TEST REPORT

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ZRT LABORATORY

 # 2018 08 01 300 B

Ordering Provider:
Getuwell Clinic

Samples Received
08/01/2018

Report Date
08/06/2018

Samples Collected
Blood Spot - 07/28/18 08:15

Patient Name: Female Blood Profile II
Patient Phone Number: 555 555 5555

Gender	Last Menses	Height	Waist
Female	07/10/2018	5 ft 6 in	27 in
DOB	**Menses Status**	**Weight**	**BMI**
5/21/1973 (45 yrs)	Pre-Menopausal - Irregular	125 lb	20.2

TEST NAME	RESULTS | 07/28/18	RANGE
Blood Spot Steroids		
Estradiol	71	43-180 pg/mL Premeno-luteal or ERT
Progesterone	12.0	3.3-22.5 ng/mL Premeno-luteal or PgRT
Ratio: Pg/E2	169	Pg/E2 (bloodspot-optimal 100-500)
Testosterone	<10 L	20-130 ng/dL Premeno-luteal or TRT
SHBG	82	15-120 nmol/L
DHEAS	47	40-290 µg/dL
Cortisol	15.6	8.5-19.8 µg/dL (morning), 3.3-8.5 (eve/night)
Blood Spot Thyroids		
Free T4*	1.4	0.7-2.5 ng/dL
Free T3	3.6	2.4-4.2 pg/mL
TSH	<0.2 L	0.5-3.0 µU/mL
TPOab*	23	0-150 IU/mL (70-150 borderline)

*<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. * For research purposes only.*

Therapies

100mg oral Levothyroxine (T4) (Pharmaceutical) (25 Hours Last Used)6.25mg oral Cytomel (T3) (Pharmaceutical) (25 Hours Last Used)

David T. Zava, Ph.D.
Laboratory Director

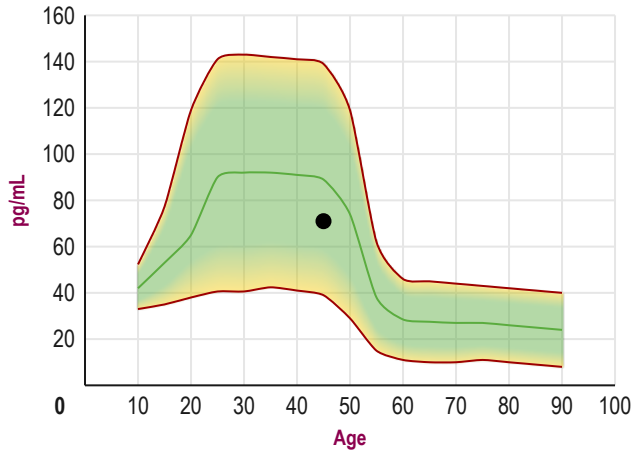
Alison McAllister, ND.
(Ordering Provider unless otherwise specified on page 1)

Graphs

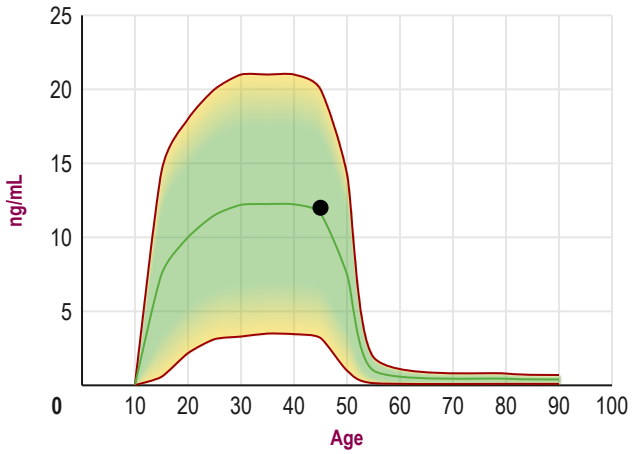
Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

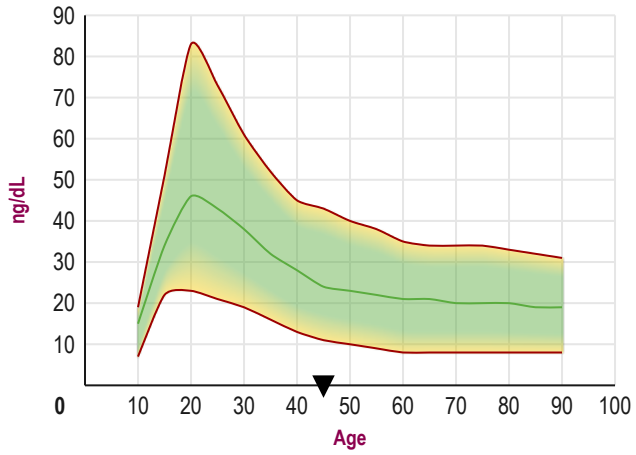
Blood Spot Estradiol



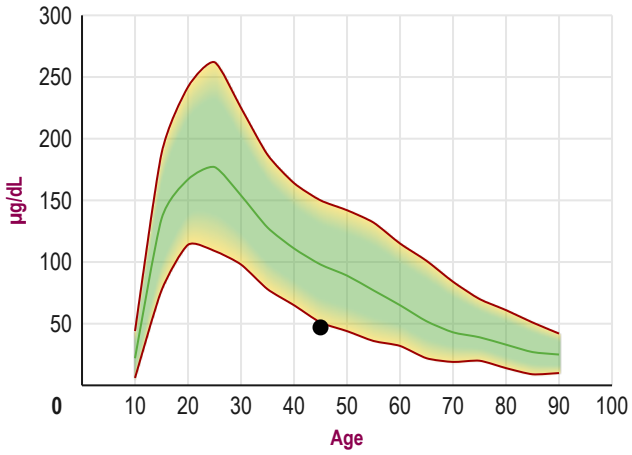
Blood Spot Progesterone



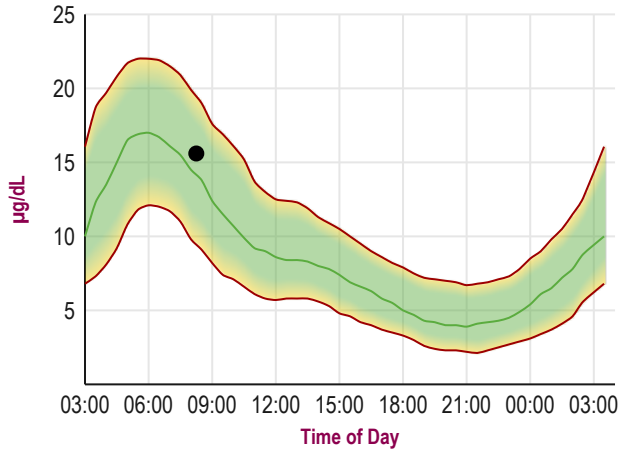
Blood Spot Testosterone



Blood Spot DHEAS



Blood Spot Cortisol



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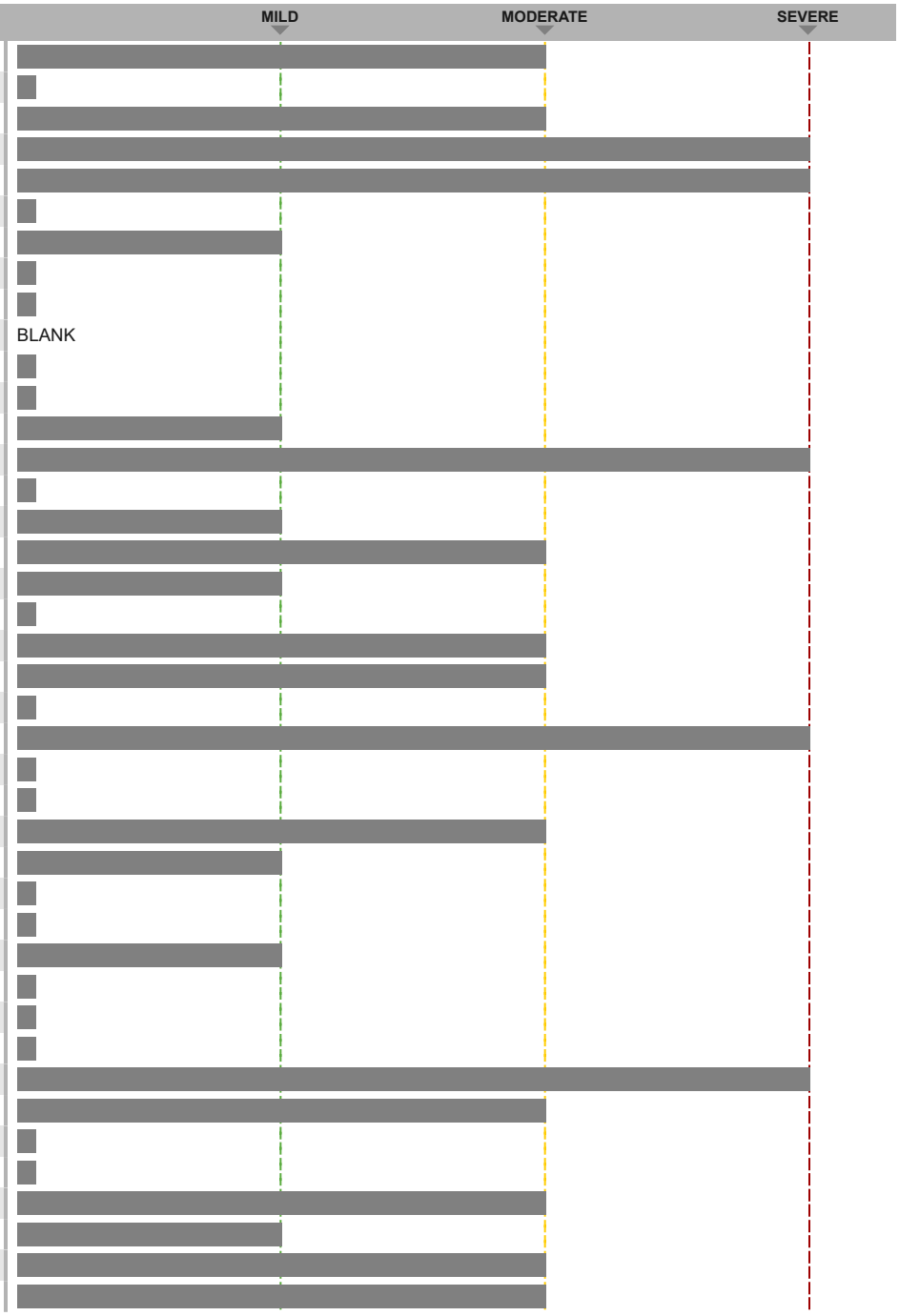
Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES	RESULTS | 07/28/18
Estrogen / Progesterone Deficiency	38%
Estrogen Dominance / Progesterone Deficiency	34%
Low Androgens (DHEA/Testosterone)	37%
High Androgens (DHEA/Testosterone)	5%
Low Cortisol	39%
High Cortisol	37%
Hypometabolism	37%
Metabolic Syndrome	22%



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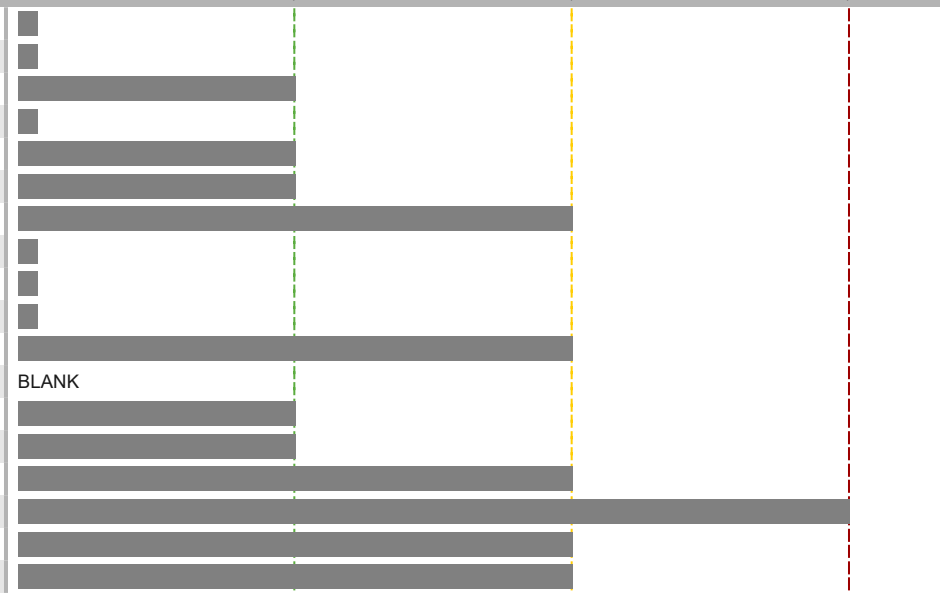
SYMPTOM CHECKLIST	MILD / MODERATE / SEVERE
Pulse Rate Slow	
Rapid Aging	
Rapid Heartbeat	
Skin Thinning	
Sleep Disturbed	
Stamina Decreased	
Stress	
Sugar Cravings	
Sweating Decreased	
Swelling or Puffy Eyes/Face	
Tearful	
Triglycerides Elevated	BLANK
Urinary Urge Increased	
Uterine Fibroids	
Vaginal Dryness	
Water Retention	
Weight Gain - Hips	
Weight Gain - Waist	



Lab Comments

Estradiol is within expected range for a premenopausal woman, however, symptoms of estrogen imbalance (deficiency and excess) are self-reported as problematic. This usually is caused by estradiol fluctuating from low to high without adequate progesterone to counterbalance and stabilize the estradiol. Estradiol often fluctuates erratically as women approach menopause, and can begin in the mid thirties, but usually does not occur until the mid forties. Problems of estrogen imbalance can also be caused by excessive stressors and release of stress hormones such as cortisol and catecholamines. Stress hormones such as norepinephrine can trigger vasomotor symptoms (hot flashes and night sweats) even when estradiol is within normal or high range (note that stress is self-reported as moderate/severe). Stress reduction, gentle exercise, calming herbs, and natural progesterone have been shown to help with symptoms of estrogen imbalance.

Progesterone (blood spot) is within expected higher range (10-30 ng/ml) for a premenopausal woman during mid-luteal phase of the menstrual cycle. Although estradiol and progesterone appear to be well balanced at the time of testing, overall symptoms of estrogen imbalance persist. This may be due to erratic fluctuations in the estrogen level during other menstrual cycles (more common as menopause approaches) or to other hormonal imbalances associated with a symptom profile similar to estrogen imbalance (e.g. high cortisol or low thyroid). Please note that high cortisol and low thyroid symptoms are self reported as problematic. If cortisol and/or thyroid hormones (T4, T3, TSH, TPO) consider adrenal and/or thyroid therapy.

Testosterone (blood spot) is low. In females, testosterone level is highest during youth and drops steadily with age. About half of the testosterone is produced by the ovaries and their removal (oophorectomy) results in a precipitous drop in circulating testosterone and an increase in symptoms of androgen deficiency. 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. Low serum testosterone has been correlated with low bone mass in both perimenopausal and postmenopausal women (Oronzo et al. Eur J Epidemiology 16: 907-912, 2000; Slemenda et al. J Clin Invest 97: 14-21, 1996). Low androgens have also been correlated with a higher prevalence of autoimmune problems such as lupus and rheumatoid arthritis (Masi AT. Clin Exp Rheumatol 1995; 13(2):227-240). Because the blood testosterone level is low, it would be worthwhile to evaluate bone density periodically (yearly) and to consider androgen supplementation to prevent long term health issues, particularly osteoporosis and increased fracture risk.

SHBG (Sex Hormone Binding Globulin) is within the high-normal range. SHBG is a protein produced by the liver and released into the bloodstream in response to inceasing levels of estrogens. SHBG is a relative index of overall exposure to any form of estrogens (endogenous, pharmaceutical-ERT, xeno-estrogens-pollutants). As the estrogen levels increase there is a proportional increase in SHBG in normal individuals. Excess thyroid medication, or hyperthyrodism, is also associated with elevated SHBG. High insulin (insulin resistance), high androgens, and high glucocorticoids (cortisol) lower SHBG, all of which increase the bioavailability of estradiol and the likelihood of estrogen dominance symptoms. In the circulation, SHBG binds about 37 percent of estradiol, while the remainder binds to albumin; less estrone (16%) and very little estriol (1%) bind to SHBG. Many of the synthetic estrogens, such as ethinyl-estradiol used in oral contraceptives show little binding affinity for SHBG, rendering them more bioavailable and potent than estradiol.

DHEAS (blood spot) is low-normal range, suggesting low adrenal reserves. Low DHEAS is often associated with low testosterone (DHEA is a testosterone precursor) and symptoms of androgen deficiency (fatigue, depression, vaginal dryness, low libido, loss of muscle mass, bone loss, memory lapses). Self-reported symptoms indicate androgen deficiency, consistent with low DHEAS. Consider DHEA therapy if cortisol is within normal range. DHEA therapy can cause a transient suppression of cortisol and exacerbate symptoms of cortisol deficiency if cortisol is low.

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Morning cortisol (blood spot) is within mid-range. If symptoms of adrenal imbalance are problematic consider testing cortisol in saliva 4x throughout the day to determine if levels remain within normal range. If salivary cortisol levels drop following the morning sample this suggests low adrenal reserve and need for adrenal support.

Thyroid hormones (free T4, free T3) and thyroid peroxidase antibodies (TPO) are within normal ranges with thyroid therapy (T4+T3). TSH is lower than detectable range, which reflects the negative feedback effect of excessive thyroid therapy (T3) to the hypothalamic-pituitary axis. Although T4 and T3 are within normal ranges with thyroid therapy, symptoms of thyroid deficiency persist, some of which include the following: feeling cold, low stamina, fatigue mostly in the evening, depression, low libido, breaking and brittle nails, hair dry and brittle, foggy thinking, and constipation. Normal levels of T4 and T3 with thyroid therapy suggests that T3 is not functioning normally at the tissue level (i.e., functional thyroid deficiency) and is not effectively activating cellular thyroid receptors. Stress is listed as moderate/severe on the requisition form. This often is associated with high cortisol or catecholamines (norepinephrine), which can desensitize target tissues to the actions of T3. Poor response of target tissues to normal circulating levels of T3 may also be caused by heavy metals (particularly mercury), and/or other steroid hormone imbalances (high estradiol, low progesterone, low testosterone). If steroid imbalances are detected by saliva or blood testing, they should be corrected to facilitate thyroid hormone action. Also, since normal cortisol levels and circadian patterns (i.e. higher cortisol in the morning and lower at night) are required for normal thyroid function (cortisol-glucocorticoid receptor and T3-thyroid receptor form dimers that synergistically activate thyroid/cortisol genes) it is worthwhile to evaluate the circadian pattern of cortisol with saliva or dried urine testing. Thyroid therapy in individuals with low cortisol levels, particularly in the morning when cortisol should peak (flat cortisol awakening response), could further exacerbate thyroid deficiency symptoms in the presence of adequate circulating levels of T4 and T3.

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