



AYUMETRIX

Reinventing Diagnostics

SALIVA HORMONES INTERPRETATION GUIDE

Making sense of the saliva hormone tests involves more than just knowing why the test is done. It is also important to understand what the results mean and what factors can affect results. It is important to realize that test results may be outside of the "normal range" for many reasons. These variations may be due to differences in age, ethnicity, gender, menstrual cycle, degree of physical activity, problems with saliva sample collection and/or handling, non-prescription drugs, prescription drugs, alcohol intake and a number of other factors.

| Hormone | Result | Symptoms | Possible Causes | Treatment Considerations |
|---------------------|-------------|--|--|---|
| Estradiol | Low | Vaginal dryness Decreased bone density Hot flashes, night sweats, Foggy thinking Incontinence Thinning skin Heart palpitations | Reduced ovarian function Adrenal dysfunction Increased SHBG levels | Use co-factors for steroid production and ovarian function Test and support adrenal hormones Addition of an oral biestrogen Bone density every year, support bone mineral loss Nutritional interventions and weight bearing exercise program |
| | High | Mood swings, Anxiety Water retention Weight gain in the hips Nervous, Irritability Thyroid deficiency | Ovarian dysfunction Excessive production of androgens Increased aromatization Exogenous supplementation Decreased SHBG levels | Assess and support 2+16 hydroxylation pathways Test and treat liver detoxification Consider weight loss if increased BMI Decreased exposure to xenoestrogens Nutritional interventions (natural aromatase inhibitors, soy foods) Exercise and weight bearing programs Natural progesterone supplementation |
| Estrone | Low | Mood swings, Fatigue Irritability, Fibroids Thyroid dysfunction | Ovarian dysfunction Adrenal dysfunction | Use co-factors for steroid production and ovarian function Test and support adrenal hormones |
| | High | Allergies, Asthma Fibrocystic breasts Irritability, Fatigue Infertility, PCOS Fibroids, Mood swings Thyroid dysfunction | Increased aromatization Impaired phase II liver detoxification Exogenous supplementation Stress or Inflammation | Test and treat liver detoxification Assess 2+16 hydroxylation pathways Consider weight loss if increased BMI Assess and support adrenal health Decreased exposure to xenoestrogens Cruciferous vegetables to assist with metabolism and detoxification of steroids |
| Estriol | Low | Post menstrual ill health Heart related diseases Vaginal dryness Infertility Decreased bone density | Increased conversion from E1 Exogenous supplementation | Use co-factors for steroid production and ovarian function Test and support adrenal hormones |
| | High | Vaginal dryness Irregular periods Infertility Decreased bone density | Increased conversion from E1 Excessive supplementation | Assess and support 2 + 16 hydroxylation pathways |
| Progesterone | Low | Mood swings, Anxiety Loss of libido Depression, Headaches Joint pain, Nervous Water retention Weight gain in the hips Irritability Thyroid deficiency | Adrenal dysfunction Estrogen excess Thyroid insufficiency | Test and treat for steroid and adrenal functions Consider liver detoxification Bioidentical progesterone therapy Test thyroid hormones (FT3 plays important role) |
| | High | Tender breasts Mood swings Bloating Loss of libido Excessive sleep Dizziness Muscle weakness Vaginal dryness High body temperature | Adrenal hyperplasia Functional estrogen deficiency Excess progesterone supplementation Ovarian cysts Molar pregnancies Some forms of ovarian cancer | Test and support adrenal function Consider liver detoxification Check and re-evaluate progesterone dose (High progesterone dose tends to downregulate Pg and E2 receptors and cause deficiency symptoms even if levels are elevated) Lifestyle changes (reduce stress, exercise, meditation and yoga) Herbal remedies (Phytoestrogenic herbs like black cohosh; Non-estrogenic herbs like Macafem) |

| Hormone | Result | Symptoms | Possible Causes | Treatment Considerations |
|---------------------|-------------|--|--|--|
| Testosterone | Low | <p>FEMALES</p> <p>Low libido</p> <p>Weight gain</p> <p>Mood swings, Depression</p> <p>Anxiety</p> <p>Difficulty focusing</p> <p>Hair loss</p> | <p>FEMALES</p> <p>Adrenal Dysfunction</p> <p>Ovarian Dysfunction</p> <p>Low Progesterone</p> <p>Oral contraceptives</p> <p>Increased SHBG</p> <p>Menopause</p> | <p>FEMALES</p> <p>Assess and support adrenal hormones</p> <p>Assess and support ovarian function</p> <p>Consider Acetyl L- Carnitine to increase Testosterone</p> <p>Zinc (Cofactor for support of Testosterone)</p> <p>Testosterone Patches/ Pellets/ Intramuscular injection</p> <p>Oral DHEA for androgen replacement</p> |
| | | <p>MALES</p> <p>Erectile dysfunction</p> <p>Low libido</p> <p>Depression</p> <p>Difficulty focusing</p> <p>Hair loss</p> <p>Weight gain in the belly</p> <p>Decreased muscle mass</p> <p>Decreased muscle</p> | <p>MALES</p> <p>Adrenal dysfunction</p> <p>Testicular Insufficiency</p> <p>Testicular damage</p> <p>Aging</p> <p>Brain disorders</p> <p>High estrogen</p> <p>Vit. D deficiency</p> | <p>MALES</p> <p>Assess and manage adrenal dysfunction</p> <p>Testosterone replacement therapy</p> <p>Progesterone supplementation (Inhibits 5-alpha reductase)</p> <p>Herbal support (Ashwagandha, Malaysian ginseng, licorice, Yohimbe, Pine bark extract)</p> <p>Vitamin D and Zinc (Foods containing Zinc -Oysters, lamb, pumpkin seeds, nuts, seafood etc.)</p> <p>Oral DHEA</p> |
| | High | <p>FEMALES</p> <p>Acne</p> <p>Menstrual irregularity</p> <p>Increased body/facial hair</p> <p>Weight gain</p> <p>Oily skin</p> <p>Decreased breast size</p> | <p>FEMALES</p> <p>Adrenal dysfunction</p> <p>Ovarian dysfunction</p> <p>PCOS</p> <p>Insulin resistance/ diabetes</p> <p>Thyroid disorders</p> <p>Cushing's syndrome</p> <p>Anabolic steroids</p> | <p>FEMALES</p> <p>Assess and support adrenal hormones</p> <p>Assess and support ovarian function</p> <p>Treat progesterone deficiency if any</p> <p>Check for thyroid function</p> <p>Increase SHBG if levels are low</p> <p>Treat for insulin resistance</p> <p>Consider weight loss, healthy lifestyle changes</p> |
| | | <p>MALES</p> <p>Acne</p> <p>Oily skin</p> <p>Hypertension</p> <p>Aggression</p> <p>Hair loss</p> <p>Mood swings</p> <p>Anger</p> | <p>MALES</p> <p>Testicular dysfunction</p> <p>Adrenal dysfunction</p> <p>Low SHBG</p> | <p>MALES</p> <p>Check for adrenal function and support if needed</p> <p>Increase SHBG if low</p> <p>Check for thyroid function</p> <p>Treat for insulin resistance symptoms if any</p> <p>Moderate exercise, healthy lifestyle changes</p> <p>Stress reduction</p> <p>Herbal remedies (Flaxseed, Soyfoods, Licorice, Saw Pal-</p> |
| DHEA | Low | <p>Fatigue</p> <p>Low energy/ stamina</p> <p>Hair loss</p> <p>Difficulty losing weight</p> <p>Low energy</p> <p>Mood swings</p> <p>Aching joints</p> <p>Low libido</p> <p>Lowered immunity</p> <p>Decreased bone density</p> | <p>Adrenal insufficiency</p> <p>Androgen dysfunction</p> <p>Alzheimer's disease,</p> <p>Heart disease</p> <p>Depression</p> <p>Diabetes</p> <p>Osteoporosis</p> <p>Birth control</p> | <p>Asses androgen function and treat if needed</p> <p>Measure and restore other hormones</p> <p>Oral DHEA supplementation</p> <p>Healthy diet and lifestyle changes, exercise</p> |
| | High | <p>FEMALES</p> <p>Oily skin</p> <p>Increased hair growth</p> <p>Deep voice</p> <p>Irregular periods</p> <p>Smaller breast size</p> <p>Increased genital size</p> <p>Headache, Nausea</p> <p>Sleep problems</p> | <p>Adrenal hyperplasia</p> <p>Adrenal tumors</p> <p>Androgen dysfunction</p> <p>PCOS</p> <p>DHEA Supplementation</p> | <p>No treatment required if no symptoms</p> <p>Surgical removal of larger tumors</p> <p>Stress relieving medications</p> |
| | | <p>MALES</p> <p>Aggression</p> <p>Urinary urgency</p> <p>Breast tenderness</p> <p>Reduced testicular size</p> <p>Headache, nausea</p> <p>Sleep problems</p> | <p>MALES</p> <p>Adrenal tumors</p> | |

| Hormone | Result | Symptoms | Possible Causes | Treatment Considerations |
|--|---|---|--|--|
| Cortisol | Low | Faintness & dizziness Heart palpitations Inability to cope with stress Social anxiety Fatigue Depression Weakness and fatigue Emotional instability Muscle weakness | Hypoadrenalism (Addison's disease) ACTH deficiency Tuberculosis Adrenal inflammation Adrenal hyperplasia Amyloidosis Sarcoidosis Metastases | Glucocorticoids and mineralocorticoids replacement Oral hydrocortisone replacement therapy in severe cases Cortisol testing regularly to monitor levels Stress reduction exercises Yoga, meditation recommended |
| | High | Cognitive difficulties New or worsened high blood pressure Headache Fatigue Muscle weakness Depression, anxiety and irritability Loss of emotional control Bone loss, leading to fractures over time | Adrenal dysfunction Excess cortisol production (Cushing's Syndrome) Pituitary adenoma Increased ACTH Adrenal adenoma Familial Cushing's Syndrome | Reduced Corticosteroid use Surgery, if cause of Cushing's is a tumor Medications to control excessive production of cortisol at the adrenal gland include ketoconazole (Nizoral), mitotane (Lysodren) and metyrapone (Metopirone). Mifepristone (Korlym) is approved for people with Cushing syndrome who have type 2 diabetes or glucose intolerance. Mifepristone does not decrease cortisol production, but it blocks the effect of cortisol on tissues. |
| Understanding Diurnal Cortisol Patterns | High throughout the day | | Adrenal dysfunction | Treatment considerations listed above |
| | High AM & PM but low all day | | On the way to Adrenal fatigue | Replace DHEA and Testosterone if low Progesterone levels should be tested Adaptogens, Theanine, Magnesium recommended |
| | High normal AM but low all day | | On the verge of Adrenal fatigue | Replace DHEA and Testosterone if levels are low Progesterone levels should be tested Adaptogens, Theanine, Magnesium recommended |
| | Low throughout the day | | Adrenal fatigue | Treatment considerations listed above |
| | High PM | | Abnormal ACTH production by the adrenals or pituitary or a tumor outside pituitary | Test and balance Cortisol/ DHEA ratio Stress reduction Adaptogens, , Phosphatidyl Serine, Magnesium Glycinate |

Questions?

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