endolab christchurch hospital

0800 ENDO LAB (36 36 52)
endolab@cdhb.health.nz

# GUIDE TO ENDOCRINE TESTING IN GENERAL PRACTICE

| Presenting Problem | When to Act (guidelines only) | Specific Endocrine Testing or "Screening Test" |
|---|---|---|
| Delayed puberty. | Small testes (<4mL) in boys 14y or older.<br>No breast development in girls 14y or older.<br>No menses in girls 16y or older. | Bone age, FT4, plasma LH/FSH, T/SHBG in boys. Consider plasma prolactin. |
| Hirsutism or virilising features. | (Severity often decided by patient). | Plasma T/SHBG (consider adrenal gland tests e.g. DHEAS, cortisol). Refer if plasma T>5 nmol/L provided SHBG is <30 nmol/L. |
| Menstrual irregularity. | (Clinical severity). | Pregnancy tests, prolactin, LH/FSH, FT4 testosterone, SHBG. |
| ? Premature menopause (amenorrhoea before 40 y). | (Clinical severity). | Pregnancy test, LH/FSH, oestradiol, FT4, prolactin. |
| Diminished libido (male) or impotence. | Persisting, without obvious cause e.g. drug-related. | Prolactin, T/SHBG, FT4 (LH/FSH, oestradiol). |
| Galactorrhoea. | If patient concerned, or if periods have stopped. | Prolactin, FT4. |
| Gynaecomastia. | Age-related. More important if post pubertal. Consider drugs. | Plasma T/SHBG, oestradiol, LH/FSH, prolactin, HCG, FT4. |
| Infertility. | No pregnancy after 12 months. | Females - prolactin, progesterone (day 21-24 of cycle), LH/FSH, testosterone.<br>Males - sperm count, prolactin, LH/FSH, T/SHBG. |
| Unexplained fatigue, unexplained weight loss, anorexia (? cortisol deficiency). | Severity (lack of other cause). | 0800 plasma cortisol, synacthen test<br>(FT4, T/SHBG in males, LH/FSH, prolactin). |
| Fatigue, weight gain, | First clinical suspicion. | Overnight dexamethasone |

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| plethora etc (? Cushing's Syndrome). | | test, 24h urine cortisol excretion |
| Tissue overgrowth: enlarging hands/feet, excessive sweating (? acromegaly). | When suspicion first aroused. | Plasma IGF-1. |
| Unexplained or severe hypertension, e.g. Conn's syndrome or other adrenal disorders (Cushings, phaeochromocytoma). | 1. If not responsive to usual therapy.<br>2. If recently acquired.<br>3. If plasma K is low.<br>4. If strongly episodic. | 1. Ambulant (pre 10 am) upright plasma renin (PRA) and plasma aldosterone.<br>2. Consider renal cause.(MSU, U/S kidney).<br>3. Consider Cushing's (see above).<br>4. Consider phaeochromocytoma (urine catecholamines). |
| Disorders of plasma calcium (e.g. chance finding). | Abnormal plasma calcium level (when corrected for plasma albumin) in presence of normal renal function. | Plasma parathyroid hormone (plasma 25 OH Vit D). Fasting 0800 plasma calcium, phosphate creatinine and urine calcium:creatinine ratio. |
| Increasing skin pigmentation (? Addison's disease). | At first suspicion. | 0800h plasma cortisol. Synacthen test, (plasma ACTH, PRA/aldosterone (ambulant, pre 1000h)). |
| ? Pituitary disorder i.e. hypopituitarism (visual loss, or other suspicion). | At first suspicion. | FT4, LH/FSH, prolactin, T/SHBG in males, 0800h cortisol, (synacthen test,) IGF-1. |
| Abnormal thirst, polyuria, nocturia. | If sustained symptoms with no obvious cause | Arrange for 24h urine collection (volume), Further testing if volume >3.0 litres/d in adults (refer). |
| "Whoozy" or confusional turns. ? spontaneous hypoglycaemia | On suspicion of spontaneous hypoglycaemia especially if occurring in the "fasted" state. | Try to obtain **both** plasma glucose and insulin level **during** symptoms. Overnight (12h) fasted glucose and |

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| | | insulin (NB - finger prick glucose assays are unhelpful). |
| Unexplained hyponatraemia (plasma Na <135mmol/L). | Persisting, without obvious cause.<br>Exclude drugs. | Plasma and urine osmolality and sodium concentration.<br>0800h plasma cortisol (synacthen test); FT4.<br>Consider chest x-ray.<br>Consider imaging for occult neoplasm. |

**Abbreviations**

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|---|---|
| 25-OH vit D | 25-hydroxy vitamin D |
| ACTH | Adrenocorticotrophic hormone |
| AVP | Arginine vasopressin |
| DHEAS | Dihydroepiandosterone sulphate |
| FSH | Follicle stimulating hormone |
| FT4 | Free thyroxine |
| HCG | Human chorionic gonadotrophin |
| IGF-I | Insulin-like growth factor I |
| LH | Luteinising hormone |
| PRA | Plasma renin activity |
| SHBG | Sex hormone-binding globulin |
| T | Testosterone |