

Urinary Metanephrines

Synonyms

Adrenaline, noradrenaline, epinephrine, norepinephrine, metadrenalines

Clinical Indication

Investigation of suspected phaeochromocytoma.

A phaeochromocytoma is a tumour arising from adrenomedullary chromaffin cells that commonly produces one or more catecholamines: epinephrine, norepinephrine, and dopamine. Rarely, these tumours are biochemically silent. Phaeochromocytoma should be suspected in patients who have one or more of the following: the classic triad of headache, sweating and tachycardia (whether or not they have hypertension); hyperadrenergic spells; young onset HTN; family history of phaeochromocytoma; pressor response during anaesthetic; idiopathic dilated cardiomyopathy or Carney triad.

The Endocrine Society Clinical Practice Guideline recommends that initial biochemical testing for phaeochromocytoma should include measurement of metanephrines. 24 hour urinary metanephrines are the test of choice at Basildon and Southend Hospitals. There is compelling evidence that metanephrine analysis has significantly more diagnostic sensitivity than measurement of catecholamines.

Part of Profile / See Also

Request Form

Combined Pathology manual Blood form or ICE request

Availability / Frequency of Analysis

Referred Test: Analysed by Biochemistry, King's College Hospital (Synnovis 9067), if clinically indicated.

Turnaround Time

Up to 3 weeks

Patient Preparation

None required

Sample Requirements

Specimen Type

24 hour urine collection into acid preservative (plain 24 hour urine collection is also acceptable)

Volume

24 hour collection

Container

[Plain or Acidified](#) 24 hour urine container

Reference Range & Units

Hypertension population:

Urine normetanephrine <4.4 umol/24 hour

Urine metanephrine <5.0 umol/24 hour

Healthy individuals:

Urine normetanephrine <1.95 umol/24 hour

Urine metanephrine <1.52 umol/24 hour

Interferences

Drug	Urine normetanephrine	Urine metanephrine

Paracetamol	++	-
B blockers	++	++
Alpha-2 adrenergic agonists	++	-
Buspirone	-	++
Monoamine oxidase inhibitors	++	++
Sympathomimetics	+	+
Cocaine	++	+
Sulphasalazine	++	-
Dopaminergic drugs	++	+
Xanthine	?	?
Tricyclic antidepressants	++	++
SSRIs	++	-
Calcium channel blockers	++	++

++ clear increase, + mild increase, - no increase, ? no data exists

Please note this is not an exhaustive list.

Interpretation & Clinical Decision Value (if applicable)

References

Jacques W.M. et al Pheochromocytoma and Paraganglioma: An Endocrine Society Clinical Practice Guideline 2014 *The Journal of Clinical Endocrinology & Metabolism* **99**:6 1915-1942

<https://www.synnovis.co.uk/our-tests/urine-metanephines>

Test code

UMET

Lab Handling

Record the 24hr volume and the pH, 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 King's College Hospital.

