Test Results

D2015 05 27 001 SB

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

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

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

*For research purposes only.

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

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortisol (Saliva) - ng/mL</td>
<td>3.7-9.5 (morning); 1.2-3.0 (noon); 0.6-1.9 (evening); 0.4-1.0 (night)</td>
</tr>
<tr>
<td>Estradiol (Blood Spot) - pg/mL</td>
<td>43-180 Premeno-luteal or ERT; &lt;10-49 Postmenopausal</td>
</tr>
<tr>
<td>Progesterone (Blood Spot) - ng/mL</td>
<td>3.3-22.5 Premeno-luteal or PgRT; &lt;0.1-0.8 Postmenopausal</td>
</tr>
<tr>
<td>Ratio: Pg/E2 (Blood Spot)</td>
<td>Pg/E2 (bloodspot-optimal 100-500)</td>
</tr>
<tr>
<td>Testosterone (Blood Spot) - ng/dL</td>
<td>20-130 Premeno-luteal or TRT; 10-45 Postmenopausal</td>
</tr>
<tr>
<td>DHEAS (Blood Spot) - µg/dL</td>
<td>40-290</td>
</tr>
<tr>
<td>SHBG (Blood Spot) - nmol/L</td>
<td>15-120</td>
</tr>
<tr>
<td>Free T4 (Blood Spot) - ng/dL</td>
<td>0.7-2.5</td>
</tr>
<tr>
<td>Free T3 (Blood Spot) - pg/mL</td>
<td>2.5-6.5</td>
</tr>
<tr>
<td>TSH (Blood Spot) - µU/mL</td>
<td>0.5-3.0</td>
</tr>
<tr>
<td>TPOab (Blood Spot) - IU/mL</td>
<td>0-150 (70-150 borderline)</td>
</tr>
</tbody>
</table>
**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  | Gout  | Hoarseness  | Increased Urinary Urge  | Low Blood Sugar  | High Blood Pressure  | Low Blood Pressure  | Numbness - Feet or Hands  | Breast Cancer  | Metabolic Syndrome  | Hypometabolism  | High Cortisol  | Low Cortisol  | High Androgens (DHEA/Testosterone)  | Low Androgens (DHEA/Testosterone)  | Estrogen Dominance / Progesterone Deficiency

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

DHEA(S) is a precursor to testosterone and when levels of DHEA(S) are low this is commonly associated with low testosterone. Testosterone 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.

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 SHBG production while insulin, in excess (caused by insulin resistance), decreases SHBG 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 (e.g. 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...
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.