	0.8
03/14/18	S25510641	142	35	83	0.654	15	121	22	5.08	0.8
09/07/17	S25361310	94	32	64	0.591	24	94	18	5.04	0.8
02/10/17	S23913141	68	14	85	0.220*	14	73	7	3.56	0.6
REFERENCE RANGE		50 - 150	20 - 100	30 - 120	0.6 - 1.2	15 - 60	70 - 250	20 - 80	6 - 14	0.8 - 1.4

Normalized Values

DATE	SAMPLE ID	WEIGHT	Cr 24	Cr 24/Kg	Ca 24/Kg	Ca 24/Cr 24
01/22/21	S26343086	52.2	982	18.8	1.3	69
09/19/19	S25921101	49.9	727	14.6	1.8	125
03/14/18	S25510641	54.4	1095	20.1	2.1	103
09/07/17	S25361310	54.4	1316	24.2	2.1	86

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Normalized Values

DATE	SAMPLE ID	WEIGHT	Cr 24	Cr 24/Kg	Ca 24/Kg	Ca 24/Cr 24
02/10/17	S23913141	54.4	1185	21.8	3.4	156
REFERENCE RANGE			male 11.9-24.4 female 8.7-20.3		<4	male 34-196 female 51-262

The calibrator for urine creatinine changed on 4/29/2018. Shading and bolding have been removed from Cr24, Cr24/Kg, and Ca24/Cr24 on specimens collected prior to 4/29/2018. Going forward, urine creatinine values will decrease by 17%. All reference ranges are those in effect at the time of printing this report.



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Clinical Report

The clinical information shown below was obtained directly from your patient during our telephone interview, and, where possible, from medical records forwarded from your office.

Dietary History

START


STOP

Medication History

DRUG (DOSE/DAY)


START

STOP

 Potassium Citrate

Related Diseases

DIAGNOSED

 = Before Treatment = After Treatment

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Stone Risk Factors / Cystine Screening

ABBR.	ANALYTE	REFERENCE RANGE	COMMENTS
Vol 24	Urine Volume	0.5 - 4	L/d; Raise vol to at least 2L .
SS CaOx	Supersaturation CaOx	6 - 10	Raise urine vol and cit, lower ox and ca.
Ca 24	Urine Calcium	male <250, female <200	idiopathic hypercalciuria, consider hydrochlorothiazide 25 mg bid or chlorthalidone 12.5 - 25 mg qam, urine Na <100.
Ox 24	Urine Oxalate	20 - 40	usually dietary; if enteric, consider cholestyramine, oral calcium 1-2 gm with meals; if >80, may be primary hyperoxaluria.
Cit 24	Urine Citrate	male >450, female >550	consider K citrate 20 - 30 mEq BID; if from RTA (urine pH > 6.5) also use K citrate.
SS CaP	Supersaturation CaP	0.5 - 2	Urine usually pH > 6.5, idiopathic hypercalciuria common.
pH	24 Hour Urine pH	5.8 - 6.2	<5.8 consider K or Na citrate 25-30 mEq BID; 6.5, RTA if citrate is low; >8, urea splitting infection.
SS UA	Supersaturation Uric Acid	0 - 1	Urine pH <6, creates UA stones. Treated with alkali.
UA 24	Urine Uric Acid	male <0.800, female <0.750;	g/d; dietary; if stones are severe and low protein diet fails try allopurinol 200 mg/d.

** Cystine Screening: positive result may be seen in patients with homozygous cystinuria and cystine stone disease, some individuals heterozygous for cystinuria without cystine stone disease, or in patients taking medications such as captopril or penicillamine.

Dietary Factors

ABBR.	ANALYTE	REFERENCE RANGE	COMMENTS
Na 24	Urine Sodium	mmol/d; 50 - 150	When high raises urine Ca, and K loss from thiazide; ideal is <100.
K 24	Urine Potassium	mmol/d; 20 - 100	<20, consider bowel disease, diuretics, laxatives.
Mg 24	Urine Magnesium	mg/d; 30 - 120	Low with poor nutrition, some laxatives, malabsorption syndrome.
P 24	Urine Phosphorus	g/d; 0.6 - 1.2	Low in bowel disease, malnutrition, high with large food intake.
Nh4 24	Urine Ammonium	mmol/d; 15 - 60	High + pH>7, urea splitting infection; low + pH <5.5, renal disease, UA stones, Gout.
Cl 24	Urine Chloride	mmol/d; 70 - 250	Varies with sodium and potassium intake.
Sul 24	Urine Sulfate	meq/d; 20 - 80	When high shows high protein diet.
UUN 24	Urine Urea Nitrogen	g/d; 6 - 14	This measures urea production from diet protein.
PCR	Protein Catabolic Rate	g/kg/d; 0.8 - 1.4	This measure protein intake per kg body weight.

Normalized Urine Values

ABBR.	ANALYTE	COMMENTS
Weight	Body Weight in Kg	Obtained from treating physician or patient.
Cr 24	Urine Creatinine	mg/d; varies with body weight; check for day to day consistency of urine collection.
Cr 24/Kg	Creatinine/Kg	mg/kg/d; male 11.9 - 24.4, female 8.7 - 20.3; low in obesity or incomplete urine collection, high in people with large muscle mass or over-collection of urine.
Ca 24/Kg	Calcium/Kg	mg/kg/d; <4.00; when high, treated as if Ca 24 mg/d were high.
Ca 24/Cr 24	Calcium/Creatinine	mg/g; male 34-196, female 51-262; when high, treated as if Ca 24 mg/d were high.