

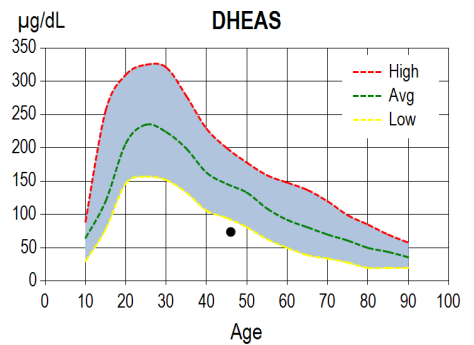
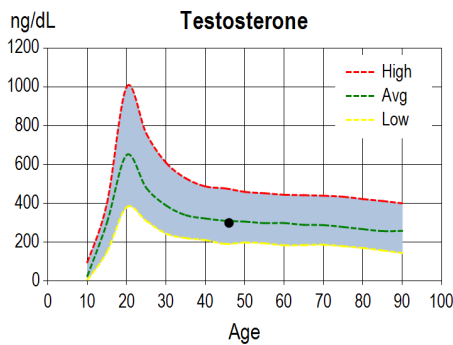
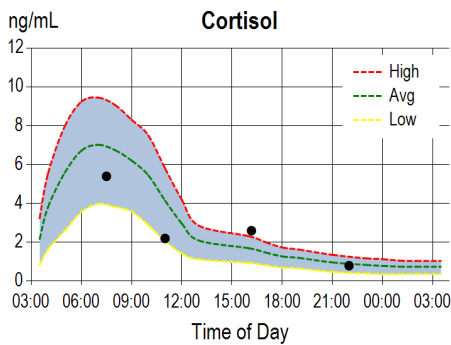
<b>Test #</b>	██████████	<b>Received</b>	06/06/2016	<b>Practitioner Name:</b>	Friederich Damore Bruun Chloe Bjoerk
		<b>Tested</b>	06/10/2016	<b>Practitioner Address:</b>	Brigadevej 4 2 tv, 2300, København S
<b>TST #</b>	██████████	<b>Collected</b>	05/29/16 07:30		
<b>Patient Name</b>	██████████		05/29/16 11:00		
			05/29/16 16:10		
<b>Sex</b>	Male	<b>DOB</b>	05/29/16 22:00		
			05/29/16 07:40		

Test Name	Result		Units	Range
Cortisol (Saliva)	5.4		ng/mL	3.7-9.5 (morning)
Cortisol (Saliva)	2.2		ng/mL	1.2-3.0 (noon)
Cortisol (Saliva)	2.6	H	ng/mL	0.6-1.9 (evening)
Cortisol (Saliva)	0.8		ng/mL	0.4-1.0 (night)
Estradiol (Blood Spot)	73	H	pg/mL	12-56
Testosterone (Blood Spot)	300	L	ng/dL	400-1200 (Age Dependent)
Ratio: T/SHBG (Blood Spot)	0.3	L		.7 - 1.0
DHEAS (Blood Spot)	74		µg/dL	70-325
SHBG (Blood Spot)	30		nmol/L	15-50
PSA (Blood Spot)	2.0		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)	3.0		pg/mL	2.5-6.5
TSH (Blood Spot)	1.1		µU/mL	0.5-3.0
TPOab (Blood Spot)*	24		IU/mL	0-150 (70-150 borderline)

<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.  
 \*For research purposes only.

**Therapies**  
 None Indicated

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.



<b>Test #</b>	[REDACTED]	<b>Received</b>	06/06/2016	<b>Practitioner Name:</b>	Friederich Damore Bruun Chloe Bjoerk
		<b>Tested</b>	06/10/2016	<b>Practitioner Address:</b>	Brigadevej 4 2 tv, 2300, København S
<b>TST #</b>	TST-25319	<b>Collected</b>	05/29/16 07:30 05/29/16 11:00 05/29/16 16:10 05/29/16 22:00 05/29/16 07:40		
<b>Patient Name</b>	[REDACTED]				
<b>Sex</b>	Male	<b>DOB</b>	[REDACTED]		

**Lab Comments**

Cortisol is within range in the morning and at noon, elevated in the evening and within range at night. In a normal individual without significant stressors, cortisol is highest in the morning shortly after awakening and steadily drops throughout the day, reaching the lowest level during sleep in the very early morning about 2 am. Cortisol is normally very low throughout sleep starting to rise several hours before waking and peaking 30 minutes after waking. This pattern of cortisol's rise and fall is referred to as the circadian rhythm. Changes in each tested cortisol level or a change in the pattern suggests a loss of proper adrenal response. Elevated cortisol usually reflects a stressor. The most common adrenal stressors that can raise cortisol levels include: mental/emotional trauma, physical insults (e.g. pain, diseases), chemical exposure (environmental pollutants, excessive medications), and blood sugar imbalance. Acute situational stressors (e.g., work or poor dietary choices) can also raise cortisol levels, which is a normal response to the stressor. However, if the stressors persist, the adrenal glands either continue to meet the demands of the stressor with high cortisol output, or the signal becomes downregulated in the face of chronic stimulation, wherein cortisol levels fall below normal. For additional information about adrenal dysfunction and strategies for adrenal support the following books are recommended: "Adrenal Fatigue" by James L. Wilson, ND, DC, PhD; "The End of Stress as We Know It" by Bruce McEwen.

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 cortisol.

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 low-normal range. DHEAS is highest during the late teens to early twenties and then declines progressively with age to the lower levels of the range in healthy men and women. DHEAS is expected to be within the lower range in older individuals. In younger individuals, lower DHEAS is often associated with adrenal fatigue or removal of the ovaries. Low DHEAS is often associated with low testosterone (DHEA is a testosterone precursor) and symptoms of androgen deficiency (fatigue, depression, low libido, loss of muscle mass, bone loss, memory lapses). If symptoms of androgen deficiency are/become problematic consider DHEA therapy assuming cortisol is within normal range. DHEA therapy can cause a transient suppression of cortisol and exacerbate symptoms of cortisol deficiency if cortisol is low.

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, TSH) and thyroid peroxidase antibodies are within normal ranges; however, this does not exclude the possibility of a functional thyroid deficiency if symptoms are problematic.