Test Results

Menopausal Status: **Pre-Menopausal - Irregular**

Gender: **Female**

Age: **53**

Client Phone:

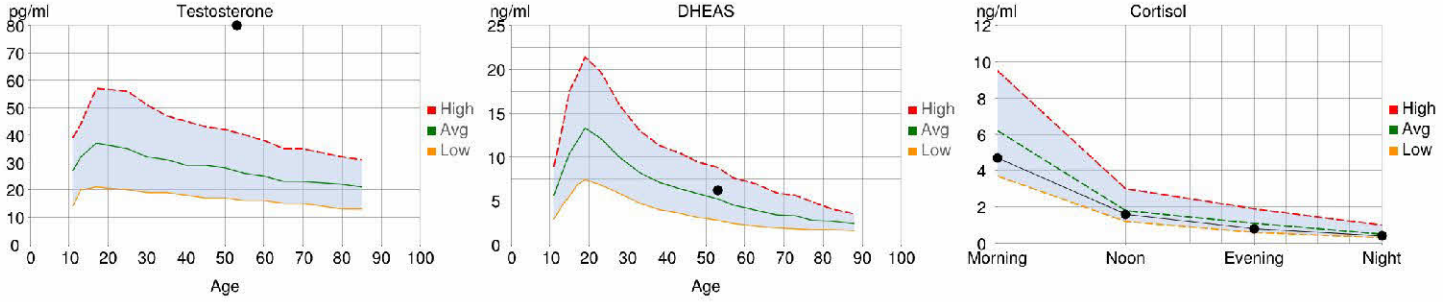
DOB:

Hormone Test	Current 04/24/2013		Units	Range
Estradiol (saliva)	2		pg/ml	1.3-3.3 Premenopausal (Luteal)
Progesterone (saliva)	11	L	pg/ml	75-270 Premenopausal (Luteal)
Ratio: Pg/E2 (saliva)	6	L		Optimal: 100-500 when E2 1.3-3.3 pg/ml
Testosterone (saliva)	82	H	pg/ml	16-55 (Age Dependent)
DHEAS (saliva)	6.2		ng/ml	2-23 (Age Dependent)
Cortisol Morning (saliva)	4.7		ng/ml	3.7-9.5
Cortisol Noon (saliva)	1.6		ng/ml	1.2-3.0
Cortisol Evening (saliva)	0.8		ng/ml	0.6-1.9
Cortisol Night (saliva)	0.4		ng/ml	0.4-1.0
Free T4 (blood spot)	1		ng/dL	0.7-2.5
Free T3 (blood spot)	2.7		pg/ml	2.5-6.5
TSH (blood spot)	2		uU/ml	0.5-3.0
TPO (blood spot) *	15		IU/ml	0-150 (70-150 borderline)

* for research purposes ONLY

Current Hormone Therapies

04-24-2013 - None;



Laboratory Director

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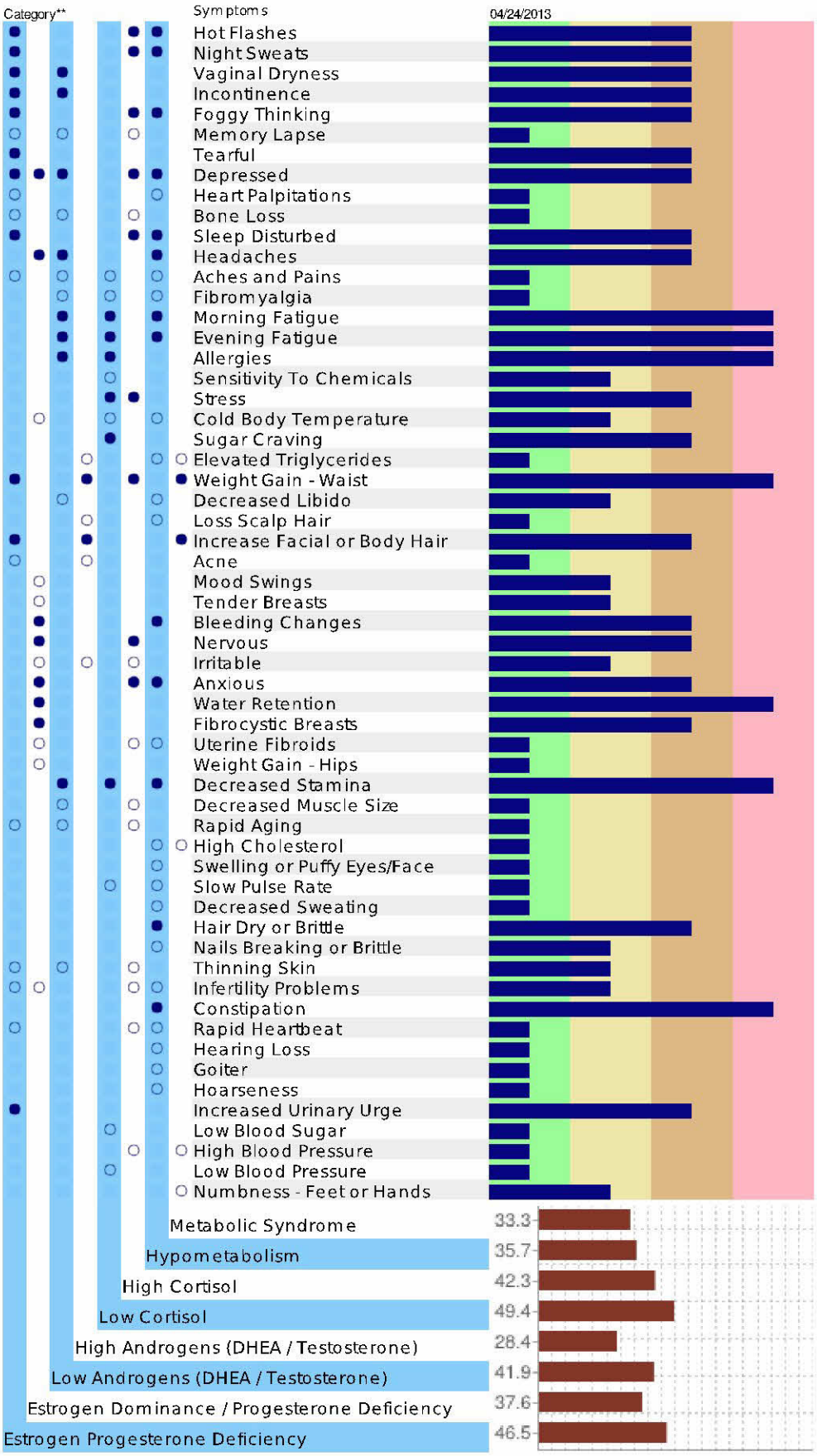
Saliva Observed Reference Ranges

Disclaimer: Supplement type and dosage are for provider information and are ***not*** recommendations for treatment. Reference ranges are observed ranges based on collected laboratory data. F

			Observed Reference Ranges
WOMEN			
Estradiol	Premenopausal		1.3-3.3 pg/ml
	Postmenopausal		0.5-1.7 pg/ml
	Supplement (12-24 Hrs.)	Estradiol Patch (0.05 mg)	0.8-2 pg/ml
		Hormonal Contraceptives	0.5-2.2 pg/ml
		Oral Estradiol (.5-1.0 mg)	1.2-3.9 pg/ml
		Oral Premarin*(0.625 mg)	0.9-3.7 pg/ml
		Topical Bi-est 4:1, (0.6-1.25 mg)	2.4-11.6 pg/ml
		Topical Estradiol (0.5-1.0 mg)	2.9-35.5 pg/ml
Estriol	Premenopausal		<7 pg/ml
	Postmenopausal		<7 pg/ml
	Supplement (12-24 Hrs.)	Oral Estriol	5-20 pg/ml
		Topical Estriol	5-100 pg/ml
Estrone			1.6-5 pg/ml
Progesterone	Premenopausal	Luteal	75-270 pg/ml
		Follicular	12-100 pg/ml
	Postmenopausal		12-100 pg/ml
	Supplement (12-24 Hrs.)	Hormonal Contraceptives	10-53 pg/ml
		Oral Progesterone (100 mg)	30-300 pg/ml
		Topical Progesterone (20 mg)	200-3000 pg/ml
Testosterone		All Ages	16-55 pg/ml
		Ages 16-30	18-55 pg/ml
		Ages > 30	16-47 pg/ml
	Supplement (12-24 Hrs.)	Hormonal Contraceptives	13-45 pg/ml
		Topical Testosterone (0.3-0.5 mg)	22-86 pg/ml
DHEA-S		All Ages	2-19 ng/ml
		Ages 16-30	6.4-18.6 ng/ml
		Ages 31-45	3.9-11.4 ng/ml
		Ages 46-60	2.7-8 ng/ml
		Ages 61-75	2-6 ng/ml
	Supplement (12-24 Hrs.)	Oral DHEA (5-10 mg)	2.8-8.6 ng/ml
		Topical DHEA (5 mg)	3-8 ng/ml
WOMEN AND MEN			
Cortisol	C1	Morning	3.7-9.5 ng/ml
	C2	Noon	1.2-3 ng/ml
	C3	Evening	0.6-1.9 ng/ml
	C4	Night	0.4-1 ng/ml

*Other names and brands may be claimed as the property of others.



**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.

Lab Comments

Estradiol is within the expected ranges for a premenopausal woman during luteal phase, but progesterone is low, indicating luteal insufficiency. Symptoms are consistent with both estrogen dominance and estrogen deficiency which commonly occurs during perimenopause (ages usually ranging from about 45-52), when the estrogen levels can fluctuate dramatically, precipitating both severe vasomotor symptoms and symptoms of estrogen dominance (Prior J. et. al. J Clin Endocrinol Metab 1996: 81: 3127-3128). Many of the listed symptoms are suggestive of thyroid deficiency (most common symptoms include: cold hands and feet, low libido despite normal/high testosterone, fatigue, low stamina, depression, foggy thinking, anxiety, fibromyalgia, brittle nails and hair, hair loss, puffy eyes, constipation). Functional thyroid deficiency is often caused by hormonal imbalances such as high estrogens (estradiol, estrone, or estriol), low progesterone, low androgens (testosterone or DHEAS) and low or high cortisol.

Testosterone is high but symptoms are more characteristic of low androgens (eg. low libido, fatigue). High testosterone may result from excessive production by the ovaries or adrenal glands, testosterone supplementation (none indicated), or exposure to someone using topical testosterone. Chronic high testosterone is usually associated with one or more symptoms of androgen excess (excess facial/body hair, acne, oily skin and hair, weight gain in the waist, increased agitation). These symptoms are not reported as problematic at time of saliva collection suggesting that the exposure to testosterone is acute or that other hormones (eg. high estrogens, high cortisol, use of synthetic progestins found in hormonal contraceptives and HRT) are blocking the side effects typically seen with high testosterone.

DHEAS is within mid-normal expected age range. 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.

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.

Free T4 and TSH are within normal ranges. Free T3 is within normal range but below the optimal range of 3-4 pg/ml. The low-normal T3 contributes to symptoms of thyroid deficiency. Lower T3 levels often are due to low precursor (i.e., low T4), poor hepatic conversion of T4 to T3, or excessive conversion of T4 to reverse T3, the bio-inactive form of T3. Low hepatic conversion of T4 to T3 would indicate one or more of the following: nutrient deficiency (e.g., zinc and/or selenium), heavy metal toxicity (mercury, lead, cadmium), liver damage (caused by viruses, alcohol, etc.), or steroid hormone imbalances (e.g., high cortisol). Stress and associated high cortisol, can cause mineral deficiencies (zinc and selenium) important for liver conversion of T4 to T3 as well as inhibit pituitary production of TSH. If conventional T4 therapy does not resolve

symptoms of thyroid deficiency, consider combination T4/T3 replacement therapy or slow release T3 therapy alone. Because thyroid replacement increases the degradation rate of cortisol in the liver it is important that cortisol levels are within normal range before thyroid therapy is considered. Otherwise, thyroid therapy may further exacerbate low cortisol symptoms (hypoglycemia, sugar craving, and fatigue-tired but wired feeling) and, in turn, compromise the actions of thyroid, which require normal physiological levels of cortisol.

Thyroid peroxidase antibodies (TPO) are low indicating that Hashimoto's thyroiditis is unlikely.