

Supersaturation Profile, 24 Hour, Urine

Test ID: SUP24

Useful for:

Diagnosis and management of patients with renal lithiasis:

-Predicting the likely composition of the stone, in patients who have a radiopaque stone, for whom stone analysis is not available. This may help in designing a treatment program.

Aiding in identification of specific risk factors for stones using a 24-hour urine collection

Monitoring the effectiveness of therapy by confirming that the crystallization potential has indeed decreased

Evaluating kidney excretion of acid and urine pH

Estimating a patient's protein intake

Profile Information:

Test ID	Reporting Name	Available Separately	Always Performed
SSINT	Supersaturation, 24 HR, U 1	No	Yes
NAUT	Sodium, 24 HR, U	Yes (order NAU)	Yes
KUT	Potassium, 24 HR, U	Yes (order KUR)	Yes
CALUT	Calcium, 24 HR, U	Yes (order CALU)	Yes
MAGT	Magnesium, 24 HR, U	Yes (order MAGU)	Yes
CLUT	Chloride, 24 HR, U	Yes (order CLU)	Yes
POUT	Phosphorus, 24 HR, U	Yes (order POU)	Yes
SULFT	Sulfate, 24 HR, U	Yes (order SULFU)	Yes
CITT	Citrate Excretion, 24 HR, U	Yes (order CITR)	Yes
OXUT	Oxalate, 24 HR, U	Yes (order OXU)	Yes
UPHT	pH, 24 HR, U	Yes (order PHU_)	Yes
URICT	Uric Acid, 24 HR, U	Yes (order URCU)	Yes
CTUT	Creatinine, 24 HR, U	Yes (order URCU)	Yes
OSMUT	Osmolality, 24 HR, U	Yes (order UOSMU)	Yes
AMMT	Ammonium, 24 HR, U	Yes (order AMMO)	Yes
UNT	Urea Nitrogen, 24 HR, U	No	Yes
PCRUT	Protein Catabolic Rate, 24 HR, U	No	Yes
DEMO9	Patient Demographics	No	Yes

Methods:

AMMT, CITT, OXUT: Enzymatic

OSMUT: Freezing Point Depression

SULFT: High-Performance Ion Chromatography (HPIC)

CALUT, POUT: Photometric

MAGT: Colorimetric Endpoint Assay

UPHT: pH Meter

NAUT, KUT, CLUT: Potentiometric, Indirect Ion-Selective Electrode (ISE)

CTUT: Enzymatic Colorimetric Assay

URICT: Uricase

UNT: Kinetic UV Assay

PCRUT, SSINT: Calculation

Reference Values:

SUPERSATURATION REFERENCE MEANS (Delta G: DG)

Calcium oxalate: 1.77 DG

Brushite: 0.21 DG

Hydroxyapatite: 3.96 DG

Uric acid: 1.04 DG

INDIVIDUAL URINE ANALYTES**OSMOLALITY, 24 HOUR, URINE**

0-11 months: 50-750 mOsm/kg

> or =12 months: 150-1,150 mOsm/kg

pH, 24 HOUR, URINE

4.5-8.0

SODIUM, 24 HOUR, URINE

> or =18 years: 22-328 mmol/24 hours

Reference values have not been established for patients who are less than 18 years of age.

POTASSIUM, 24 HOUR, URINE

> or =18 years: 16-105 mmol/24 hours

Reference values have not been established for patients who are less than 18 years of age.

CALCIUM, 24 HOUR, URINE

Males: <250 mg/24 hours

Females: <200 mg/24 hours

Reference values have not been established for patients who are less than 18 years of age.

MAGNESIUM, 24 HOUR, URINE

51-269 mg/24 hours

Reference values have not been established for patients who are younger than 18 years of age.

CHLORIDE, 24 HOUR, URINE

> or =18 years: 34-286 mmol/24 hours

Reference values have not been established for patients who are younger than 18 years of age.

PHOSPHORUS, 24 HOUR, URINE

> or =18 years: 226-1,797 mg/24hours

Reference values have not been established for patients who are younger than 18 years of age.

SULFATE, 24 HOUR, URINE

7-47 mmol/24 hours

CITRATE EXCRETION, 24 HOUR, URINE (mg/24 hours)

0-19 years: Not established	34 years: 250-1,191	49 years: 356-1,191
20 years: 150-1,191	35 years: 257-1,191	50 years: 363-1,191
21 years: 157-1,191	36 years: 264-1,191	51 years: 370-1,191
22 years: 164-1,191	37 years: 271-1,191	52 years: 378-1,191
23 years: 171-1,191	38 years: 278-1,191	53 years: 385-1,191
24 years: 178-1,191	39 years: 285-1,191	54 years: 392-1,191
25 years: 186-1,191	40 years: 292-1,191	55 years: 399-1,191
26 years: 193-1,191	41 years: 299-1,191	56 years: 406-1,191
27 years: 200-1,191	42 years: 306-1,191	57 years: 413-1,191
28 years: 207-1,191	43 years: 314-1,191	58 years: 420-1,191
29 years: 214-1,191	44 years: 321-1,191	59 years: 427-1,191
30 years: 221-1,191	45 years: 328-1,191	60 years: 434-1,191
31 years: 228-1,191	46 years: 335-1,191	>60 years: Not established
32 years: 235-1,191	47 years: 342-1,191	
33 years: 242-1,191	48 years: 349-1,191	

OXALATE, 24 HOUR, URINE

0.11-0.46 mmol/24 hours

9.7-40.5 mg/24 hours

Reference values have not been established for patients who are younger than 16 years of age.

URIC ACID, 24 HOUR, URINE

Males: > or =18 years: 200-1,000 mg/24 hours

Females: > or =18 years: 250-750 mg/24 hours

Reference values have not been established for patients who are younger than 18 years of age.

CREATININE, 24 HOUR, URINE

Males: > or =18 years: 930-2,955 mg/24 hours

Females: > or =18 years: 603-1,783 mg/24 hours

Reference values have not been established for patients who are younger than 18 years of age.

AMMONIUM, 24 HOUR, URINE

15-56 mmol/24 hour

Reference values have not been established for patients who are younger than 18 years or older than 77 years of age.

UREA NITROGEN, 24 HOUR, URINE

> or =18 years: 7-42 g/24h

Reference values have not been established for patients who are younger than 18 years of age.

PROTEIN CATABOLIC RATE, 24 HOUR, URINE

56-125 g/24 hours

Specimen Requirements:

Supplies:	Diazolidinyl Urea (Germall) 5.0 mL (T822)
Collection Container:	24-hour graduated urine container with no metal cap or glued insert
Submission Container:	Plastic, 60-mL urine bottle
Specimen Volume:	35 mL
Collection Instructions:	<ol style="list-style-type: none">1. Collect urine for 24 hours.2. Add 5 mL of diazolidinyl urea as preservative at start of collection or refrigerate specimen during and after collection.3. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH above 8 indicate bacterial contamination, and testing will be canceled. Do not attempt to adjust pH as it will adversely affect results.

Minimum Volume: 25 mL

Specimen Stability Information:

Specimen Type	Temperature	Time
Urine	Refrigerated	14 days

Cautions:

Urine is often supersaturated with respect to the common crystalline constituents of stones, even in non-stone formers.

Individual interpretation of the supersaturation values in light of the clinical situation is critical. In particular, treatment may reduce the supersaturation with respect to one crystal type but increase the supersaturation with respect to another. Therefore, the specific goals of treatment must be considered when interpreting the test results.

CPT Code Information:

82340-Calcium	83935-Osmolality	84300-Sodium
82436-Chloride	83945-Oxalate	84392-Sulfate
82507-Citrate excretion	83986-pH	84560-Uric acid
82570-Creatinine	84105-Phosphorus	82140-Ammonium
83735-Magnesium	84133-Potassium	84540-Urea Nitrogen

Day(s) Performed: Monday through Friday **Report Available:** 2 to 5 days

Questions

Contact Nancy Benson, Laboratory Technologist Resource Coordinator at 800-533-1710.