

# Test Results



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**D2015 02 17 002 B**



Samples Arrived: 02/17/2015  
Date Closed: 02/18/2015

Samples Collected: Blood Spot: 02/14/15 07:45

Getuwell  
8605 Southwest Creekside Place  
Beaverton, OR 97008

Male Blood Profile II  
789 N Fake St  
Beaverton, OR 97008

Gender: Male      DOB: 4/24/1962 (52 yrs)      Patient Ph#: 555 555 5555      BMI: 25.8  
Height: 5 ft 11 in  
Weight: 185 lb  
Waist: Unspecified

Test Name	Result	Units	Range
Estradiol (Blood Spot)	<10	L pg/mL	12-56
Testosterone (Blood Spot)	80	L ng/dL	400-1200 (Age Dependent)
Ratio: T/SHBG (Blood Spot)	0.1	L	.7 - 1.0
DHEAS (Blood Spot)	120	ug/dL	70-325
Cortisol (Blood Spot)	16.5	ug/dL	8.5-19.8 (morning), 3.3-8.5 (evening/night)
SHBG (Blood Spot)	35	nmol/L	15-50
PSA (Blood Spot)	2	ng/mL	<0.5-4 (optimal 0.5-2)
Free T4 (Blood Spot)	1.2	ng/dL	0.7-2.5
Free T3 (Blood Spot)	4.2	pg/mL	2.5-6.5
TSH (Blood Spot)	0.8	µU/mL	0.5-3.0
TPO (Blood Spot)*	20	IU/mL	0-150 (70-150 borderline)

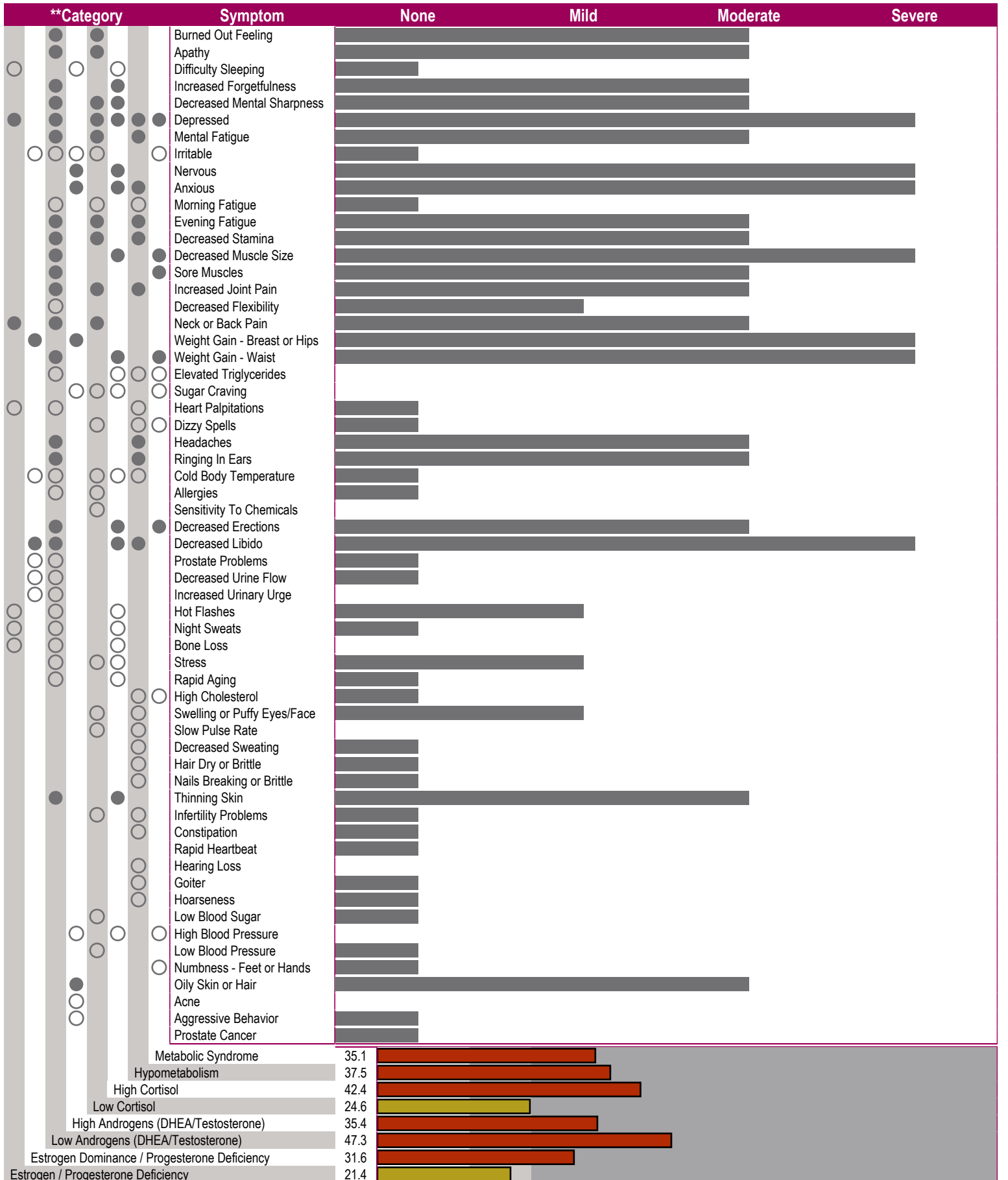
\*For research purposes only.

**Therapies**  
None

**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](http://www.zrtlab.com/reference-ranges).

Test Name	Men
Estradiol (Blood Spot) - pg/mL	12-56
Testosterone (Blood Spot) - ng/dL	400-1200 (Age Dependent)
Ratio: T/SHBG (Blood Spot)	.7 - 1.0
DHEAS (Blood Spot) - ug/dL	70-325
Cortisol (Blood Spot) - ug/dL	8.5-19.8 (morning), 3.3-8.5 (evening/night); 3.3-8.5
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) - $\mu$ U/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.

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: 1164813761 at 2/18/2015 8:08:16 AM

**Lab Comments**

Estradiol (blood spot) is lower than range for a male. Symptoms/conditions associated with persistently low estrogens include hot flashes, night sweats, and bone loss. Low estradiol can be attributed to low aromatase, caused by genetic conditions or use of natural (herbal) or medicinal aromatase inhibitors.

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 symptoms of andropause 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.

Morning cortisol (blood spot) is within mid-range. If symptoms of adrenal imbalance are problematic consider testing cortisol in saliva 4x throughout the day to determine if levels remain within normal range. If salivary cortisol levels drop following the morning sample this suggests low adrenal reserve and need for adrenal support.

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 tightly to estradiol, the most potent of the endogenous estrogens, but about 5 times weaker than to testosterone and DHT. 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 within normal range.

Thyroid hormones (free T4, free T3, and TSH) are within normal ranges but symptoms indicate thyroid deficiency. Normal thyroid levels do not exclude the possibility of a "functional" thyroid deficiency caused by diminished T3 action at the target tissue level, which could be caused by impaired thyroid hormone receptors, nutrient deficiencies, heavy metal toxicity (mercury, lead, cadmium) and/or hormonal imbalances such as excess estrogen, low progesterone, low testosterone, low or high cortisol, and low growth hormone (IGF-1). Correction of imbalances in any of these hormones, should they exist, would likely improve the effectiveness of thyroid therapy.

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