# **TEST REPORT**

# 2018 09 28 333 SB

Ordering Provider: Jane Getuwell, DO Samples Received 09/28/2018

Report Date 10/04/2018 **Samples Collected** 

Saliva - 09/22/18 09:34 Saliva - 09/22/18 15:06 Saliva - 09/22/18 18:50 Saliva - 09/25/18 00:45 Blood Spot - 09/09/18 12:49 Blood Spot - 09/22/18 09:46

Patient Name: Fertility Profile

Patient Phone Number: 555 555 555

<b>Gender</b> Female		Height 5 ft 4 in	<b>Waist</b> 30 in
<b>DOB</b> 5/17/1980 (38 yrs)		<b>Neight</b> 131 lb	<b>BMI</b> 22.5
TEST NAME	RESULTS   09/09/18	RA	NGE
Salivary Steroids			
Cortisol	13.2	H 3.7	-9.5 ng/mL (morning)
Cortisol	1.6	1.2	-3.0 ng/mL (noon)
Cortisol	2.6	<b>H</b> 0.6	-1.9 ng/mL (evening)
Cortisol	1	0.4	-1.0 ng/mL (night)
<b>Blood Spot Steroids</b>			
Estradiol	60	43-	180 pg/mL Premeno-luteal or ERT
Progesterone	2.4 L	3.3	-22.5 ng/mL Premeno-luteal or PgRT
Ratio: Pg/E2	40 L	Pg/	(E2 (bloodspot-optimal 100-500)
Testosterone	34	20-	130 ng/dL Premeno-luteal or TRT
SHBG	88	15-	120 nmol/L
DHEAS	58	40-	290 μg/dL
Blood Spot			
LH	11.8	H 1.6	-9.3 U/L Premenopausal-follicular
FSH	14.4	H 2.4	-9.3 U/L Premenopausal-follicular
Blood Spot Thyroids			
Free T4*	1.1	0.7	-2.5 ng/dL
Free T3	3.7	2.4	-4.2 pg/mL
TSH	1.8	0.5	-3.0 μU/mL
TPOab*	10	0-1	50 IU/mL (70-150 borderline)

**TEST NAME** 

**RESULTS | 09/09/18** 

**RANGE** 

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.

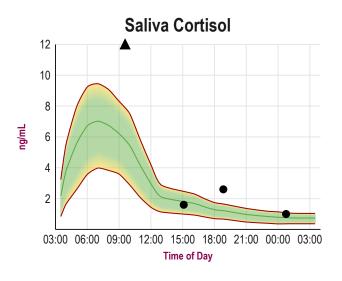
#### **Therapies**

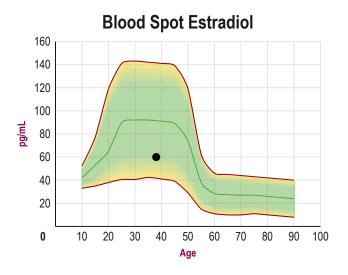
Desvenlafaxine Prozac Ziprasidone Lamotragine (Lamictal)

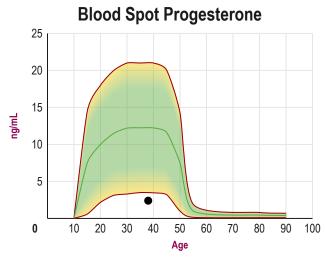
#### **Graphs**

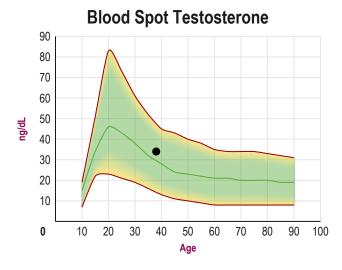
**Disclaimer:** Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

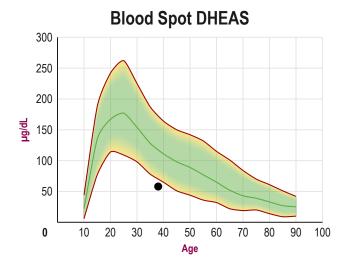
— Average ▼▲ Off Graph





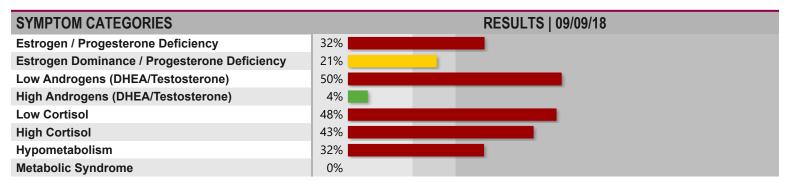


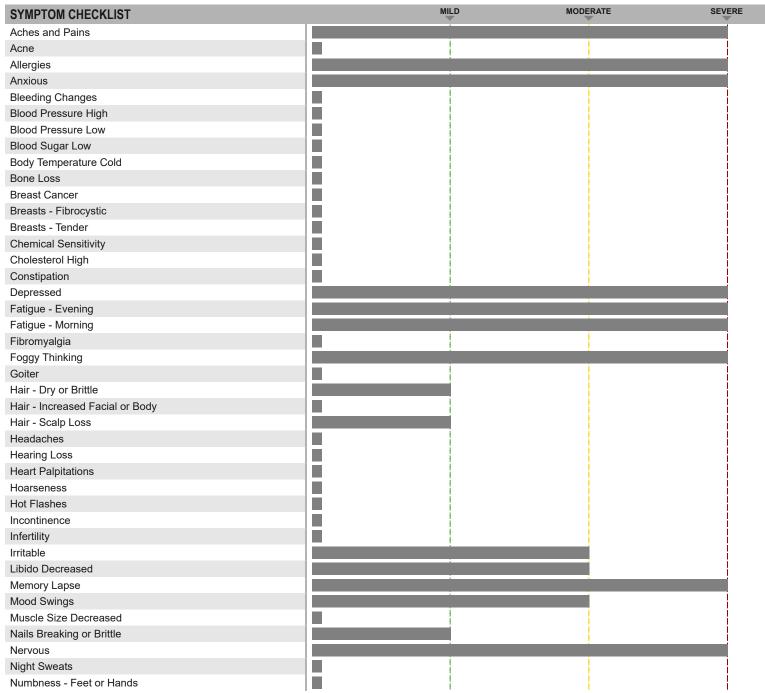


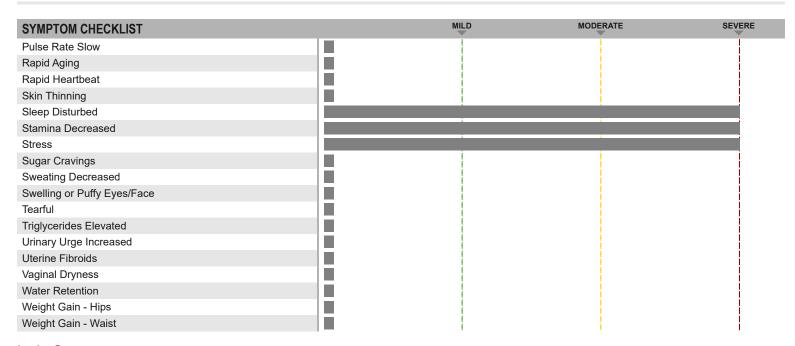


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**Disclaimer:** Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.







### Lab Comments

Infertility is a complicated syndrome involving hormonal and physical dysfunction for both men and women that cannot be fully assessed by ZRT testing alone. The number of months a couple has been trying may determine the amount of warranted workup. On average 1 year of trying for a woman under the age of 35 is suggested and 6 months for women over the age of 35 is recommended. Additional evaluation may include physical disorders including: assessing whether the fallopian tubes are open, presence of uterine fibroids or uterine polyps, uterine septum or ovarian cysts. Men may be assessed for sperm quality and quantity. In addition, immunological, genetic or blood clotting issues may also be a factor in infertility for couples not achieving pregnancy for unknown reasons.

Salivary cortisol is fluctuating from high to normal throughout the day suggesting stressors causing HPA axis dysfunction and/or poor regulation of blood sugar levels (dysglycemia-common in individuals with insulin resistance/metabolic syndrome). Acute situational stressors (e.g., anxiety over unresolved situations, travel, work-related problems, wedding, holiday season, etc.) can raise cortisol levels, which is a normal response to the stressor. Symptoms commonly associated with high cortisol include sugar craving, fatigue, sleep disturbances, anxiety, and depression. If cortisol remains elevated throughout the day (usually associated with a high night cortisol) and over a prolonged period of time (months/years) excessive breakdown of normal tissues (muscle wasting, thinning of skin, bone loss) and immune suppression can eventually result. Adequate sleep, gentle exercise, naps, meditation, proper diet (adequate protein), natural progesterone, adrenal extracts, herbs such as licorice, 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 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 within mid-normal observed range for a premenopausal woman. Although estradiol is within observed range, it is not well balanced with progesterone (low progesterone/estradiol ratio). Estradiol at this level during the luteal phase of the menstrual cycle should be well balanced with progesterone (ideal progesterone/estradiol ratio 100-500) to help prevent estrogen dominance.

Progesterone (blood spot) is lower than observed range for a premenopausal woman during luteal phase of the menstrual cycle. Assuming the blood was collected during mid-luteal phase of the menstrual cycle (days 19-22 of a 28 day cycle), a low progesterone may indicate anovulation (no egg produced), luteal insufficiency (egg produced but poor production of progesterone by the corpus luteum), or use of synthetic hormones (e.g. hormonal contraceptives-none indicated) that suppress endogenous ovarian synthesis of progesterone. Because symptoms of estrogen deficiency are self-reported as problematic, consider creating a more balanced progesterone/estradiol ratio (ideal ratio 100-500) with progesterone and/or estrogen/progesterone supplementation (assuming no contraindications).

Testosterone (blood spot) is within normal range but symptoms of androgen deficiency persist. This may be due to other hormonal imbalances with symptom profiles similar to low androgens, which include low thyroid or low cortisol caused by excessive stressors. Note that symptoms of both low thyroid and low cortisol are self-reported as problematic.

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

## TEST REPORT | Comments continued

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.

LH is higher than expected range for a premenopausal woman. High LH could indicate cystic ovaries (usually associated with high testosterone and symptoms of androgen excess-loss of scalp hair, facial/body hair, acne) or premature ovarian failure.

FSH was collected on day 4 and FSH level is greater than 12. The day 4 FSH represents the ovarian reserve, or, the number of eggs (quantity) available for fertilization. Ideal FSH level are optimal if less than 9, but are considered satisfactory if less than 12. FSH does not reflect egg quality or the health of those eggs. Thus, it's possible to have low quantity, but high quality. Because of this, a high FSH does not say that pregnancy is impossible, but it does suggest that it may be less likely. Because FSH fluctuates from cycle to cycle, two tests should be done on two different cycles. The highest, or worse value, is considered the most accurate at determining egg quantity (i.e. number). A day 3 FSH level greater than 30 represents a postmenopausal level and generally suggests that pregnancy is unlikely to happen without medical assistance. A day 3 FSH in combination with the age of the woman is valuable for making decisions regarding fertility options. IVF or egg donor IVF may be suggested for women with consistently high FSH values. For more information, see For more information about fertility see www.resolve.org and http://familybuilding.resolve.org/site/DocServer/lf You Have A Day 3 Elevated FSH Level.pdf?docID=454

Thyroid hormones (free T4, free T3, and TSH) and thyroid peroxidase antibodies (TPO) are within normal ranges; however, symptoms of thyroid deficiency persist. This suggests that T3 is not functioning normally at the tissue level (i.e., functional thyroid deficiency). 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 before attempting thyroid therapy. Full evaluation of adrenal cortisol production throughout the day should be performed before attempting thyroid therapy since normal cortisol levels are required for normal thyroid function. Thyroid therapy in individuals with low cortisol levels could result in exacerbation of thyroid deficiency symptoms.