### BIOCHEMISTRY

**CREATININE** Urine Spot

<table>
<thead>
<tr>
<th>Result</th>
<th>Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0</td>
<td></td>
<td>mmol/L</td>
</tr>
</tbody>
</table>

### ENDOCRINOLOGY URINE

#### URINE, 24 HOUR

- **Cortisol, Urine**: 141 ug/24h
- **Total (OH) Corticosteroids**: 23.6 umol/24h
- **Aldosterone**: 13.2 ug/24h
- **DHEA, Urine**: 0.8 umol/24h
- **17-Ketosteroids**: 17.6 umol/24h
- **17-Ketosteroids/Tot OHcorticoids**: 0.75 L
- **Pregnanetriol (Pregnenolone)**: 4.3 umol/24h

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(*) Result outside normal reference range  
(H) Result is above upper limit of reference range  
(L) Result is below lower limit of reference range
24 hr Urine Adrenals Comment

ELEVATED CORTISOL LEVEL
Endocrine Effects: high-Hydrocortisone, thyroid, estrogens, progesterone, pregnenolone; low-melatonin.
Drug Effects: glucocorticoids.
Dietary Effects: High protein, high fat.
High levels are seen in Cushing's syndrome or with prolonged excessive exogenous glucocorticoid therapy.
Consider reducing therapy especially if total 17-Hydroxycorticoids are high.
An important note is that during adequate cortisol therapy, cortisol levels may be slightly higher than the reference range and this is acceptable if the 17-Hydroxycorticoids are within normal limits.
Other factors causing high urinary cortisol levels are excess stress, prolonged exercise bouts and melatonin deficiency.
In women, pregnancy can elevate urinary cortisol levels. Estrogen may normalize cortisol levels.

Excess levels of thyroid hormones increase the release of ACTH and therefore increase cortisol.

ELEVATED 17-HYDROXYCORTICOIDS:
Elevated 17-Hydroxycorticoid levels are attributable to excess cortisol levels and prolonged periods of excessive stress. Adrenal androgen deficiency causes high levels (confirm with urinary DHEA levels).
Excess levels of thyroid hormones also lead to high levels of 17-Hydroxycorticoids. It is important to rule out Cushing’s disease & syndrome and pituitary & adrenal tumors.
Elevated 17-Hydroxycorticoid levels may be an indicator of Adrenal Catabolic Syndrome when there are also low levels of urinary 17-Ketosteroids.
A diet high in protein, high in fat and excess calories can also elevate 17-Hydroxycorticoids.

17-keto/11-OHCorticoid Ratio <1
Excess levels of glucocorticoids are referred to as Adrenal Catabolic Syndrome, which is indicative of too much "wear and tear" and not enough "rest and repair". Use of adrenal androgen therapy or reducing cortisol therapy should be considered. Other contributing factors to a sub-optimal ratio are excess levels of stress and/or exercise and a lack of rest and recovery.

PREGNANETRIOL - ELEVATED.
Endocrine Influences: high-progesterone, pregnenolone.
Drug Influences: Penicillin.
Excess levels of 17-hydroxyprogesterone from excessive levels of progesterone therapy contribute to high urinary levels of pregnanetriol.
Alternatively, a 21-hydroxylase block or deficiency will also increase urinary pregnanetriol levels.

Supplementary IM Comments

ELEVATED CORTISOL LEVEL:
The Cortisol is elevated, and is suggestive of adrenal stress. Consider supplementing with phosphatidyl serine to lower cortisol. Supplement with Melatonin to lower nocturnal cortisol levels. Chronically elevated cortisol can cause a decrease in catecholamines and decrease the neuroendocrine hormones dopamine, noradrenaline and adrenaline. If mood disorders are noted, consider checking urine neurotransmitter metabolites.

DHEA is within range.
<table>
<thead>
<tr>
<th>Sample Test Name</th>
<th>UCR,CortU,UAdo,UDHEA,U17KSter,U17K/TOHC,U17K/TOTOCort</th>
</tr>
</thead>
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<td>Sex</td>
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<tr>
<td>Date Collected</td>
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<tr>
<td>111 TEST ROAD TEST SUBURB</td>
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</table>

**Test Patient**

**Test Physician**

Sample Test Name: UCR, CortU, UAdo, UDHEA, U17KSter, U17K/TOHC, U17K/TOTOCort

Sex: F

Date Collected: 00-00-0000

111 TEST ROAD TEST SUBURB

LAB ID: 0000000000

UR#: 0000000

P: 1300 688 522

E: info@nutripath.com.au

A: PO Box 442 Ashburton VIC 3142

DR JOHN DOE

111 CLINIC STREET

CLINIC SUBURB VIC 3000

Tests ordered: UCR, CortU, UAdo, UDHEA, U17KSter, U17K/TOHC, U17K/TOTOCort

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Final Report

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