

Cystine (Quantitative, Urine)

Synonyms

Urinary cysteine, quantitative cystinuria, cysteine, stone screen

Clinical Indication

Cystinuria is an autosomal recessive defect in reabsorptive transport of cystine and the dibasic amino acids ornithine, arginine, and lysine from the luminal fluid of the renal proximal tubule and small intestine. The only phenotypic manifestation of cystinuria is cystine urolithiasis, which often recurs throughout a patient's lifetime.

Confirmation/quantification of a positive cysteine screening test or monitoring patients known to have cystinuria. Quantitative testing is important to determine optimal daily fluid intake goals. Siblings of patients with proven cystinuria should be screened for elevated urinary cysteine excretion.

Part of Profile / See Also

24 hour urine stone screen. Includes ornithine, arginine and lysine +/- pH if part of 24 hour urine stone screen.

Request Form

Combined Pathology manual Blood form or ICE request

Availability / Frequency of Analysis

Referral test: Analysed by Clinical Biochemistry, UCL Hospital, London, if specific criteria met. [8169](#)

Turnaround Time

2-3 weeks

Patient Preparation

Sample Requirements

Specimen Type

24hr urine collection

Volume

20ml from the complete 24 hour collection

Container

24hr urine container (plain)

Reference Range & Units

Cystine:creatinine ratio: 3 - 12 mmol/mol creat.
 Ornithine:creatinine ratio: 0.5 - 2.0 mmol/mol creat.
 Lysine:creatinine ratio: 6 - 41 mmol/mol creat.
 Arginine:creatinine ratio: 0 - 3.7 mmol/mol creat.

Interferences

Interpretation & Clinical

Decision Value (if applicable)

Targets for monitoring patients with cystinuria:

- Urine pH greater than 7.5
- 24hr volume greater than 3 litres
- Cystine concentration less than 1.0 mmol/L (EMU)

References

Test code

24CY

Lab Handling

If 24hr urine collection mix thoroughly before taking two aliquots. Measure pH immediately and record this along with the total volume. Store in referrals rack at 4°C (store spare in tracking racks). Sent daily by courier to UCLH.

