Test Results

ZRT LABORATORY
8605 SW Creekside Place
Beaverton, OR 97008
Phone: 503-466-2445 Fax: 503-466-1636
info@zrtlab.com www.zrtlab.com

D2015 05 27 001 SB

Samples Arrived: 05/27/2015
Date Closed: 06/01/2015

Samples Collected:
Saliva: 05/17/15 06:45
Saliva: 05/17/15 12:05
Saliva: 05/17/15 18:00
Saliva: 05/17/15 22:45
Blood Spot: 05/17/15 07:00

Getuwell
8605 SW Creekside Pl
Beaverton, OR 97008

Comp. Female Profile II
123 Fake Ln
Beaverton, OR 97008

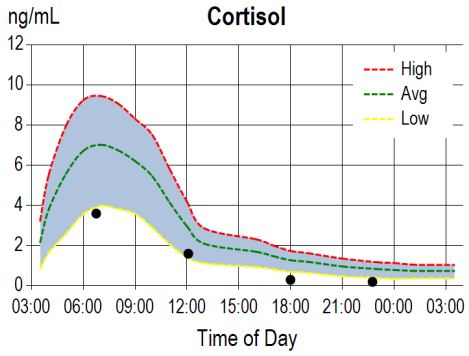
Menses Status: Postmenopausal
Gender: Female
Last Menses: Unspecified
DOB: 5/14/1950 (65 yrs)
Patient Ph#: 555 555 5555
Height: Unspecified
Weight: Unspecified
Waist: Unspecified

Test Name	Result		Units	Range
Cortisol (Saliva)	3.6	L	ng/mL	3.7-9.5 (morning)
Cortisol (Saliva)	1.6		ng/mL	1.2-3.0 (noon)
Cortisol (Saliva)	0.3	L	ng/mL	0.6-1.9 (evening)
Cortisol (Saliva)	0.2	L	ng/mL	0.4-1.0 (night)
Estradiol (Blood Spot)	25		pg/mL	<10-49 Postmenopausal
Progesterone (Blood Spot)	15		ng/mL	3.3-22.5 Premeno-luteal or PgRT
Ratio: Pg/E2 (Blood Spot)	600	H		Pg/E2 (bloodspot-optimal 100-500)
Testosterone (Blood Spot)	15		ng/dL	10-45 Postmenopausal
DHEAS (Blood Spot)	45		µg/dL	40-290
SHBG (Blood Spot)	35		nmol/L	15-120
Free T4 (Blood Spot)	0.9		ng/dL	0.7-2.5
Free T3 (Blood Spot)	2.5		pg/mL	2.5-6.5
TSH (Blood Spot)	5.8	H	µU/mL	0.5-3.0
TPOab (Blood Spot)*	500	H	IU/mL	0-150 (70-150 borderline)

**For research purposes only.*

Therapies

20mg topical Progesterone (OTC) (1 Days Last used); 5000IU oral Vitamin D (unknown type) (OTC) (1 Days Last used)



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.

David T. Zava, Ph.D.
(Laboratory Director)

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ZRT Laboratory Reference Ranges

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
Cortisol (Saliva) - ng/mL	3.7-9.5 (morning); 1.2-3.0 (noon); 0.6-1.9 (evening); 0.4-1.0 (night)
Estradiol (Blood Spot) - pg/mL	43-180 Premeno-luteal or ERT; <10-49 Postmenopausal
Progesterone (Blood Spot) - ng/mL	3.3-22.5 Premeno-luteal or PgRT; <0.1-0.8 Postmenopausal
Ratio: Pg/E2 (Blood Spot)	Pg/E2 (bloodspot-optimal 100-500)
Testosterone (Blood Spot) - ng/dL	20-130 Premeno-luteal or TRT; 10-45 Postmenopausal
DHEAS (Blood Spot) - µg/dL	40-290
SHBG (Blood Spot) - nmol/L	15-120
Free T4 (Blood Spot) - ng/dL	0.7-2.5
Free T3 (Blood Spot) - pg/mL	2.5-6.5
TSH (Blood Spot) - µU/mL	0.5-3.0
TPOab (Blood Spot) - IU/mL	0-150 (70-150 borderline)

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**Category	Symptom	None	Mild	Moderate	Severe
	Hot Flashes				
	Night Sweats				
	Vaginal Dryness				
	Incontinence				
	Foggy Thinking				
	Memory Lapse				
	Tearful				
	Depressed				
	Heart Palpitations				
	Bone Loss				
	Sleep Disturbed				
	Headaches				
	Aches and Pains				
	Fibromyalgia				
	Morning Fatigue				
	Evening Fatigue				
	Allergies				
	Sensitivity To Chemicals				
	Stress				
	Cold Body Temperature				
	Sugar Craving				
	Elevated Triglycerides				
	Weight Gain - Waist				
	Decreased Libido				
	Loss Scalp Hair				
	Increased Facial or Body Hair				
	Acne				
	Mood Swings				
	Tender Breasts				
	Bleeding Changes				
	Nervous				
	Irritable				
	Anxious				
	Water Retention				
	Fibrocystic Breasts				
	Uterine Fibroids				
	Weight Gain - Hips				
	Decreased Stamina				
	Decreased Muscle Size				
	Rapid Aging				
	High Cholesterol				
	Swelling or Puffy Eyes/Face				
	Slow Pulse Rate				
	Decreased Sweating				
	Hair Dry or Brittle				
	Nails Breaking or Brittle				
	Thinning Skin				
	Infertility Problems				
	Constipation				
	Rapid Heartbeat				
	Hearing Loss				
	Goiter				
	Hoarseness				
	Increased Urinary Urge				
	Low Blood Sugar				
	High Blood Pressure				
	Low Blood Pressure				
	Numbness - Feet or Hands				
	Breast Cancer				

Metabolic Syndrome	20.0
Hypometabolism	47.5
High Cortisol	39.7
Low Cortisol	46.0
High Androgens (DHEA/Testosterone)	17.4
Low Androgens (DHEA/Testosterone)	51.4
Estrogen Dominance / Progesterone Deficiency	8.5
Estrogen / Progesterone Deficiency	49.1

***Category refers to the most common symptoms experienced when specific hormone types (eg estrogens, androgens, cortisol) are out of balance, i.e., either high or low.*

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Lab Comments

Salivary cortisol ranges from low to low-normal throughout most of the day suggesting adrenal fatigue. Stressors that invoke adrenal exhaustion include psychological stress (emotional), sleep deprivation, physical insults (surgery, injury, diseases), chemical exposure (environmental pollutants, excessive medications), and pathogenic infections (bacterial, viral, fungal). Depletion of cortisol by a stressor often leads to symptoms such as fatigue, allergies (immune dysfunction), chemical sensitivity, cold body temp, and sugar craving. Adrenal support is worthwhile considering. Adequate sleep, gentle exercise, naps, meditation, proper diet (adequate protein), natural progesterone, adrenal extracts, herbs, and nutritional supplements (vitamins C and B5) are some of the natural ways to help support adrenal function (consult with a health care provider for proper types and dosing). For additional information about strategies for supporting adrenal health and reducing stress(ors), the following books are worth reading: "Adrenal Fatigue", by James L. Wilson, N.D., D.C., Ph.D.; "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.

Estradiol (blood spot) is low-normal range for a postmenopausal woman, consistent with symptoms of estrogen deficiency (e.g. hot flashes, night sweats, vaginal dryness, etc.). Consider estrogen restoration therapy balanced with natural progesterone, assuming no contraindications (e.g. breast cancer). Estradiol therapy that achieves physiological levels of estradiol (70-120 pg/ml) seen in premenopausal women is more effective when complemented with natural progesterone.

Progesterone (blood spot) is within the optimal physiological range (10-25 ng/ml) with progesterone used topically at a physiological dose (10-30 mg). While progesterone is within the optimal range seen in premenopausal women during the luteal phase (second half) of the menstrual cycle it is NOT well balanced with estradiol, which remains within the lower range for a postmenopausal woman (< 50 pg/ml). This results in a high Pg/E2 ratio. A relative excess of progesterone to estradiol can result in a lowering of tissue/cellular response to both estradiol and progesterone.

Testosterone (blood spot) is within low-normal range and symptoms of androgen deficiency persist. Symptoms/signs most commonly associated with low testosterone include: low libido, incontinence, vaginal dryness, fatigue, memory lapses, depression, and bone loss. Testosterone is an anabolic hormone essential for creating energy, maintaining optimal brain function (memory), regulating the immune system, and building and maintaining the integrity of structural tissues such as skin, muscles, and bone. Testosterone therapy is worth considering. Testosterone is a precursor to estradiol and therapy with testosterone or testosterone precursors like DHEA often raise the level of estradiol; however, this is individual and should be monitored by testing.

DHEAS (blood spot) is within low-normal range. DHEAS is highest during the late teens to early twenties and then declines progressively with age to the lower levels of the range in healthy men and women. DHEA(S) is a precursor to testosterone and when levels of DHEA(S) are low this is commonly associated with low testosterone. Low DHEAS is often associated with symptoms of androgen deficiency, similar to those of low testosterone. Consider DHEA therapy to raise both DHEA(S) and testosterone levels. Important Note: DHEA (or testosterone) therapy can cause a transient suppression of cortisol, which can be problematic when cortisol is already low (note: this individual's cortisol is low; therefore, use DHEA cautiously).

SHBG is within low-normal range, consistent with lower estradiol and estrogen deficiency symptoms seen in this individual. The SHBG level is a relative index of overall exposure to all forms of estrogens (endogenous, pharmaceutical, xeno-estrogens). As the estrogen levels increase in the bloodstream there is a proportional increase in hepatic production of SHBG. Thyroid hormone and insulin also play a role in regulating hepatic SHBG synthesis. Thyroid hormone synergizes with estrogen to increase SHGB production while insulin, in excess (caused by insulin resistance), decreases SHGB synthesis. Thus, in individuals with thyroid deficiency and insulin resistance the SHBG level is usually low. SHBG is an important estradiol and testosterone binding globulin that help increase the half life of these hormones in the bloodstream, and also limit their bioavailability to target tissues. SHBG binds tightly to testosterone and its more potent metabolite dihydrotestosterone (DHT). It also binds tightly to estradiol, the most potent of the endogenous estrogens, but about 5 times weaker than to testosterone and DHT. Thus an increase in SHBG results in a disproportionate distribution of bioavailable testosterone (lower relative to estradiol) and estradiol (higher relative to testosterone).

Free T4 and free T3 are within normal range but slightly lower than the optimal range. Reported symptoms indicate thyroid deficiency; therefore, it would be worthwhile to consider thyroid therapy or modification of any hormonal imbalances (eg. high estradiol, low progesterone, low testosterone, high or low cortisol) that might impede optimal thyroid function.

TSH is high. Although most laboratories have normal TSH ranges from about 0.3-5.0 mU/L, new studies are finding that the mean and median values for healthy individuals are in the 1.0-1.5 mU/L range . TSH levels >3.0 mU/L are now considered abnormal according to the endocrinology association - see www.aace.com for more information. Most thyroid experts now believe that TSH should be kept below 2.0 mU/L for optimal health. Elevated TSH is often associated with symptoms of hypothyroidism, which include fatigue, decreased stamina, depression, rheumatic pain, sleep disturbances, cold extremities or feeling cold, reduced body temperature, brittle nails, dry course hair, hair loss, infertility, low libido, puffy eyes and face, decreased sweating, menorrhagia, and/or constipation. Periodic TSH monitoring is recommended if clinical symptoms of thyroid deficiency persist. T3 results may help guide treatment decisions. Thyroid therapy may be worthwhile since T4 and/or T3 are

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low-normal range and symptoms of thyroid deficiency are self-reported as problematic.

Thyroid peroxidase (TPO) antibodies are elevated indicating autoimmune thyroiditis, often referred to as Hashimoto's thyroiditis. This condition is associated with elevated circulating antibodies to thyroid peroxidase, the enzyme found within the thyroid gland responsible for manufacturing thyroid hormones (T4, T3). When the level of TPO antibodies is elevated this can lead to destruction of the thyroid gland and acute release of high levels of thyroid hormones T4 and T3. Continued autoimmune destruction of the thyroid gland eventually results in fibrosis and depletion of the thyroid hormones from the thyroid gland, thus causing an eventual hypothyroid state. Individuals with autoimmune thyroiditis can suffer from symptoms of both thyroid excess and deficiency, depending on the state of the disease (ie, autoimmune attack on the thyroid and hyperthyroidism or post-attack and hypothyroidism). Clinical studies show that selenium supplementation is helpful in decreasing autoimmune destruction of the thyroid gland (Duntas et al. Eur J Endocrinology 148: 389-393, 2003). Normal cortisol levels produced by the adrenal glands help to subdue the autoimmune attack on the thyroid gland. However, if the adrenals are exhausted, resultant low cortisol can lead to intensified autoimmune destruction of the thyroid gland, often referred to as a "thyroid storm". Thus, in addition to selenium supplementation, testing of salivary cortisol levels, stress reduction, and adrenal support should be considered as important components of the treatment strategy for Hashimoto's autoimmune thyroiditis.

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