

Test Results



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2014 10 27 001 SB



Samples Arrived: 10/27/2014
Date Closed: 10/27/2014

Samples Collected:
Saliva: 10/12/14 07:15
Saliva: 10/12/14 12:50
Saliva: 10/12/14 17:10
Saliva: 10/12/14 23:30
Blood Spot: 10/12/14 07:30

ZRT Laboratory Demo Account
8605 SW Creekside Pl
Beaverton, OR 97008

Comprehensive Male Profile II

Gender: Male

DOB: 3/2/1949 (65 yrs)

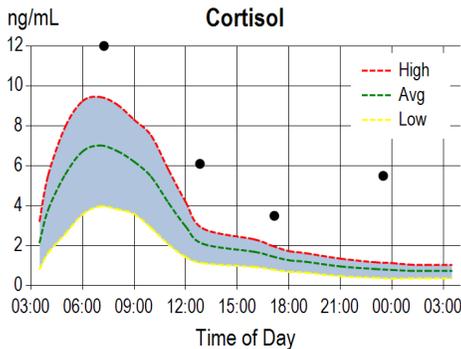
Patient Ph#: Unspecified

BMI: 29.4
Height: 5 ft 10 in
Weight: 205 lb
Waist: 36 in

Test Name	Result	Units	Range
Cortisol (Saliva)	12.3	H ng/mL	3.7-9.5 (morning)
Cortisol (Saliva)	6.1	H ng/mL	1.2-3.0 (noon)
Cortisol (Saliva)	3.5	H ng/mL	0.6-1.9 (evening)
Cortisol (Saliva)	5.5	H ng/mL	0.4-1.0 (night)
Estradiol (Blood Spot)	65	H pg/mL	12-56
Testosterone (Blood Spot)	250	L ng/dL	400-1200 (Age Dependent)
Ratio: T/SHBG (Blood Spot)	0.3	L	.7 - 1.0
DHEAS (Blood Spot)	120	ug/dL	70-325
SHBG (Blood Spot)	25	nmol/L	15-50
PSA (Blood Spot)	4.5	H ng/mL	<0.5-4 (optimal 0.5-2)
Free T4 (Blood Spot)	1.6	ng/dL	0.7-2.5
Free T3 (Blood Spot)	3.5	pg/mL	2.5-6.5
TSH (Blood Spot)	0.9	µU/mL	0.5-3.0
TPO (Blood Spot)	24	IU/mL	0-150 (70-150 borderline)

Therapies

oral Vitamin D3 (OTC)



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.

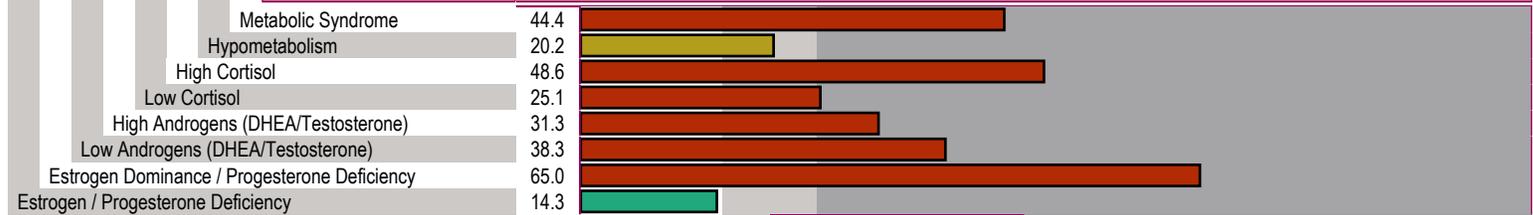
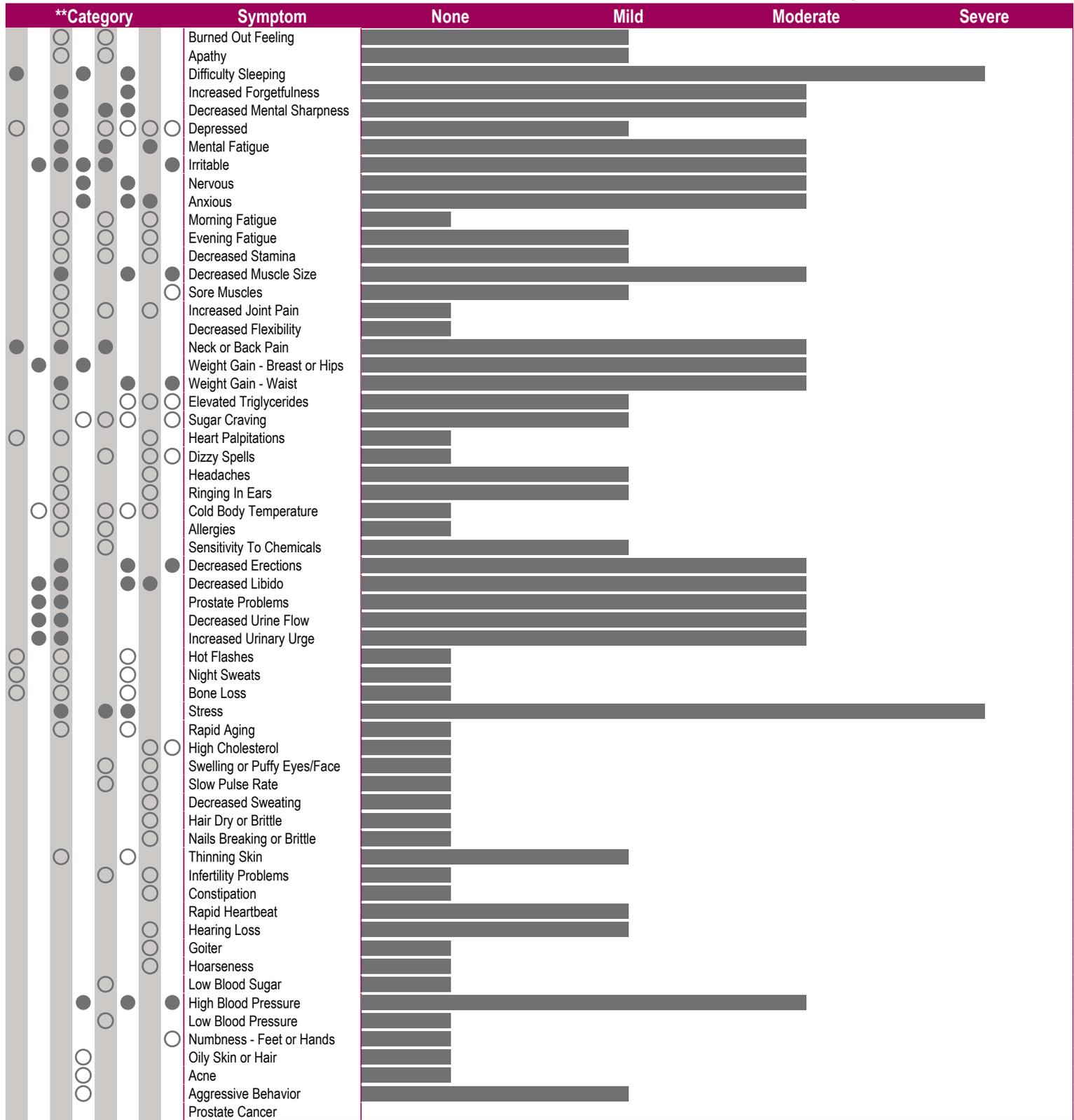
David T. Zava
David T. Zava, Ph.D.
(Laboratory Director)

CLIA Lic # 38D0960950
Composed by: 1164619955 at 10/27/2014 1:24:04 PM

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	Men
Cortisol (saliva) (Saliva) - ng/mL	3.7-9.5 (morning); 1.2-3.0 (noon); 0.6-1.9 (evening); 0.4-1.0 (night)
Estradiol (blood spot) (Blood Spot) - pg/mL	12-56
Testosterone (blood spot) (Blood Spot) - ng/dL	400-1200 (Age Dependent)
Ratio: T/SHBG (blood spot) (Blood Spot)	.7 - 1.0
DHEAS (blood spot) (Blood Spot) - ug/dL	70-325
SHBG (Blood Spot) - nmol/L	15-50
PSA (Blood Spot) - ng/mL	<0.5-4 (optimal 0.5-2)
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)



**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

Salivary cortisol is higher than the expected range throughout the day. In a normal individual without significant stressors, cortisol is at its highest level in the morning shortly after awakening (optimal level 4-6 ng/ml) and steadily drops throughout the day, reaching the lowest level during sleep in the very early morning about 2 am (optimal level 0.7-1.0 ng/ml just before bed). The most common adrenal stressors that can raise cortisol levels include psychological stressors (emotional), physical insults (surgery, injury, diseases), chemical exposure (environmental pollutants, excessive medications), hypoglycemia (low blood sugar), and pathogenic infections (bacterial, viral, fungal). Acute situational stressors (e.g., anxiety over unresolved situations, travel, work-related problems, wedding, holiday season, etc.) can also result in a transient increase in cortisol levels, which is a normal response to the stressor, but levels return to normal with removal of the stressor. However, if the stressor persists the adrenal glands either continue to meet the demands of the stressor with high cortisol output, or become exhausted, wherein cortisol levels fall to normal or more commonly drop to a very low level. High cortisol production by the adrenal glands is a normal response to stressors and is essential for health. However, if high adrenal cortisol output persists over a prolonged period of time (months/years), excessive breakdown of normal tissues (muscle wasting, thinning of skin, bone loss) and immune suppression can result. Chronic high cortisol, particularly if it is elevated throughout the day or high at night, is associated most commonly with symptoms of sleep disturbances, vasomotor symptoms (hot flashes and night sweats despite normal or high estrogen levels), fatigue, depression, weight gain in the waist, bone loss, and anxiety. High cortisol can impair the actions of other hormones such as insulin and thyroid, causing tissue resistance to these hormones. For additional information about strategies for supporting adrenal health and reducing stressors, 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; "Thyroid Power", by Richard Shames, MD.

Estradiol (blood spot) is higher than range for a male, indicating excessive conversion of androgens to estrogens. Testosterone conversion to estradiol can result from increased levels of aromatase, which is found in adipose tissue and induced by high levels of cortisol. (Note: Cortisol is elevated.)

Testosterone is low and the Free Testosterone Index (FTI), determined by the ratio of testosterone to SHBG ($FTI = T/SHBG$) is also lower than the optimal range of 0.7-1.0 seen in the majority of healthy young males. A low FTI indicates that the free fraction of testosterone, the portion of testosterone that escapes blood binding proteins and is available to target tissues, is also low. Low testosterone in men is commonly seen beginning in the fourth decade of life, and is associated with symptoms of aging referred to as andropause. The expected blood (blood spot, serum, or plasma) levels for testosterone in a male range from 250 to 1200 ng/dL; however, when values drop below about 350-400 ng/dL typical symptoms of hypogonadism are more frequent. Testosterone is an important anabolic hormone that helps to maintain both physical and mental health: it prevents fatigue, helps to maintain a normal sex drive, increases the strength of all structural tissues (skin, bone, muscles, heart) and prevents depression and mental fatigue. Testosterone deficiency is associated with symptoms such as erectile dysfunction, decreased sex drive, and decreased mental and physical ability, apathy, and loss of muscle mass. Low testosterone in men is closely associated with insulin resistance/metabolic syndrome. Stress management, exercise, proper nutrition, dietary supplements (particularly adequate zinc and selenium), and androgen replacement therapy (testosterone) have all been shown to raise androgen levels in men and help counter andropause symptoms. Testosterone therapy is worthwhile considering if PSA is within normal range. Weight reduction with proper diet and exercise, and stress reduction (lowers cortisol) are important components to androgen replacement therapy.

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 there is a proportional increase in hepatic production of SHBG. SHBG binds tightly to testosterone and its more potent metabolite dihydrotestosterone (DHT). It also binds to estradiol, but less tightly. Thus an increase in SHBG results in proportionately less bioavailable testosterone than estradiol. The ideal ratio of testosterone to SHBG in males is 0.7-1. As men age testosterone levels drop and SHBG levels increase, resulting in a lower testosterone/SHBG ratio. Andropausal symptoms are often caused by the lower bioavailable level of testosterone.

PSA (Prostate Specific Antigen) is higher than the reference range of < 4 ng/ml, and the optimal range of 0.5-2 ng/ml. A high PSA is usually caused by BPH (Benign Prostatic Hypertrophy), prostate cancer, prostate inflammation or infection, and prostate or perineal trauma. Ejaculation within 48-72 hr of blood draw may also cause a slight elevation in PSA, but usually not outside the normal range of < 4 ng/ml. Prostate surgery can cause a significant rise in PSA outside the normal range and testing for PSA is not recommended for at least three weeks post surgery. Periodic repeat testing for PSA within 6 months is strongly recommended.

Thyroid hormones (TSH, free T4, and free T3) and thyroid peroxidase antibodies (TPO) are within normal ranges and symptoms of thyroid imbalance are minimal.