Urinary Oxalate (24hr)

Synonyms	
Clinical Indication	The primary hyperoxalurias (PH) are a group of rare inherited disorders of endogenous oxalate overproduction. Primary hyperoxaluria type 1 is the most common of the three types however this is still a rare disorder. The excess oxalate that is produced in PH is primarily excreted by the kidneys and this leads to urinary calcium oxalate supersaturation causing crystal aggregation, urolithiasis and/or nephrocalcinosis. Calcium oxalate crystals are also deposited within the renal interstitium and renal tubule cells. If persistent, this can lead to end stage renal disease. Performed as part of a metabolic screen in patients with renal calculi or investigation of PH.
Part of Profile / See Also	Part of a renal stone screen
Request Form	Combined Pathology manual Blood form or ICE request
Availability / Frequency of Analysis	Referred Test: Analysed by Clinical Biochemistry, UCLH 8169, if specific criteria met.
Turnaround Time	2 weeks
Patient Preparation	None
Sample Requirements	
Specimen Type	24 hour urine collection into acid preservative
Volume	24 hour urine
Container	Acidified 24 hour urine container
Reference Range & Units	Oxalate excretion: <460 umol/24 hours

Age Range	Urine oxalate:creatinine ratio
Birth - 6 month	Less than 291 (umol/mmol)
6 - 23 months	Less than 220
2 - 4 years	Less than 143
5 - 11 years (Male)	Less than 76
12 - 17 years (Female)	Less than 44
18 years and older (Female)	Less than 45
18 years and older (Male)	Less than 33

Reference: Referral laboratory (UCLH)

Interferences

Elevated urinary oxalate excretion can be seen in patients with excess intake of oxalate (dietary hyperoxaluria) or in patients with increased intestinal oxalate absorption due to small bowel diseases. However these levels are not usually as high as those seen in PH. Falsely low urinary oxalate measurements may be seen in patients with renal insufficiency and progressive disease. In this setting, plasma oxalate can be used to support the diagnosis.

Interpretation & Clinical Decision Value (if applicable)	A clinical diagnosis relies on metabolic screening that demonstrates a markedly increased urinary excretion of oxalate (greater than 1 mmol/1.73m2 per day). Some patients excrete as much as 1.5 – 3 mmol/1.73m2 per day. The efficacy of treatment in PH is dependent on early diagnosis. In particular, the initiation of medical management as soon as possible prolongs renal function, which delays end-stage renal disease (ESRD) and potentially minimizes nonrenal sequelae. Large fluid intake resulting in a high urinary output (greater than 3L/day per 1.73m2) is the most effective therapy to reduce tubular fluid oxalate concentration and reduce deposition.
References	Primary Hyperoxaluria – Up to Date – Searched Jan 2019 UCLH – Diagnostic Service for the Primary Hyperoxalurias
Test code	24OX
Lab Handling	Record the 24hr volume, aliquot into two universal containers and store one in the referrals rack at 4°C and the other in the urine archiving racks at 4C. Sent daily by courier to UCLH.

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8169
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