

Test Results



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2016 04 13 001 SB



Ordering Provider:

John Smith MD
8605 SW Creekside Pl
Beaverton, OR 97008

Samples Arrived: 04/13/2016
Date Closed: 04/19/2016

Samples Collected:
Saliva: 04/04/16 07:00
Saliva: 04/04/16 12:30
Saliva: 04/04/16 19:00
Saliva: 04/04/16 23:00
Blood Spot: 04/04/16 07:30
Blood Spot: 03/18/16 16:16

Ina Furtal
123 E Fake St
Aloha, OR 97007

Menses Status: Pre-Menopausal
Gender: Female

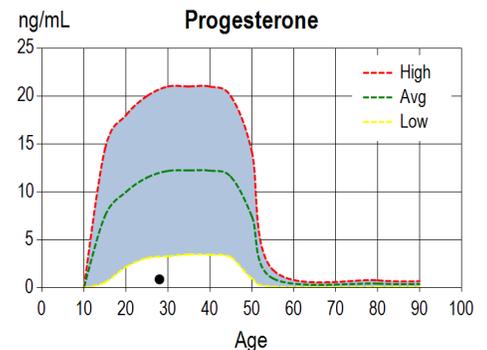
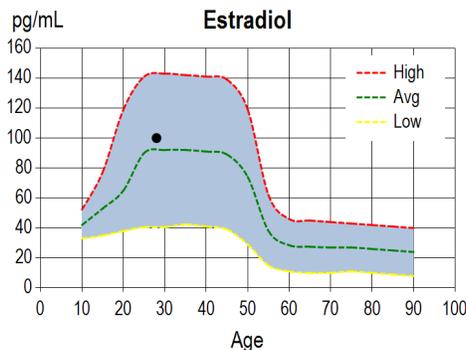
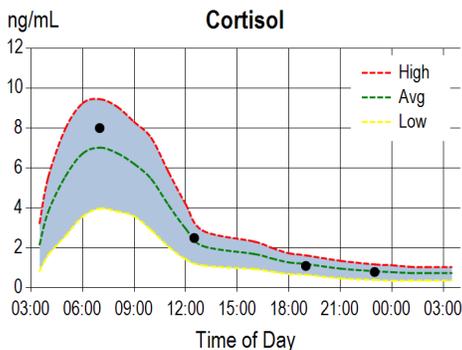
Last Menses: 03/16/2016
DOB: 1/15/1988 (28 yrs) Patient Ph#: 555 555 5555

BMI: 24.1
Height: 5 ft 5 in
Weight: 145 lb
Waist: Unspecified

Test Name	Result	Units	Range
Cortisol (Saliva)	8	ng/mL	3.7-9.5 (morning)
Cortisol (Saliva)	2.5	ng/mL	1.2-3.0 (noon)
Cortisol (Saliva)	1.1	ng/mL	0.6-1.9 (evening)
Cortisol (Saliva)	0.8	ng/mL	0.4-1.0 (night)
Estradiol (Blood Spot)	100	pg/mL	43-180 Premeno-luteal or ERT
Progesterone (Blood Spot)	0.9	L ng/mL	3.3-22.5 Premeno-luteal or PgRT
Ratio: Pg/E2 (Blood Spot)	9	L	Pg/E2 (bloodspot-optimal 100-500)
Testosterone (Blood Spot)	55	ng/dL	20-130 Premeno-luteal or TRT
DHEAS (Blood Spot)	125	µg/dL	40-290
SHBG (Blood Spot)	61	nmol/L	15-120
Free T4 (Blood Spot)*	0.9	ng/dL	0.7-2.5
Free T3 (Blood Spot)	2.6	pg/mL	2.5-6.5
TSH (Blood Spot)	5.6	H µU/mL	0.5-3.0
TPOab (Blood Spot)*	22	IU/mL	0-150 (70-150 borderline)
LH (Blood Spot)	5	U/L	1.6-9.3 Premenopausal-follicular
FSH (Blood Spot)	6.2	U/L	2.4-9.3 Premenopausal-follicular

<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.
*For research purposes only.

Therapies
None

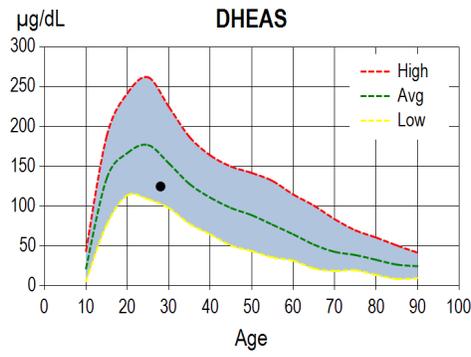
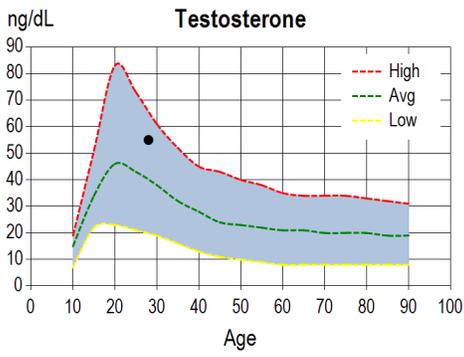


The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practitioner for diagnosis and treatment.

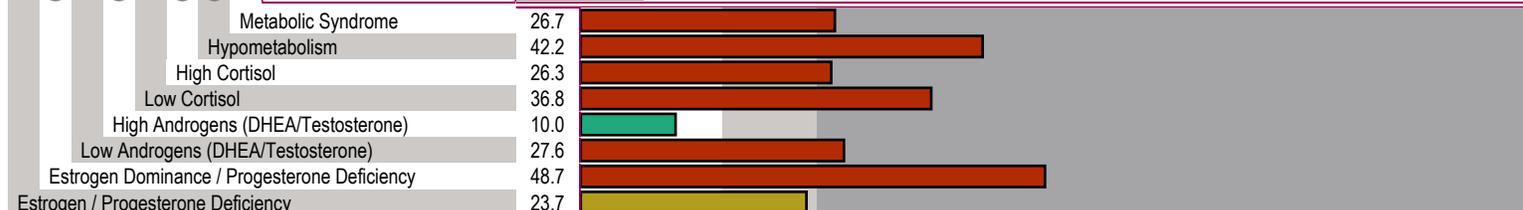
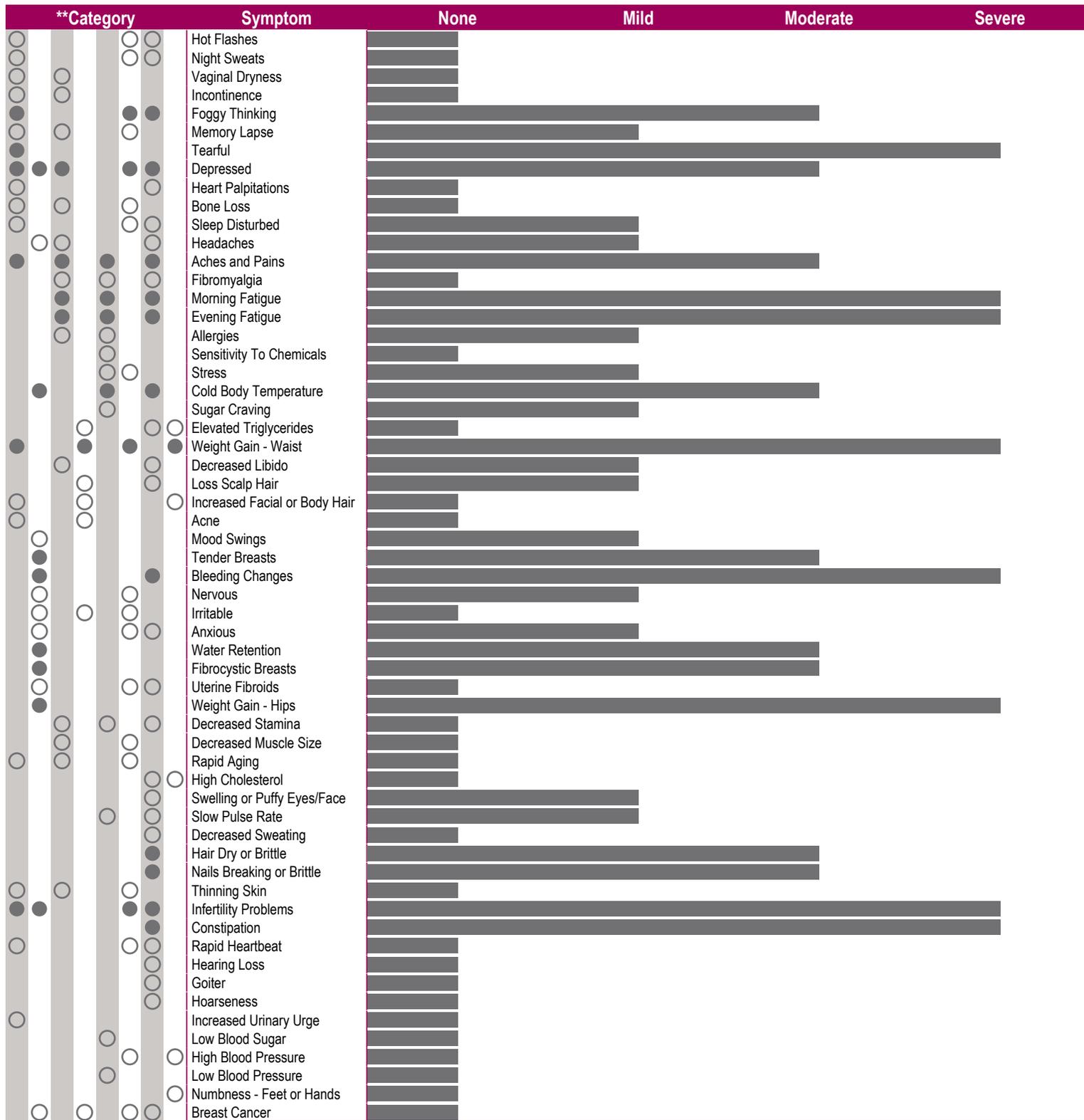
David T. Zava
David T. Zava, Ph.D.
(Laboratory Director)

Alison McAllister, ND
Alison McAllister, ND
(Ordering Provider unless otherwise specified on pg1)

CLIA Lic # 38D0960950
Composed by: 1165434857 at 4/19/2016 2:36:01 PM



Disclaimer: Graphs represent hormone levels in testers not using hormone supplementation and are provided for informational purposes only. Please see comments for additional information if results are higher or lower than expected.



**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

Cortisol is normal throughout the day; however, a significant number of symptoms commonly associated with low and/or high cortisol are reported. Under stress situations the adrenal glands respond by increasing cortisol output. However, when cortisol levels are within normal range under situations of excessive stress, as reported herein, this suggests that the adrenal glands may be overworking to keep up with the demands of the stressors, which could eventually lead to adrenal exhaustion. Adrenal exhaustion 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 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 is within the expected luteal reference range for a premenopausal woman; however, the estradiol is not well balanced with progesterone, which is lower than optimal (10-30 ng/ml) for luteal phase. This pattern is common in women who fail to ovulate (anovulatory) and those with luteal phase insufficiency (ovulate but do not produce enough progesterone to prepare the uterine lining for receiving the fertilized egg or to sustain pregnancy should this occur). Normal luteal estradiol levels without adequate progesterone often leads to symptoms of estrogen dominance, as self-reported by this individual. Unopposed estrogen (i.e. normal estradiol/low progesterone) is also commonly associated with symptoms of thyroid deficiency. When estradiol is within mid to high normal range in the luteal phase of the menstrual cycle it should be well balanced with progesterone (ideal progesterone/estradiol ratio: 100 500). Luteal insufficiency is a common cause of infertility and may result from aging (more common in women starting about age 35), excessive exposure to stressors (emotional, physical, chemical-environmental, pathogenic), other hormonal imbalances (e.g. high cortisol, low thyroid), poor diet and sleep habits, and lack of sufficient exercise. Improvement in diet and lifestyle, as well as stress reduction, and natural progesterone therapy often help treat this condition, which will increase chances for a successful pregnancy.

Testosterone (blood spot) is within normal range for a premenopausal woman. 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.

DHEAS (blood spot) is within mid-normal range.

SHBG is within normal range. 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.

Thyroid hormones (free T4 and free T3, are within normal reference ranges but low-normal. TSH is elevated and Thyroid Peroxidase Antibodies are within normal reference range. This hormone pattern, in combination with some of the self-reported symptoms/signs of thyroid deficiency (e.g. feeling cold, fatigue, low stamina, loss of scalp hair, brittle hair and finger nails, constipation, infertility) is consistent with subclinical hypothyroidism. This condition may be caused by lowered bioavailability of the active thyroid hormones (T4 and T3) to target tissues or desensitization of the thyroid target tissues from heavy metal exposure or excessive levels of cortisol or catecholamines (norepinephrine). Excessive estradiol, unopposed by progesterone, as seen in this individual can result in high hepatic production of Thyroid Binding Globulin (TBG), which sequesters thyroid hormones (T4 and T3) in the bloodstream, reducing their bioavailability. For an excellent review on the intricate interplay of thyroid-, adrenal-, and sex-hormones please see the following: www.endotext.org/adrenal. Some experts argue that TSH is the best marker of thyroid activity in the body and that women with symptoms of thyroid disease will have problems getting pregnant until their TSH levels are in the 1-2 uU/ml range (see: thyroid.about.com/library/weekly/aa050199.htm). Based on this individual's TSH value of > 2.0, and a significant number of signs/symptoms indicating hypothyroidism, thyroid therapy should be considered if other measures (diet, exercise, stress reduction, balancing sex hormones) are unsuccessful in achieving a pregnancy.

LH and FSH are within range for a premenopausal woman.