Test Results

ZRT LABORATORY
8605 SW Creekside Place
Beaverton, OR 97008
Phone: 503-466-2445 Fax: 503-466-1636
info@zrtlab.com www.zrtlab.com

2012 07 09 001 SB

Samples Arrived: 07/09/2012
Date Closed: 07/12/2012

Samples Collected:
Saliva: 07/04/12 09:00
Saliva: 07/04/12 13:30
Saliva: 07/04/12 18:30
Saliva: 07/04/12 22:00
Blood Spot: 07/05/12 06:30

ZRT Laboratory

Mary Hysterectomy

BMI: 25.8
Height: 68 in
Weight: 170 lb
Waist: 34 in

Menses Status: Hysterectomy (ovaries removed)
Gender: Female
Last Menses: Unspecified
DOB: 2/25/1967 (45 yrs)
Patient Ph#: 555 555 5555

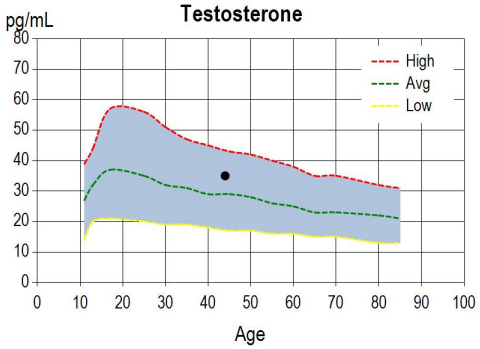
Test Name	04/09/2011		Current		Units	Range
Estradiol (saliva)	<0.5 (1)	L	**1.5 (2)**		pg/mL	(1) 0.5-1.7 Postmenopausal (optimal 1.3-1.7) (2) 0.8-12 Estrogen Replacement (optimal 1.3-3.3)
Progesterone (saliva)	10 (1)	L	**100 (2)**		pg/mL	(1) 12-100 Postmenopausal (2) 30-300 Oral Progesterone (100-300 mg)
Ratio: Pg/E2 (saliva)	25	L	**67**	**L**		Optimal: 100-500 when E2 1.3-3.3 pg/mL
Testosterone (saliva)	5	L	**35**		pg/mL	16-55 (Age Dependent)
DHEAS (saliva)	2.2		**8.2**		ng/mL	2-23 (Age Dependent)
Cortisol (saliva)	3.5	L	**7.2**		ng/mL	3.7-9.5 (morning)
Cortisol (saliva)	1.2		**2.8**		ng/mL	1.2-3.0 (noon)
Cortisol (saliva)	0.3 (1)	L	**1.4 (2)**		ng/mL	(1) 0.4-1.0 (night) (2) 0.6-1.9 (evening)
Cortisol (saliva)	0.3	L	**0.7**		ng/mL	0.4-1.0 (night)
Free T4 (blood spot)	0.9		**1.2**		ng/dL	0.7-2.5
Free T3 (blood spot)	2.2	L	**2.5**		pg/mL	2.5-6.5
TSH (blood spot)	6	H	**1.3**		µU/mL	0.5-3.0
TPO (blood spot)*	350	H	**100**		IU/mL	0-150 (70-150 borderline)

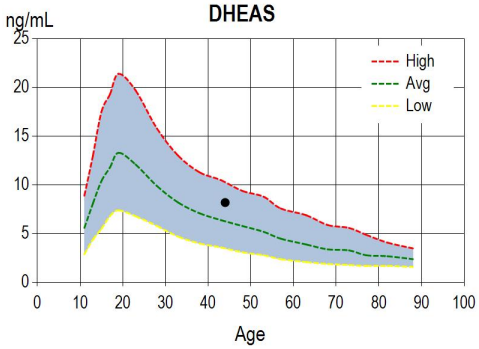
**For research purposes only.*

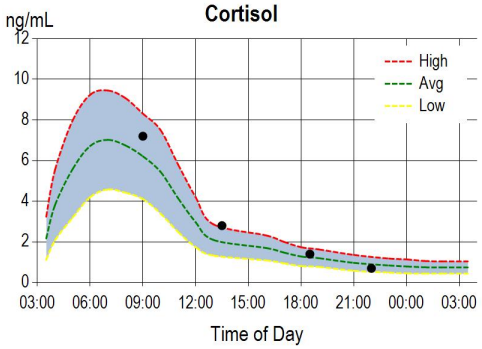
Therapies

07/04/2012: 15mg oral DHEA (compounded) (1 Days Last used); 200mg oral Progesterone (compounded) (1 Days Last used); 0.1mg oral Synthroid (T4) (Pharmaceutical) (1 Days Last used); 0.25mg topical Testosterone (compounded) (1 Days Last used); 0.05mg transdermal (Patch) Vivelle (estradiol) (Pharmaceutical) (1 Days Last used)

04/09/2011: None







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

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Composed by: 1163726587 at 12/11/2013 11:46:43 AM

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.

Test Name	Women
Estradiol (saliva) - pg/mL	0.5-1.7 Postmenopausal (optimal 1.3-1.7); 1.3-3.3 Premenopausal (Luteal); 0.8-12 Estrogen Replacement (optimal 1.3-3.3); 0.5-2.2 (Synthetic HRT, Contraceptive); 0.5-1.7 Premenopausal (follicular)
Progesterone (saliva) - pg/mL	12-100 Postmenopausal; 12-100 Premenopausal (Follicular); 75-270 Premenopausal (Luteal); 30-300 Oral Progesterone (100-300 mg); 200-3000 Topical, Troche, Vaginal Pg (10-30 mg); 10-53 Synthetic Progestins (HRT, Contraceptive)
Ratio: Pg/E2 (saliva)	Optimal: 100-500 when E2 1.3-3.3 pg/ml
Testosterone (saliva) - pg/mL	16-55 (Age Dependent)
DHEAS (saliva) - ng/mL	2-23 (Age Dependent)
Cortisol (saliva) - ng/mL	3.7-9.5 (morning); 1.2-3.0 (noon); 0.6-1.9 (evening); 0.4-1.0 (night)
Free T4 (blood spot) - ng/dL	0.7-2.5
Free T3 (blood spot) - pg/mL	2.5-6.5
TSH (blood spot) - µU/mL	0.5-3.0
TPO (blood spot) - IU/mL	0-150 (70-150 borderline)

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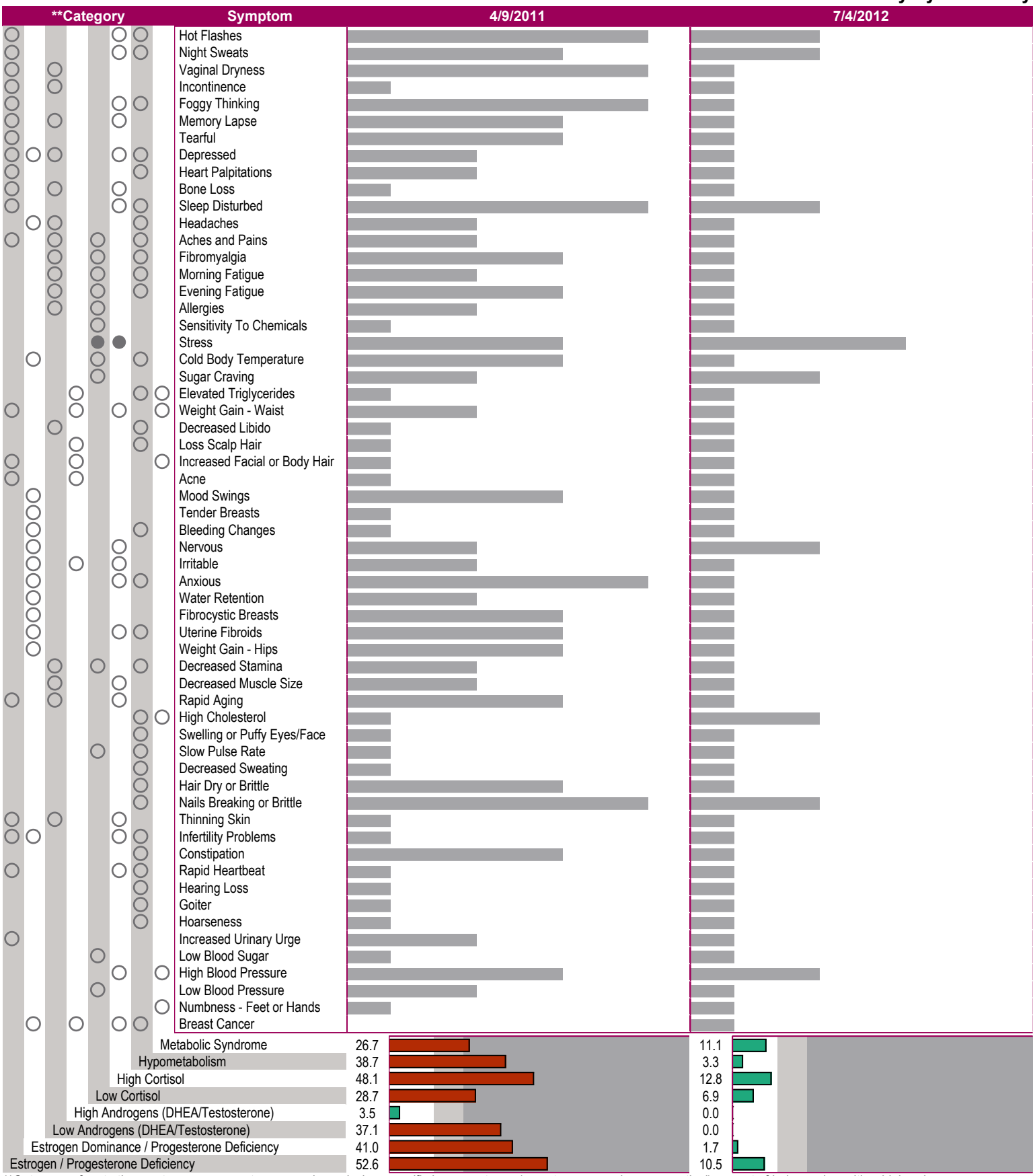

***Category refers to the most common symptoms experienced when specific hormone types (eg estrogens, androgens, cortisol) are out of balance, i.e., either high or low.*

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Lab Comments

Estradiol is within normal range with supplementation and symptoms are not noted.

Progesterone is within expected range with oral progesterone supplementation. Oral supplementation results in a more rapid clearance of progesterone with levels usually within the lower limits of the observed range > 12 hrs following supplementation. Within 12-24 hr progesterone levels have usually returned to baseline level seen prior to progesterone supplementation. 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 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).

DHEAS is within the mid observed range following DHEA therapy. DHEAS is highest during the late teens to early twenties (10-20 ng/ml) and drops steadily with age to the lower end of range by age 70-80 (2-9 ng/ml). Mid-life DHEAS levels in both males and females are usually in the range of 5-8 ng/ml. Higher than normal age-range DHEAS levels are common in well trained athletes and individuals supplementing with DHEA or adrenal adaptogens that stimulate adrenal production of DHEA. High DHEAS may be associated with high androgen symptoms (loss of scalp hair, increased facial/body hair, acne) when the DHEA is converted to testosterone and dihydrotestosterone directly in the pilosebaceous gland of the skin.

Testosterone is within range with supplementation and symptoms of androgen imbalance are minimal.

Cortisol is within normal range throughout the day and symptoms of cortisol imbalance are minimal.

Free T4 and Free T3 are within range for supplementation.

TSH is within normal range with supplementation suggesting that supplementation is within the ideal range. If symptoms are still noted, it may be due to the elevated TPO antibodies.

Thyroid peroxidase (TPO) antibodies are borderline positive, suggesting a possible evolving issue with Hashimoto's autoimmune thyroiditis. If symptoms of thyroid dysfunction become more problematic it would be worthwhile to recheck TPO levels. Antibodies to this enzyme may cause an increase in autoimmune dysfunction around the thyroid causing an increase in inflammatory cytokines, increased T cells, and NK cell function. The autoimmune reaction to the thyroid tissue results in destruction of the thyroid cells with consequent release of high levels of thyroid hormones (T4 and to a lesser extent T3), which results in a hyperthyroid state. Continued destruction of the thyroid gland results in fibrosis and eventual depletion of the thyroid hormone, thus causing a hypothyroid state. Clinical studies show that selenium supplementation is helpful in decreasing TPO antibody levels and thus helps prevent autoimmune destruction of the thyroid gland (Duntas et al. Eur J Endocrinology 148: 389-393, 2003).

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