

# Hormone Evaluation

Version: 3.5.0.428

# ZRT Laboratory

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Beaverton, OR 97008  
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info@zrtlab.com http://www.salivatest.com

1004 02 18 100 SB

Samples Arrived: 11/26/2007

Samples Collected: A 11/20/07 07:00 AM

Date Closed: 12/06/2007

B 11/20/07 12:00 PM

C 11/20/07 06:30 PM

D 11/20/07 09:30 PM

E 11/20/07 07:30 AM

Getuwell Clinic  
1234 Any Street  
Anytown, OR 00000

Tamara Trueblood  
1234 Street Ave  
Beaverton, OR 97008

Gender: Female

Client Phone: 5555555555

Menopausal Status: Pre-Menopausal - Irregular

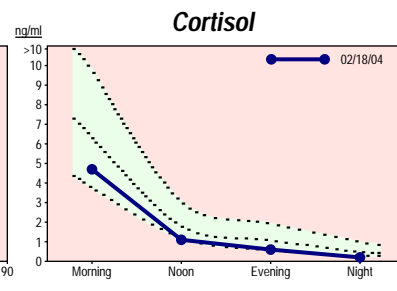
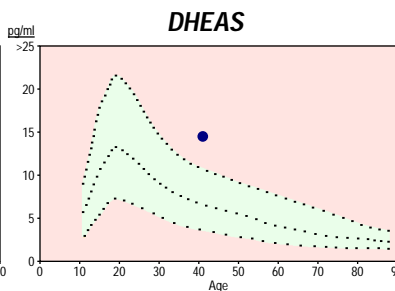
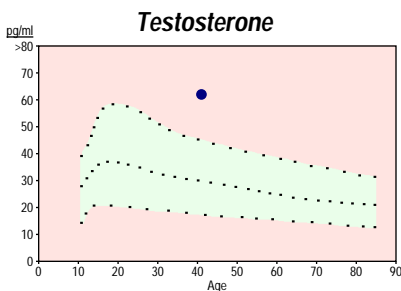
Age: 41

DOB: 9/26/1966

Hormone Test	In Range	Out Of Range	Units	Range
Estradiol (saliva)		3.4H	pg/ml	1.3-3.3 Premenopausal (Luteal)
Progesterone (saliva)		10L	pg/ml	75-270 Premenopausal (Luteal)
Ratio: Pg/E2 (saliva)		3L		Optimal: 100-500 when E2 1.3-3.3 pg/ml
Testosterone (saliva)		62H	pg/ml	16-55 (Age Dependent)
DHEAS (saliva)	14.5		ng/ml	2-23 (Age Dependent)
Cortisol Morning (saliva)	4.7		ng/ml	3.7-9.5
Cortisol Noon (saliva)		1.1L	ng/ml	1.2-3.0
Cortisol Evening (saliva)	0.6		ng/ml	0.6-1.9
Cortisol Night (saliva)		0.2L	ng/ml	0.4-1.0
Free T4 (blood spot)	1.6		ng/dL	0.7-2.5
Free T3 (blood spot)	3.8		pg/ml	2.5-6.5
TSH (blood spot)	1.8		uU/ml	0.5-3.0
TPO (blood spot)	15		IU/ml	0-150 (70-150 borderline)

### Current Hormone Therapies

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David T. Zava, Ph.D.  
Laboratory Director

Date: 12/06/2007  
CLIA Lic # 38D0960950

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**LabAsst**

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[www.SalivaTest.com](http://www.SalivaTest.com)

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## ZRT Laboratory 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. For more information, see [www.zrtlab.com](http://www.zrtlab.com) or contact [info@zrtlab.com](mailto:info@zrtlab.com).

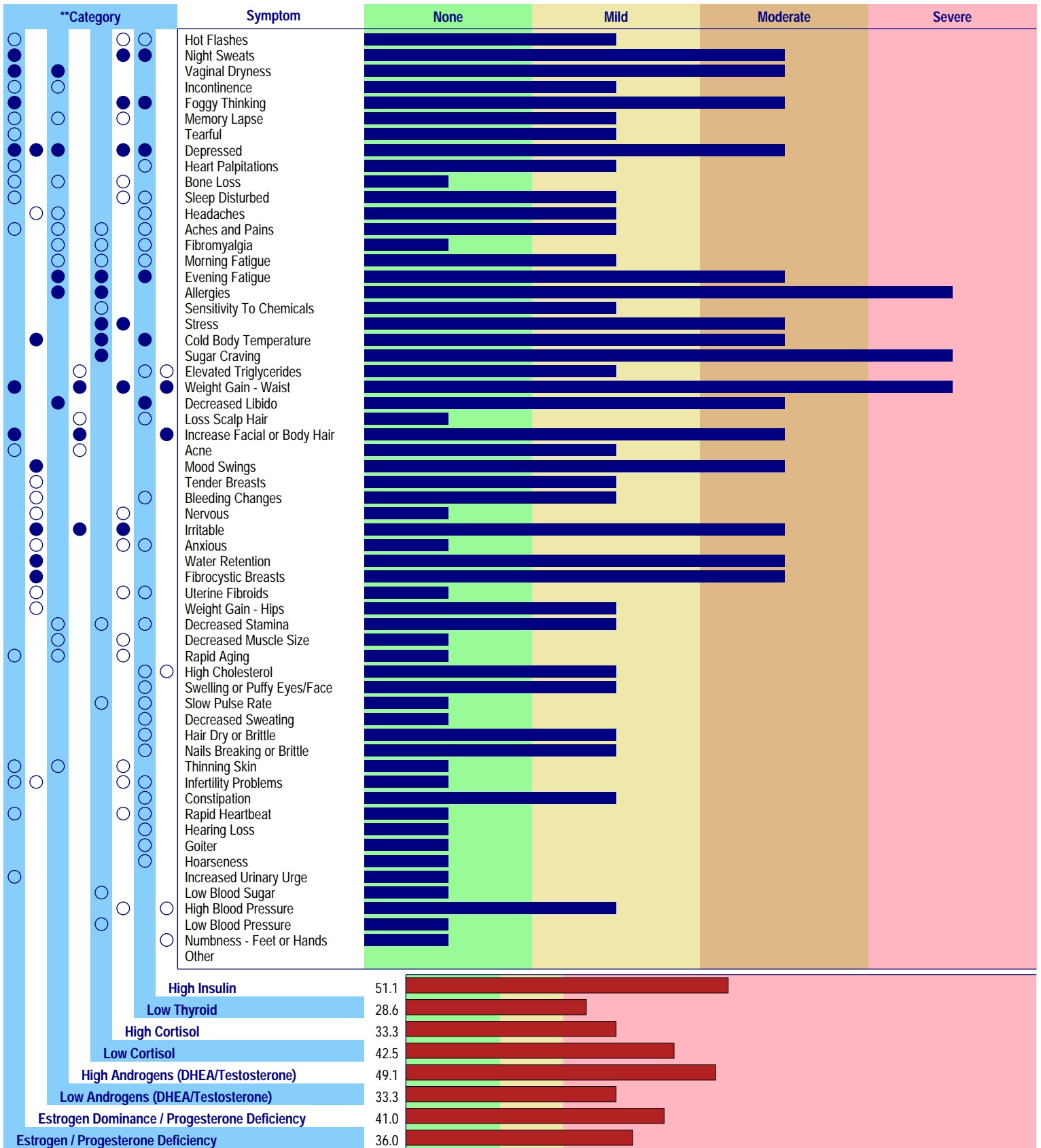
			Observed Reference Ranges (1/07)	Old Ranges	
<b>WOMEN</b>					
<b>Estradiol</b>	<b>Premenopausal</b>		1.3-3.3	1-5	
	<b>Postmenopausal</b>		0.5-1.7	1-1.5	
	<b>Supplement (12-24 Hrs.)</b>	Estradiol Patch (0.05 mg)		0.8-2	
		Hormonal Contraceptives		0.5-2.2	
		Oral Estradiol (.5-1.0 mg)		1.2-3.9	1.5-10
		Oral Premarin*(0.625 mg)		0.9-3.7	
Topical Bi-est 4:1, (0.6-1.25 mg)			2.4-11.6	1.5-10	
Topical Estradiol (0.5-1.0 mg)		2.9-35.5			
<b>Progesterone</b>	<b>Premenopausal</b>	Luteal	75-270	100-600	
		Follicular			
	<b>Postmenopausal</b>		25-100	25-100	
	<b>Supplement (12-24 Hrs.)</b>	Hormonal Contraceptives		10-53	
		Oral Progesterone (100 mg)		30-300	100-1000
Topical Progesterone (20 mg)		200-3000	500-3000		
<b>Testosterone</b>		All Ages	16-55	20-50	
		Ages 16-30	18-55		
		Ages > 30	16-47		
	<b>Supplement (12-24 Hrs.)</b>	Hormonal Contraceptives		13-45	
		Topical Testosterone (0.3-0.5 mg)		22-86	n/a
<b>DHEA-S</b>		All Ages	2-19	3-10	
		Ages 16-30	6.4-18.6		
		Ages 31-45	3.9-11.4		
		Ages 46-60	2.7-8		
		Ages 61-75	2-6		
	<b>Supplement (12-24 Hrs.)</b>	Oral DHEA (5-10 mg)		2.8-8.6	
		Topical DHEA (5 mg)		3-8	
<b>Estrone</b>			1.6-5	2-10	
<b>Estriol</b>	<b>Premenopausal</b>				
	<b>Postmenopausal</b>		<7	3-7	
	<b>Supplement (12-24 Hrs.)</b>	Oral Estriol		5-20	5-20
Topical Estriol			5-100	5-100	
<b>MEN</b>					
<b>Estradiol</b>			0.8-2.2	0.5-1.5	
<b>Progesterone</b>			15-100	25-100	
		Topical Progesterone (5-10 mg)		42-650	
<b>Testosterone</b>		All Ages	44-148	50-200	
		Ages 16-30	72-148		
		Ages 31-50	58-120		
		Ages 51-70	44-94		
		Ages > 70	30-77		
	<b>Supplement (12-24 Hrs.)</b>	Androgel* (25-50 mg)		1300-3700	
Topical Testosterone (5-10 mg)			115-800	200-500	
<b>DHEA-S</b>		All Ages	2-23	3-10	
		Ages 16-30	7-23		
		Ages 31-45	6-18		
		Ages 46-60	4-11.5		
		Ages 61-75	2.4-7.5		
	<b>Supplement (12-24 Hrs.)</b>	Oral DHEA (25 mg)		6-17	
		Topical DHEA (10 mg)		4-15	
<b>Estrone</b>			0-3	0-3	
<b>Estriol</b>			0-3	0-3	
<b>WOMEN AND MEN</b>					
<b>Cortisol</b>	<b>C1</b>	Morning	3.7-9.5	3-8	
	<b>C2</b>	Noon	1.2-3	2-4	
	<b>C3</b>	Evening	0.6-1.9	1-2	
	<b>C4</b>	Night	0.4-1	0.5-1.5	

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

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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.

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.

Estradiol is higher than expected for a postmenopausal woman not using estrogen replacement therapy (ERT) (none indicated). Endogenous estrogen production (via ovaries, adrenals), aromatization (conversion) of androgens (testosterone and/or DHEAS) into estrogens in adipose tissue, current supplementation of estrogen replacement therapy (ERT) (none indicated), and/or slow clearance of recently supplemented ERT likely contribute to higher estradiol. If symptoms of estrogen dominance are problematic it would be worthwhile to consider lowering estrogens by dose reduction (assuming supplementation) or supplementing with natural progesterone, herbs, high fiber diet, and/or nutritional supplements such as cruciferous vegetable extracts that help accelerate estrogen clearance.

Testosterone is high. High testosterone, irregular menstrual cycles, low progesterone, and symptoms of androgen excess (loss of scalp hair, increased facial/body hair, and/or acne) strongly suggest cystic ovaries (PCOS). This condition is relatively common in women (estimated to range from 10-20% of the population). Cystic ovaries is thought to be caused, in part, by insulin resistance, obesity, excessive consumption of carbohydrates, sedentary lifestyle, smoking, lack of stress management (high cortisol), unbalanced hormone replacement (natural or synthetic), and genetic predisposition. Exercise, stress reduction, weight reduction, dietary modification, and creating a better hormonal balance with bio-identical hormone replacement therapy have been shown to be effective, natural ways of treating insulin resistance/PCOS. For more information, see: [www.ovarian-cysts-pcos.com/index.html](http://www.ovarian-cysts-pcos.com/index.html); [www.pcosupport.org](http://www.pcosupport.org) or "PCOS, the Hidden Epidemic" by Samuel Thatcher, MD.

DHEAS is higher than the 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 (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.

Cortisol is fluctuating from normal to low throughout the day, consistent with adrenal dysfunction and poor adrenal reserves. Adrenal dysfunction is commonly caused by stressors: mental, emotional and physical including cortisol precursor deficiency (pregnenolone/progesterone) and nutritional deficiencies (low vitamin C, B5 and inadequate protein diet). A normal daily output of cortisol is essential for normal metabolic activity in all tissues of the body. Depletion of cortisol by chronic stressors often leads to symptoms such as fatigue, allergies (immune dysfunction), sleep disturbances, cold body temp, and sugar cravings. Cortisol facilitates the actions of other hormones, particularly that of the thyroid hormone T3, and helps regulate normal immune function. Thyroid medication increases hepatic clearance of cortisol and thus can exacerbate existing problems not only of hypoadrenia (low cortisol), but also of hypothyroidism. It is important that cortisol is within physiological range before initiating thyroid therapy for best results. Adrenal support is worthwhile considering. 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; The 21st Century Stress Syndrome", 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.

Thyroid hormones (free T4, free T3, and TSH) and thyroid peroxidase antibodies (TPO) are within normal ranges; however, symptoms of thyroid deficiency persist (feeling cold, evening fatigue, low libido, low stamina, brittle nails). This suggests that although T3 is within normal level, it 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. For an excellent review on the intricate interplay of thyroid and steroid hormones please see the following: [www.endotext.com/adrenal](http://www.endotext.com/adrenal).

Free T3 is within normal range. If symptoms of thyroid deficiency are problematic this may be due to a "functional" thyroid deficiency, meaning that the thyroid hormone is not functioning normally at the tissue level.

TSH is within normal range; however, symptoms suggest thyroid deficiency. A normal TSH does not exclude thyroid deficiency, particularly when stress hormones (cortisol or catecholamines) are elevated (suggest testing salivary cortisol). When stress hormones are high a low level of thyroid hormone (T3) is less likely to stimulate pituitary TSH synthesis (see: [www.endotext.com/adrenal/adrenal8/adrenalframe8.htm](http://www.endotext.com/adrenal/adrenal8/adrenalframe8.htm)).

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