TEST REPORT

 # xxxxx

Ordering Provider:
Regenerus Laboratories, Ltd

Samples Received
11/08/2022

Report Date
11/16/2022

Samples Collected
Saliva - 10/30/22 09:42
Saliva - 10/30/22 13:25
Saliva - 10/30/22 18:16
Saliva - 10/30/22 22:28
Blood Spot - 10/30/22 09:55

Patient Name: Sample Report HOR28 Weight Management + Thyroid
Patient Phone Number:

Gender Female	**Last Menses** 09/25/2022	**Height** 5 ft 4 in	**Waist** 75 cm
DOB 9/7/1995 (27 yrs)	**Menses Status** Pre-Menopausal - Irregular	**Weight** 71 kg	**BMI** 26.9

TEST NAME	RESULTS | 10/30/22	RANGE
Salivary Steroids		
Estradiol	11.7 H	1.3-3.3 pg/mL Premenopausal (Luteal)
Progesterone	21 L	75-270 pg/mL Premenopausal (Luteal)
Ratio: Pg/E2	2 L	Optimal: 100-500 when E2 1.3-3.3 pg/mL
Testosterone	38	16-55 pg/mL (Age Dependent)
DHEAS	8.6	2-23 ng/mL (Age Dependent)
Cortisol	6.8	3.7-9.5 ng/mL (morning)
Cortisol	1.9	1.2-3.0 ng/mL (noon)
Cortisol	1.3	0.6-1.9 ng/mL (evening)
Cortisol	0.6	0.4-1.0 ng/mL (night)
Blood Spot Thyroids		
Free T4	0.8	0.7-2.5 ng/dL
Free T3	3.8	2.4-4.2 pg/mL
TSH	2.5	0.5-3.0 µU/mL
TPOab	27	0-150 IU/mL (70-150 borderline)
Blood Spot CardioMetabolic Markers		
Insulin	9.8	1-15 µIU/mL (optimal 2-6)
Hemoglobin A1c	4.2	<6%

TEST REPORT | Results *continued*

TEST NAME	RESULTS | 10/30/22	RANGE
Blood Spot		
Vitamin D, 25-OH, D2	<4	<4 if not supplementing (< 10 nmol/L)
Vitamin D, 25-OH, D3	18 L	20-80 ng/ml (50-200 nmol/L)
Vitamin D, 25-OH, Total	18 L	20-80 ng/ml (50-200 nmol/L)

*<dl = Less than the detectable limit of the lab. **N/A** = Not applicable; 1 or more values used in this calculation is less than the detectable limit. **H** = High. **L** = Low.*

Therapies

None

Graphs

Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

Saliva Estradiol

Saliva Progesterone

Saliva Testosterone

Saliva DHEAS

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Laboratory Director

Alison McAllister, ND.
(Ordering Provider unless otherwise specified on page 1)

Saliva Cortisol

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11/16/2022 11:11:03 PM

The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practitioner for diagnosis and treatment.

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David T. Zava, Ph.D.
Laboratory Director

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3 of 7

Disclaimer: Supplement type and dosage are for informational purposes only and are not recommendations for treatment. For a complete listing of reference ranges, go to www.zrtlab.com/reference-ranges.

TEST NAME	WOMEN
Salivary Steroids	
Estradiol	0.5-1.7 pg/mL Postmenopausal (optimal 1.3-1.7); 1.3-3.3 pg/mL Premenopausal (Luteal); 0.8-12 pg/mL Estrogen Rplcmnt (optimal 1.3-3.3); 0.5-2.2 pg/mL (Synthetic HRT, BC); 0.9-2.5 pg/mL Premenopausal (Follicular); 1.1-4.8 Premeno-Ovulatory (2.0-4.8 optimal)
Progesterone	12-100 pg/mL Postmenopausal; 14-48 pg/mL Premenopausal (Follicular); 75-270 pg/mL Premenopausal (Luteal); 30-300 pg/mL Oral, Troche, SL Progesterone (100-300 mg); 200-3000 pg/mL Topical, Vag Pg (10-30mg); 10-53 pg/mL Synthetic Progestins (HRT, BC); 11-59 pg/ml Premeno-Ovulatory
Ratio: Pg/E2	Optimal: 100-500 when E2 1.3-3.3 pg/mL
Testosterone	16-55 pg/mL (Age Dependent)
DHEAS	2-23 ng/mL (Age Dependent)
Cortisol	3.7-9.5 ng/mL (morning); 1.2-3.0 ng/mL (noon); 0.6-1.9 ng/mL (evening); 0.4-1.0 ng/mL (night)
Blood Spot Thyroids	
Free T4	0.7-2.5 ng/dL
Free T3	2.4-4.2 pg/mL
TSH	0.5-3.0 µU/mL
TPOab	0-150 IU/mL (70-150 borderline)
Blood Spot CardioMetabolic Markers	
Insulin	1-15 µIU/mL (optimal 2-6)
Hemoglobin A1c	<6%
Blood Spot	
Vitamin D, 25-OH, D2	<4 if not supplementing (< 10 nmol/L)
Vitamin D, 25-OH, D3	20-80 ng/ml (50-200 nmol/L)
Vitamin D, 25-OH, Total	20-80 ng/ml (50-200 nmol/L)

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4 of 7

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Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES — RESULTS | 10/30/22

Category	Result
Estrogen / Progesterone Deficiency	14%
Estrogen Dominance / Progesterone Deficiency	21%
Low Androgens (DHEA/Testosterone)	17%
High Androgens (DHEA/Testosterone)	11%
Low Cortisol	34%
High Cortisol	19%
Hypometabolism	20%
Metabolic Syndrome	18%

SYMPTOM CHECKLIST

Symptom	Severity (MILD / MODERATE / SEVERE)
Aches and Pains	Moderate
Acne	Mild
ADD/ADHD	Mild
Addictive Behaviors	Mild
Allergies	Moderate
Anxious	Mild
Autism Spectrum Disorder	Mild
Bleeding Changes	Moderate
Blood Pressure High	Mild
Blood Pressure Low	Mild
Blood Sugar Low	Mild
Body Temperature Cold	Mild
Bone Loss	Mild
Breast Cancer	Mild
Breasts - Fibrocystic	Mild
Breasts - Tender	Mild
Chemical Sensitivity	Mild
Cholesterol High	Mild
Constipation	Moderate
Depressed	Mild
Developmental Delays	Mild
Eating Disorders	Mild
Fatigue - Evening	Moderate
Fatigue - Morning	Moderate
Fibromyalgia	Mild
Foggy Thinking	Mild
Goiter	Mild
Hair - Dry or Brittle	Mild
Hair - Increased Facial or Body	Mild
Hair - Scalp Loss	Moderate
Headaches	Moderate
Hearing Loss	Mild
Heart Palpitations	Mild
Hoarseness	Mild
Hot Flashes	Mild
Incontinence	Mild
Infertility	Mild
Irritable	Mild
Libido Decreased	Mild
Mania	Mild

SYMPTOM CHECKLIST

Symptom	MILD	MODERATE	SEVERE
Memory Lapse			
Mood Swings	▓▓▓▓▓		
Muscle Size Decreased			
Nails Breaking or Brittle			
Nervous			
Night Sweats			
Numbness - Feet or Hands			
OCD	▓▓▓▓▓		
Panic Attacks			
PreMenstrual Dysphoric Disorder			
Pulse Rate Slow			
Rapid Aging			
Rapid Heartbeat			
Skin Thinning			
Sleep Disturbed	▓▓▓▓▓▓▓▓		
Stamina Decreased			
Stress	▓▓▓▓▓▓▓▓		
Sugar Cravings	▓▓▓▓▓▓▓▓		
Sweating Decreased			
Swelling or Puffy Eyes/Face			
Tearful	▓▓▓▓▓		
Triglycerides Elevated			
Urinary Urge Increased			
Uterine Fibroids			
Vaginal Dryness			
Water Retention			
Weight Gain - Hips	▓▓▓▓▓▓▓▓		
Weight Gain - Waist	▓▓▓▓▓▓▓▓		

Lab Comments

Estradiol is higher than the expected range seen in most premenopausal women, suggesting excessive endogenous production by the ovaries (common at perimenopause and in premenopausal women with cystic ovaries) or estrogen replacement therapy (none indicated). If symptoms of estrogen imbalance are problematic it would be worthwhile to consider lowering the estrogen burden with exercise, herbs, diet (higher fiber and less red meat) and/or nutritional supplements such as cruciferous vegetable extracts. Bio-identical progesterone supplementation may also be helpful as it is a natural anti-estrogen and also helps with safe estrogen clearance.

Progesterone is low, consistent with anovulatory cycles (no ovulation) and/or a luteal phase deficiency (ovulation with low progesterone production). Women with irregular cycles are commonly anovulatory. Low progesterone may contribute to symptoms of both estrogen excess (dominance) and estrogen deficiency, particularly if estradiol is fluctuating erratically as it does with irregular menstrual cycles. Bio-identical progesterone supplementation often helps stabilize symptoms of estrogen imbalance.

Testosterone is within range and symptoms of androgen imbalance are minimal.

DHEAS is within mid-normal expected age range (7-23 ng/ml for age range 12-30). DHEAS is highest during the late teens to early twenties (10-20 ng/ml) and drops steadily with age to the lower end of range by age 70-80.

Cortisol is within expected range throughout the day and is following a normal circadian rhythm; however, symptoms of low cortisol are reported. Under stress situations the adrenal glands respond by increasing cortisol output. However, when cortisol levels are within normal range under situations of excessive stress, as reported herein, this suggests that the adrenal glands may be overworking to keep up with the demands of the stressors, which could eventually lead to adrenal exhaustion. HPA axis dysfunction is most commonly caused by stressors which include: psychological stress (emotional), sleep deprivation, poor diet (low protein-particularly problematic in vegetarians), nutrient deficiencies (particularly low vitamins C and B5), physical insults (surgery, injury), diseases (cancer, diabetes), chemical exposure (environmental pollutants, excessive medications), low levels of cortisol precursors (pregnenolone and progesterone) and pathogenic infections (bacteria, viruses and fungi). A normal daily output of cortisol is essential to maintain normal metabolic activity, help regulate steady state glucose levels (important for brain function and energy production), and optimize immune function. Depletion of adrenal cortisol synthesis by a chronic stressor, sleep deprivation, and/or nutrient deficiencies (particularly vitamins C and B5) often leads to symptoms such as fatigue, allergies (immune dysfunction), chemical sensitivity, cold body temp, and sugar craving. For additional information about strategies for supporting adrenal health

and reducing stress(ors), the following books are worth reading: "Adrenal Fatigue; The 21st Century Stress Syndrome", by James L. Wilson, N.D., D.C., PhD; "The Cortisol Connection", by Shawn Talbott, Ph.D.; "The End of Stress As We Know It" by Bruce McEwen; "Awakening Athena" by Kenna Stephenson, MD.

Thyroid hormones (TSH, free T4, and free T3) and thyroid peroxidase antibodies (TPO) are within normal ranges and symptoms of thyroid imbalance are minimal.

Fasting insulin is within normal range, but higher than the optimal range of 2-6, suggesting an evolving insulin resistance. Insulin resistance predisposes to significantly increased lifetime risk for developing more serious health conditions such as metabolic syndrome (high blood pressure, excessive weight gain in the waist, elevated blood lipids), diabetes, and cardiovascular disease. Stress reduction, exercise, proper diet (reducing consumption of excessive carbohydrates), and balancing hormones within normal physiological ranges are important for prevention of insulin resistance/metabolic syndrome and long term risks to health.

Hemoglobin A1c (HbA1c) is within range. HbA1c is a measure of red blood cell hemoglobin glycation and reflects the average blood glucose for the previous 3 months. The American Diabetic Association recommends the following HbA1c levels: normal if it is <5.7%, prediabetes 5.7%-6.4%, and diabetic >6.5%.

Vitamin D is lower than considered sufficient. Vitamin D levels are considered insufficient between 20-30 ng/ml and sufficient between 30-80 ng/ml. While optimal levels are still being researched, the Endocrine society recommends keeping levels above >30 ng/ml. Other researchers have suggested that vitamin D levels are optimal between 50-80 ng/ml.

Vitamin D deficiency has been closely associated with a wide range of conditions and diseases, which include cardiovascular disease, stroke, osteoporosis, osteomalacia, cancer, and autoimmune diseases such as multiple sclerosis, rheumatoid arthritis, and diabetes (types 1 and 2) (for review see: Holick MF. NEJM 357: 266-281, 2007). Lack of adequate sunlight resulting from geographical location (northern climates), excessive clothing, working indoors during daylight hours, purposely avoiding sunlight with clothing and sunscreens, and aging of the skin contribute to low vitamin D levels. Vitamin D3 may be increased by eating foods high in D3 (fish), exposing the skin to sunshine without sunscreen during mid-day for 15-20min (latitudes below Boston, MA), use of a UVB light, and/or supplementation with Vitamin D3.

Professional Comments

Thank you for ordering your test through Regenerus Laboratories. WWW.REGENERUSLABS.COM