

Test Results



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

2016 11 28 001 U



Ordering Provider:

Samples Arrived: 11/28/2016
Date Closed: 12/03/2016

Samples Collected: Urine: 11/23/16 06:30
Urine: 11/23/16 09:15
Urine: 11/23/16 18:30
Urine: 11/23/16 23:00

Dr HP Adrenalli
8605 SW Creekside Pl
Beaverton, OR 97008

Nephras Loop
111 Main St
Beaverton, OR 97008

Menses Status: Pre-Menopausal
Gender: Female

Last Menses: 11/02/2016
DOB: 2/26/1985 (31 yrs) Patient Ph#: 555 555 5555

BMI: 18.6
Height: 5 ft 10 in
Weight: 130 lb
Waist: Unspecified

Test Name	Result	Range
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Urinary Free Diurnal Cortisol (µg/g Cr)

Free Cortisol (Urine)	54.02	H 7.8-29.5 (1st Morning)
Free Cortisol (Urine)	215.24	H 23.4-68.9 (2nd Morning)
Free Cortisol (Urine)	3.12	L 6.0-19.2 (Evening)
Free Cortisol (Urine)	2.28	L 2.6-8.4 (Night)

Urinary Free Diurnal Cortisone (µg/g Cr)

Free Cortisone (Urine)	199.16	H 31.6-91.6 (1st Morning)
Free Cortisone (Urine)	325	H 63.3-175.8 (2nd Morning)
Free Cortisone (Urine)	26.22	L 30.6-88.5 (Evening)
Free Cortisone (Urine)	20.89	15.5-44.7 (Night)

Urinary Diurnal Melatonin MT6s (µg/g Cr)

Melatonin (Urine)	320	H 18.0 - 40.9 (1st Morning)
Melatonin (Urine)	72.8	H 7.3 - 31.9 (2nd Morning)
Melatonin (Urine)	12.55	H 0.7 - 2.2 (Evening)
Melatonin (Urine)	23.96	H 1.7 - 11.1 (Night)

Urinary Diurnal Norepinephrine (µg/g Cr)

Norepinephrine (Urine)	9.51	9.4-22.0 (1st Morning)
Norepinephrine (Urine)	11.3	L 12.6-38.2 (2nd Morning)
Norepinephrine (Urine)	40.1	21.1-42.9 (Evening)
Norepinephrine (Urine)	45.6	H 16.9-38.8 (Night)

Urinary Diurnal Epinephrine (µg/g Cr)

Epinephrine (Urine)	0.49	L 0.5-1.5 (1st Morning)
Epinephrine (Urine)	0.72	0.7-6.1 (2nd Morning)
Epinephrine (Urine)	8.34	H 2.3-8.1 (Evening)
Epinephrine (Urine)	4.21	H 1.2-4.2 (Night)

Urinary Creatinine (mg/mL)

Creatinine (Urine)	0.51	0.3-2.0 (1st morning)
Creatinine (Urine)	0.55	0.3-2.0 (2nd morning)

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: 1165699826 at 12/6/2016 2:39:03 PM

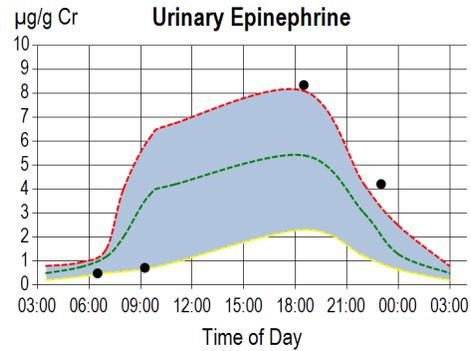
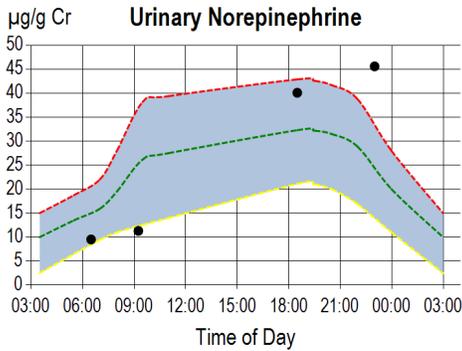
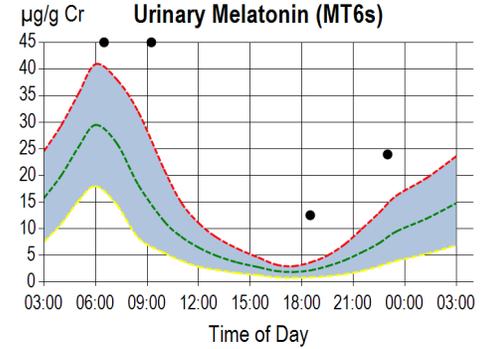
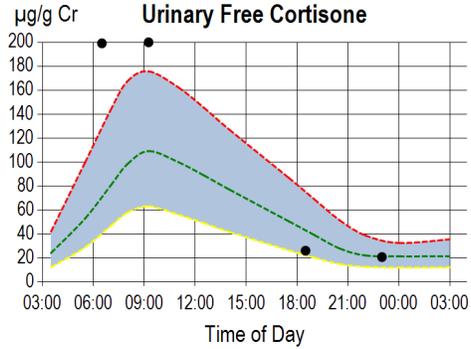
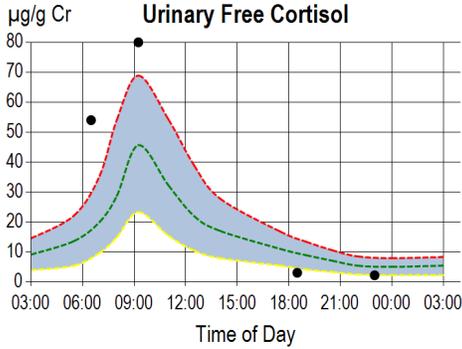
Test Name	Result	Range
Creatinine (Urine)	1.14	0.3-2.0 (Evening)
Creatinine (Urine)	0.35	0.3-2.0 (Night)

<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.

Therapies

10mcg BID oral Cytomel (T3) (Pharmaceutical) (1 Days Last Used); Lorazepam

Disclaimer: Graphs below 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. Graph key ---High ---Avg ---Low

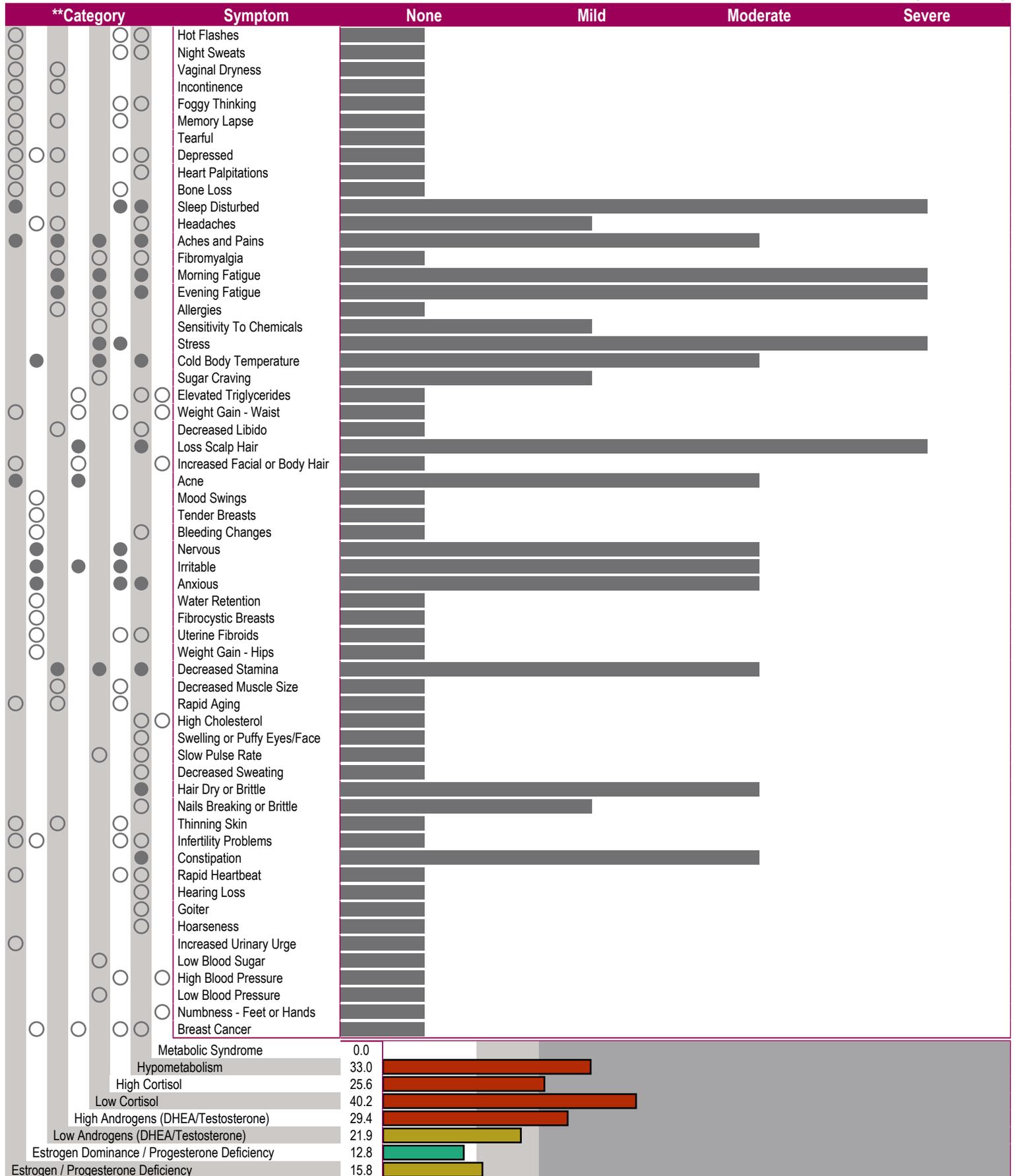


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**Category refers to the most common symptoms experienced when specific hormone types (eg estrogens, androgens, cortisol) are out of balance, i.e., either high or low.

Lab Comments**URINARY FREE CORTISOL (F) AND CORTISONE (E)**

Urinary Free Cortisol (F) and Cortisone (E), the inert metabolite of F, are following a normal circadian rhythm but are outside the normal reference ranges most of the day. First and second morning F levels are higher than reference ranges, whereas evening and night levels are lower. High cortisol in the first urine void suggests high levels during sleep or shortly after awakening. A high level in the second void several hours later indicates continued high cortisol synthesis by the adrenal glands, suggesting some type of stressor (e.g. emotional, physical, chemical) during this early time interval. Cortisol falls rapidly by evening to a low level and is within low-normal range before bed at night. This may be due to adrenal exhaustion or evening use of medications for treating anxiety and sleep disturbances. Low F and E indicates low adrenal cortisol synthesis, as opposed to high cortisol synthesis and excessive conversion to cortisone (expect to see low F and high E) via overexpression (activation) of 11 Beta Hydroxysteroid dehydrogenase (11B-HSD)(see Steroid Hormone Cascade).

High cortisol in the morning voids, followed by lower levels in the evening/night voids could reflect some form of adrenal exhaustion caused by excessive stressors or could also be a result of medication-induced (note: patient is using a benzodiazepam-type medication) dysregulation of the HPA axis and rebound response (high followed by low cortisol production). Thyroid replacement therapy may also affect cortisol metabolism and clearance rate (increases). A high first morning cortisol indicates high cortisol output throughout the night and early morning during sleep. Chronic high cortisol, particularly at night, can eventually lead to conditions such as weight gain in the waist, muscle and bone loss, depression, and immune suppression.

Because chronic stressors and associated high night cortisol can have adverse effects on health and wellbeing, it is important to develop strategies to identify and eliminate or reduce the stressors that are causing HPA axis dysregulation. For additional information about HPA axis dysfunction and strategies for adrenal support and lowering stress/cortisol levels the following books and journal articles 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; "The Role of Stress and the HPA Axis in Chronic Disease Management", by Thomas Guilliams.

MELATONIN METABOLITE: 6-SULFATOXYMELATONIN (MT6s)

The urinary metabolite of melatonin, 6-sulfatoxymelatonin (MT6s), follows a normal circadian rhythm (higher at night, lower during the day) but is higher than reference ranges throughout the day. This pattern is commonly seen in individuals taking low-dose melatonin before bed at night (none indicated) and also in those using sleep medications that affect MT6s synthesis and excretion into urine.

Melatonin is known to have many different beneficial effects in the body. It helps slow the aging process, is a potent anti-oxidant, regulates the immune system, inhibits formation and growth of tumors such as breast and prostate cancers, and helps regulate the synthesis of the sex-hormones estradiol and progesterone.

When melatonin is within normal range or higher, but sleep issues and self-perceived stress persist, this condition is more likely related to other imbalances, the most likely of which is high cortisol during sleep hours, as seen in this individual. For more general information about melatonin please see: <http://www.nlm.nih.gov/medlineplus/druginfo/natural/940.html>

NOREPINEPHRINE (NE)

Norepinephrine is not following a normal circadian rhythm. NE levels are normally low during sleep, as reflected in a lower first morning level. NE then rises with awakening, remains high throughout the day, and then falls again to lower levels at night. The abnormal NE circadian rhythm seen in these test results is typically observed when some form of a persistent stressor (emotional, physical, etc.) is present leading to adrenal dysfunction and an abnormal stress response. A normal daily output of norepinephrine (predominantly by the sympathetic nerves innervating the adrenal glands) is essential to maintaining appropriate blood pressure, cardiac output, smooth muscle contractility, and glucose levels for normal daily functions. Low levels may contribute to nighttime hypoglycemia while high levels may contribute to anxiety, irritability and the symptoms associated with the stress-activated "fight or flight" system. The abnormal diurnal norepinephrine pattern seen in this individual (high at night, low in the morning) is consistent with self-reported symptoms of stress, sleep problems, excessive fatigue, and anxiety. Therapies to help support adrenal function and lower the sympathetic nervous system's response to self-perceived stressors may be beneficial.

EPINEPHRINE (EPI)

Epinephrine is not following a normal circadian rhythm. Epinephrine levels in the morning are low but rise to high levels at night. Generally norepinephrine and epinephrine will show the same pattern (inverted "u"). Circulating epinephrine is derived solely from the adrenal glands and is responsible for the adrenalin rush or the "fight or flight" response. As with norepinephrine, sufficient levels of epinephrine are necessary to maintain normal blood pressure, cardiac function and glucose. Low levels are likely reflective of adrenal dysfunction. Abnormal diurnal epinephrine pattern is consistent with self-reported symptoms of sleep problems, fatigue, and anxiety. Therapies to help support adrenal function should be beneficial in this patient.