TEST REPORT

25 AGAIN® HORMONE EXPERTS OPTIMAL AGING

 # 2018 07 27 200 SB

Ordering Provider:
Sara Getuwell MD

Samples Received
07/27/2018

Report Date
08/01/2018

Samples Collected
Saliva - 07/24/18 08:05
Saliva - 07/24/18 12:10
Saliva - 07/24/18 18:50
Saliva - 07/24/18 23:15
Blood Spot - 07/24/18 08:00

Sample report is provided for display only and may not represent the actual biomarkers being ordered/tested

Patient Name: Weight Management
Patient Phone Number: 555 555 5555

Gender	Last Menses	Height	Waist
Female	Unspecified	5 ft 5 in	32 in
DOB	**Menses Status**	**Weight**	**BMI**
3/22/1961 (57 yrs)	Hysterectomy (ovaries removed)	170 lb	28.3

TEST NAME	RESULTS | 07/24/18	04/09/18	RANGE
Salivary Steroids			
Estradiol	2.2	4.7	0.8-12 pg/mL Estrogen Rplcmnt (optimal 1.3-3.3)
Progesterone	73(1)	22(2)	(1) 30-300 pg/mL Oral Progesterone (100-300 mg) (2) 12-100 pg/mL Postmenopausal
Ratio: Pg/E2	33 L	5 L	Optimal: 100-500 when E2 1.3-3.3 pg/mL
Testosterone	35	15 L	16-55 pg/mL (Age Dependent)
DHEAS	5.0	2.3	2-23 ng/mL (Age Dependent)
Cortisol	9.0	8.1	3.7-9.5 ng/mL (morning)
Cortisol	1.5	1.9	1.2-3.0 ng/mL (noon)
Cortisol	0.7	0.5 L	0.6-1.9 ng/mL (evening)
Cortisol	0.4	0.4	0.4-1.0 ng/mL (night)
Blood Spot			
Vitamin D, 25-OH, D2	<4	<4	<4 if not supplementing (< 10 nmol/L)
Vitamin D, 25-OH, D3	46	15 L	20-80 ng/ml (50-200 nmol/L)
Vitamin D, 25-OH, Total	46	15 L	20-80 ng/ml (50-200 nmol/L)
Blood Spot Thyroids			
TSH	1.0	8 H	0.5-3.0 µU/mL
Blood Spot CardioMetabolic Markers			
Insulin	6.4	11	1-15 µIU/mL (optimal 2-6)
Hemoglobin A1c	4.2	5.8	<6%

<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

07/24/2018: 0.5mg topical Biestrogen (1:1 50/50 E3 + E2) (compounded) (23 Hours Last Used)100mg oral Progesterone (compounded) (1 Days Last Used) 0.5mg topical Testosterone (compounded) (22 Hours Last Used)10mg topical DHEA (compounded) (22 Days Last Used)65mg oral Armour (glandular thyroid) (Pharmaceutical) (1 Days Last Used)5000IU oral Vitamin D (unknown type) (OTC) (1 Days Last Used)

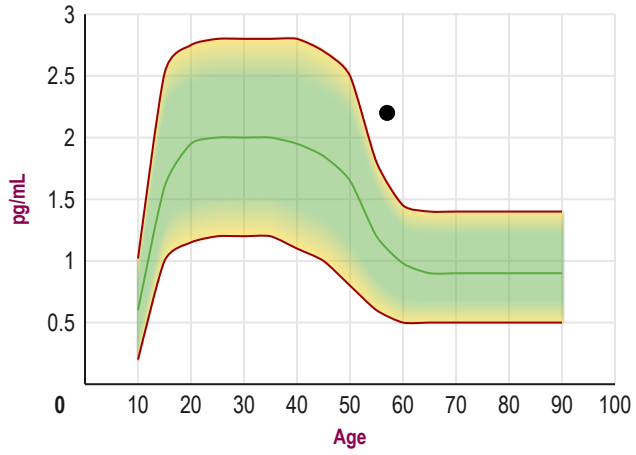
04/09/2018: 1mg oral Estradiol (compounded) (23 Hours Last Used)

Graphs

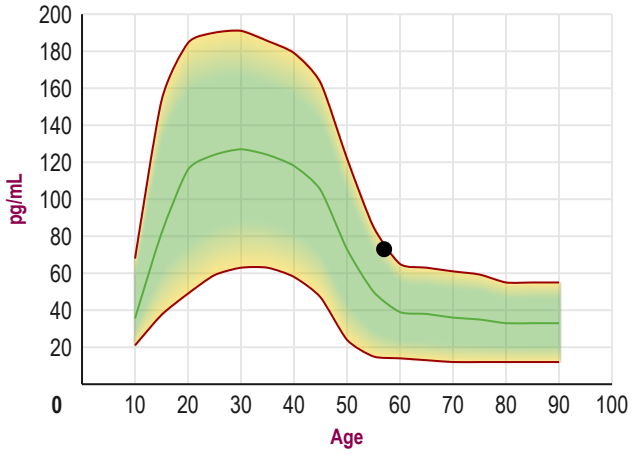
Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

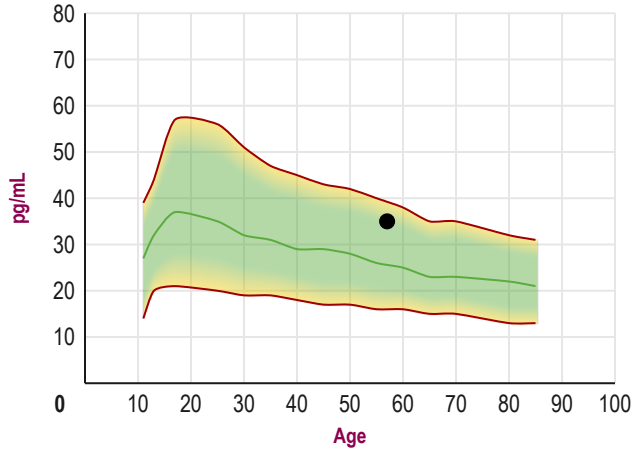
Saliva Estradiol



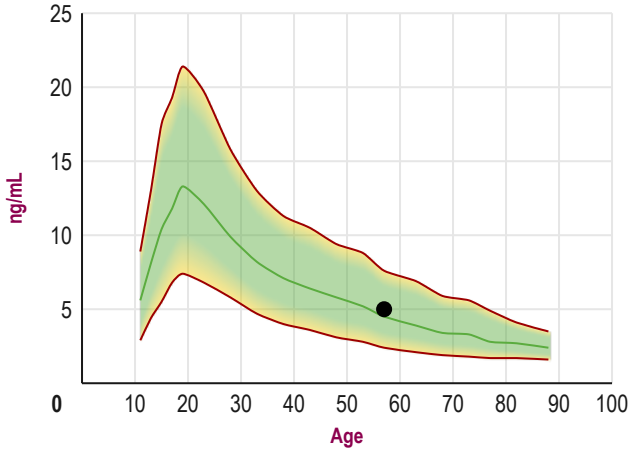
Saliva Progesterone



Saliva Testosterone



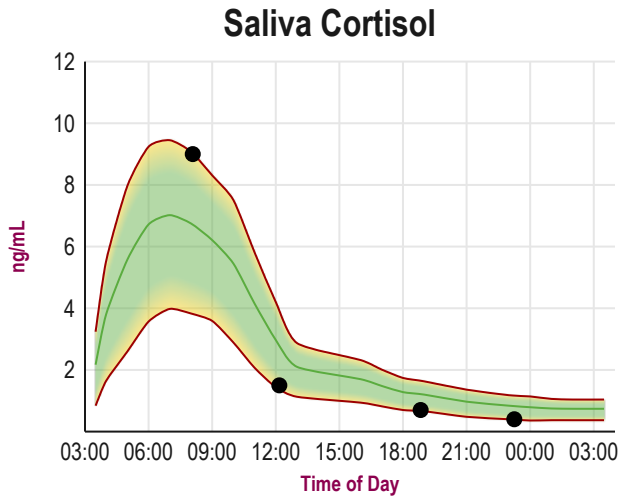
Saliva DHEAS



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

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



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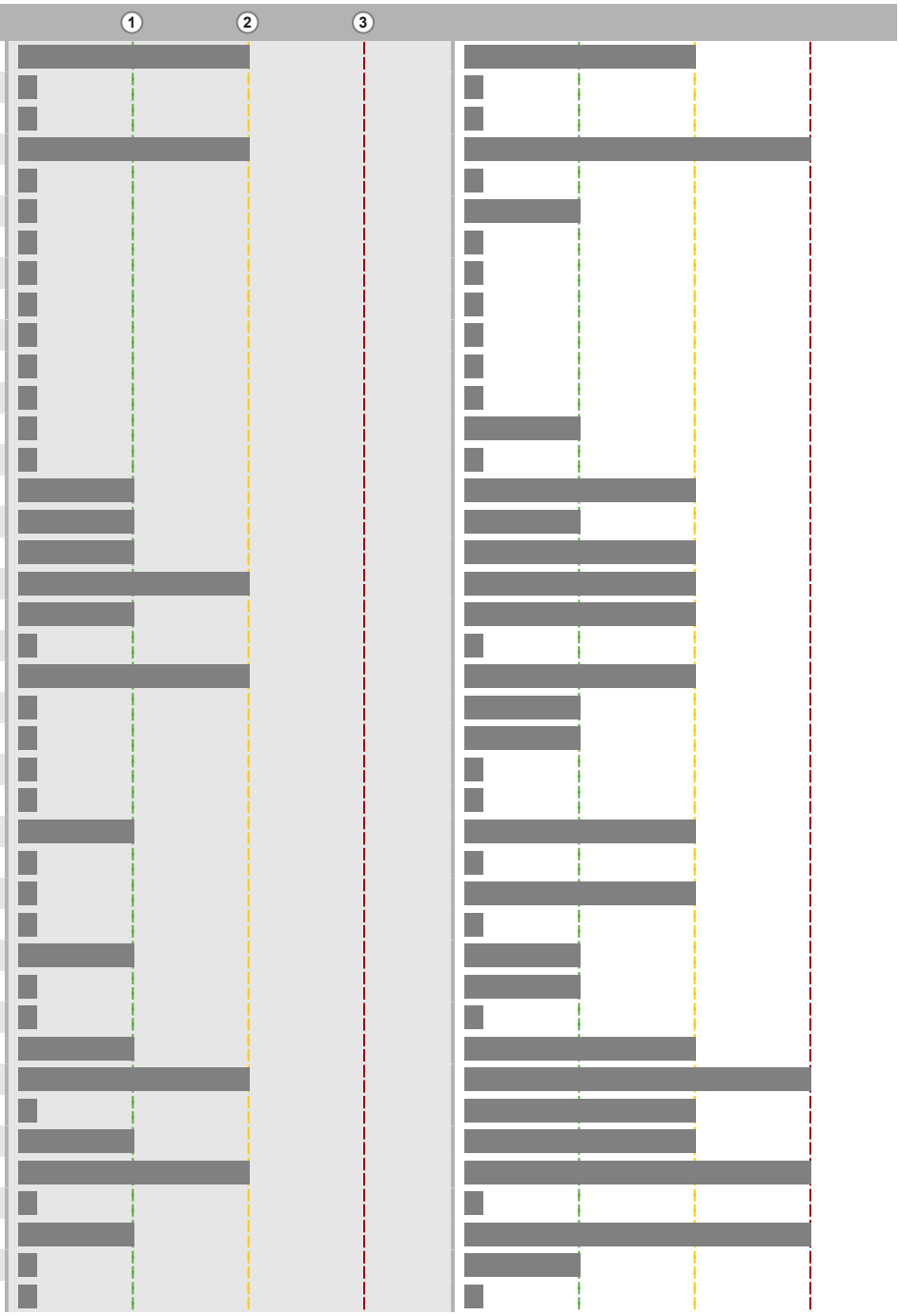
Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES	RESULTS | 07/24/18	04/09/18
Estrogen / Progesterone Deficiency	22%	40%
Estrogen Dominance / Progesterone Deficiency	20%	34%
Low Androgens (DHEA/Testosterone)	37%	58%
High Androgens (DHEA/Testosterone)	11%	12%
Low Cortisol	23%	33%
High Cortisol	29%	56%
Hypometabolism	21%	32%
Metabolic Syndrome	38%	49%

SYMPTOM CHECKLIST



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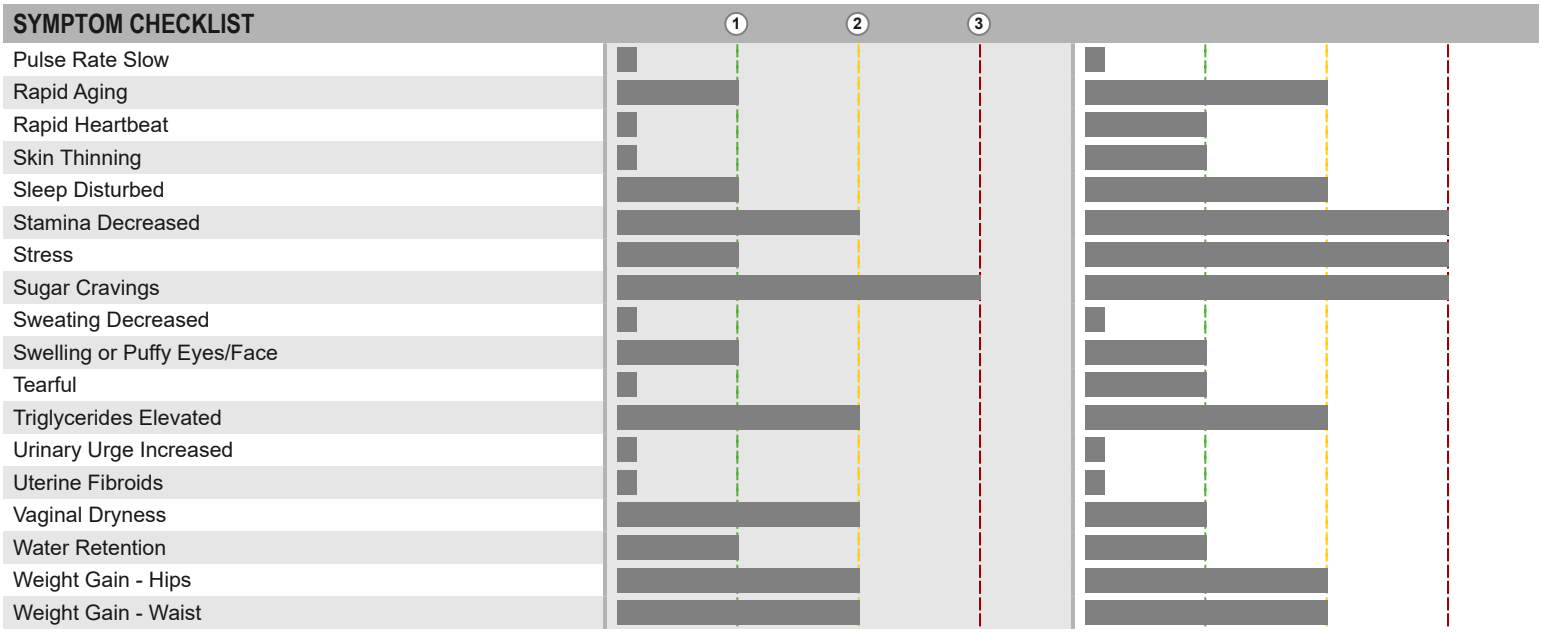

Lab Comments

Estradiol is within physiological range with topical estrogen replacement therapy. Maintaining healthy physiological estradiol levels promotes a healthy distribution of fat in hips, thighs, breasts, and subcutaneous tissues. Estrogen also supports good cholesterol ratios and enhances serotonin production, which helps regulate hunger and suppresses vasomotor symptoms (hot flashes and night sweats). For women who need to lose weight, estrogen levels may drop as weight drops, so low estrogen symptoms may appear as you achieve your weight loss goals.

Progesterone is within expected physiological (luteal) range with oral progesterone supplementation. Oral supplementation results in a more rapid increase and clearance of progesterone with levels usually within the lower limits of the observed range > 12 hrs following supplementation. Within 12-24 hr following oral progesterone therapy progesterone levels in the bloodstream and saliva have usually returned closer to baseline levels seen prior to progesterone supplementation; however, it is important to keep in mind that salivary levels depend on dosing (usually ranging from 50-300 mg), and time from last use. Oral progesterone is usually more effective when used at night just before bed because metabolites formed in the gastrointestinal tract from progesterone (allopregnanolone) help with sleep. In this case it is best to collect saliva in the morning to allow an 6-10 hr time frame from last use of progesterone. If symptoms of estrogen/progesterone imbalance are not resolved with oral progesterone therapy it would be worthwhile to consider changing dosage or mode of delivery (e.g. transdermal progesterone instead of, or in combination with oral). If symptoms of estrogen imbalance remain problematic with the oral progesterone, it would be worthwhile to consider increasing or decreasing the estrogen level (assuming greater than the optimal range of 1.3-3.3 pg/ml) or change the mode of progesterone delivery (eg. topical) to achieve an optimal Pg/E2 ratio of 100-500 (note: if estradiol is within optimal range this optimal Pg/E2 ratio is likely achieved during the first 8 hours of oral progesterone supplementation).

Testosterone is within physiological range with topical testosterone therapy. Adequate testosterone is necessary to build and maintain lean muscle mass which is directly tied to metabolic rate and calorie burning to help with weight loss. Muscle building exercise can help stimulate testosterone production and boost the metabolic rate.

DHEAS is within range with topical DHEA therapy. DHEA partners with testosterone as an anabolic hormone to maintain muscle mass, bone density, metabolic rate, overall sense of well-being, and libido. Adequate DHEA (and testosterone) contributes to increased lean muscle which boosts metabolic rate and calorie burning to help with weight loss. DHEA may also enhance insulin sensitivity and naturally increases serotonin, which helps to control satiety and appetite.

Cortisol is within high-normal range in the morning but drops precipitously to lower levels the remainder of the day. Suppression of cortisol may be due to androgen therapy (DHEA and/or testosterone) or to low adrenal reserve. In this individual a significant number of symptoms commonly associated with adrenal stressors are self reported. Under stress situations the adrenal glands normally respond by increasing cortisol output. However, when cortisol levels are within normal range under situations of excessive stress, as reported herein, this suggests they 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

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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.

Vitamin D is within/near optimal range. 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.

TSH is within optimal range with thyroid therapy. The American Association of Clinical Endocrinologists have recommended a change in the TSH range to 0.3 to 3.0 - www.aace.com. Very low TSH levels (< 0.3) may be reflective of excessive thyroid supplementation if symptoms of hyperthyrodism are/become problematic (goiter, eye changes, pretibial myxedema, nervousness, anxiety, heart palpitations or tachycardia, insomnia, tremor, frequent bowel movements, weight loss, excessive sweating, heat intolerance, oligomenorrhea/amenorrhea, increased appetite, tremors, bone loss and/or increased blood pressure). If any of these symptoms become more problematic with thryoid medication, it would be worthwhile to discuss dose reduction with your health care provider.

Fasting insulin is within normal range, however, this does not rule out insulin resistance and predisposition to diabetes if fasting glucose is elevated and symptoms/signs of insulin resistance are problematic (e.g. obesity, excessive weight gain in the waist, elevated triglycerides and HbA1C, blood sugar dysregulation, etc.)

Hemoglobin A1c (HbA1c) is within ideal normal range. HbA1c is a measure of red blood cell hemoglobin glycation. Because red blood cells have about a 120 day life span, a high HbA1c reflects mean hyperglycemia (elevated glucose) for the previous 3 months. In people without diabetes, a normal HbA1c value is somewhere between 3.5% and 5.5%. The American Diabetic Association recommends that HbA1c is normal if it is between 4% and 6%. People with diabetes have higher HbA1c values because their bodies have difficulty managing their blood sugar levels (hyperglycemia). A healthy goal for most people with diabetes is to keep HbA1c under 7% (or the goal set for you by your doctor). With persistently high levels of HbA1c, there is increased risk of developing problems such as eye disease, kidney disease, nerve damage, heart disease, and stroke.

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