

Ordering Provider:
Test Provider MD

Male Sample Report
123 A Street
Sometown, CA 90266

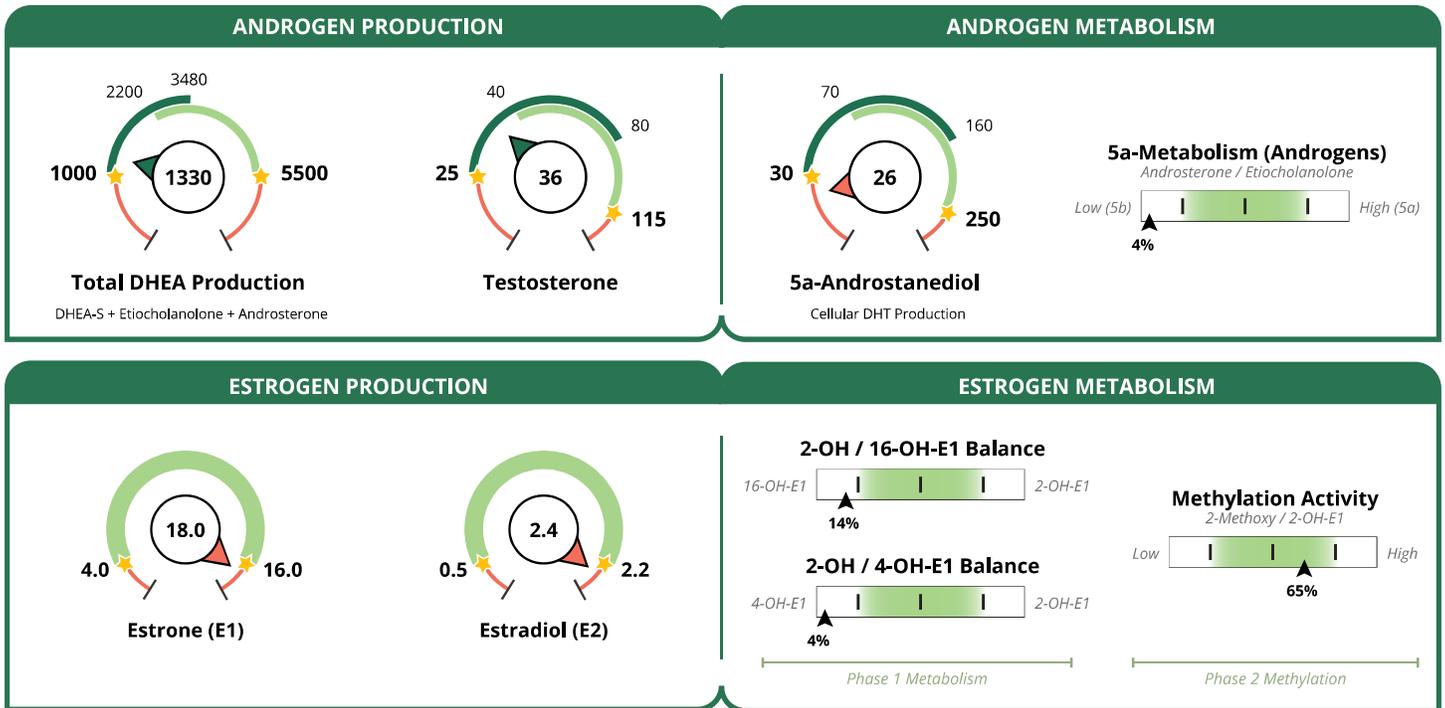
DOB: 1976-01-01
Age: 49
Sex: Male

Collection Dates:
2025-06-12 (U3 U4)
2025-06-13 (U1 U2)

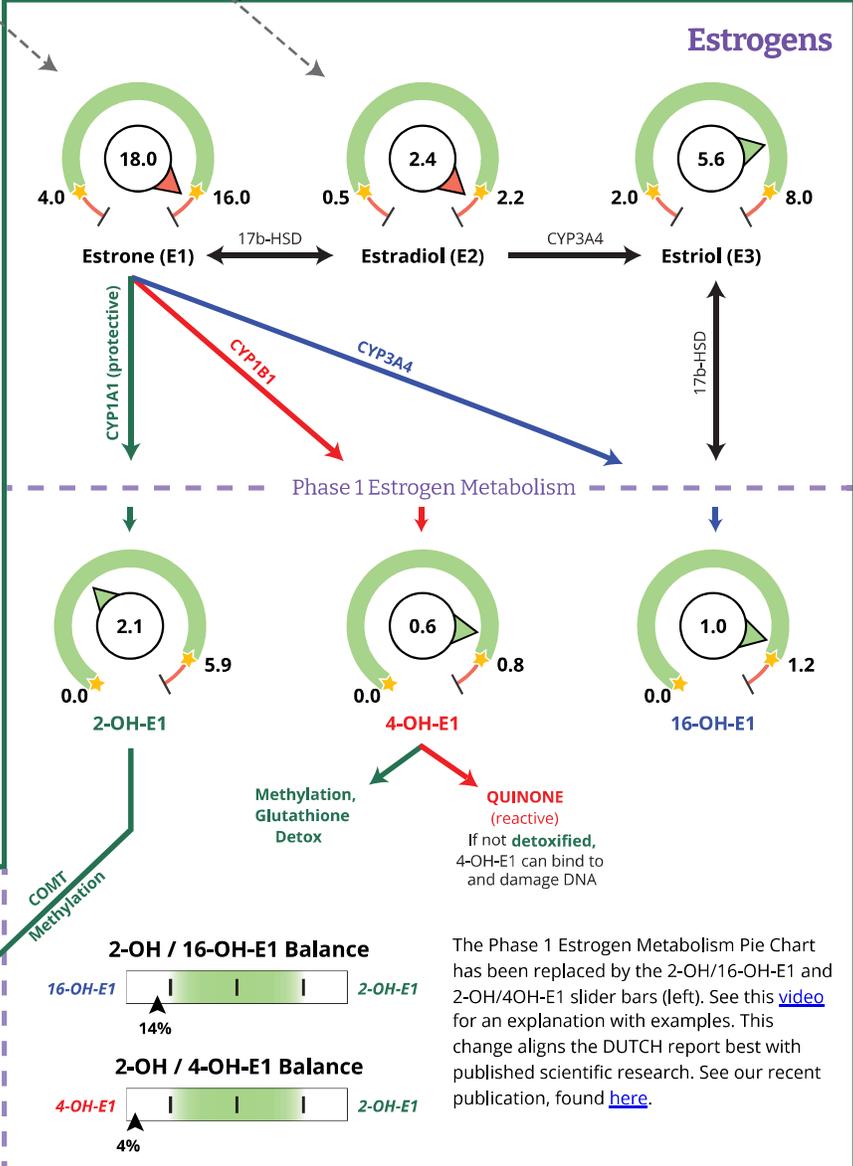
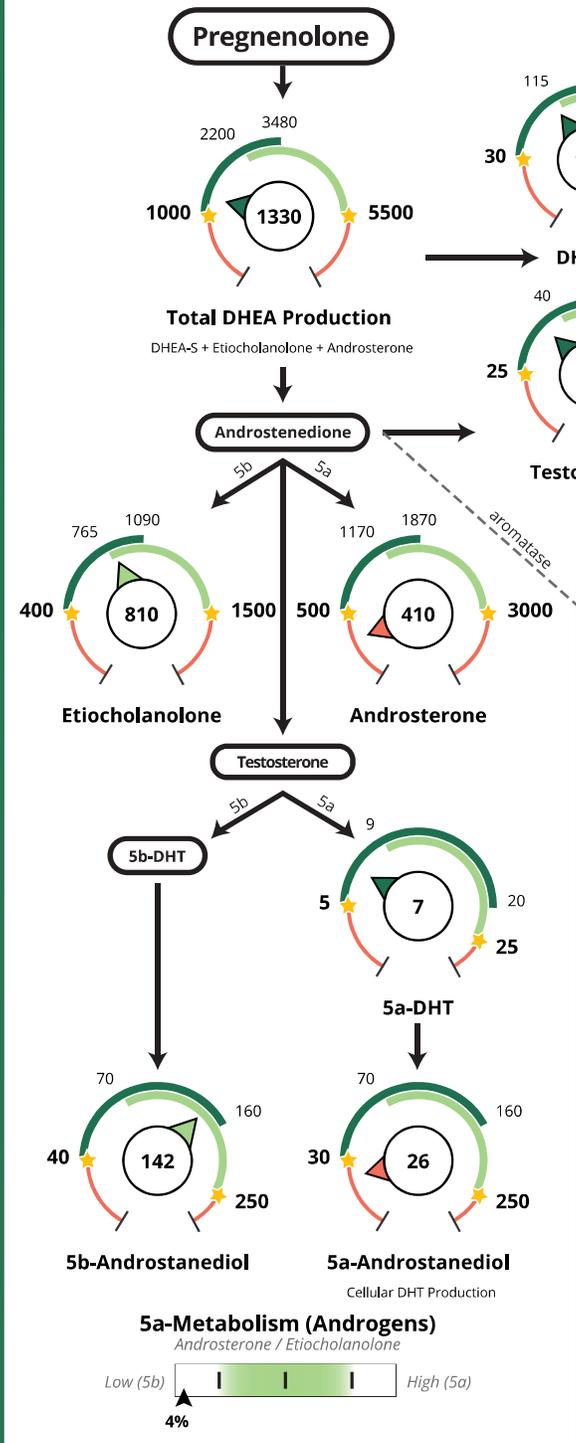
Hormone Testing Summary

● Normal, Age 18 - 40 (Androgens) ● Age 41 - 60+ (Androgens) ● Out of Range ★ Edge of Range

For an expanded view of results, see pages 2 & 3. For interpretive support, see *About Your Results* pages.



Androgens



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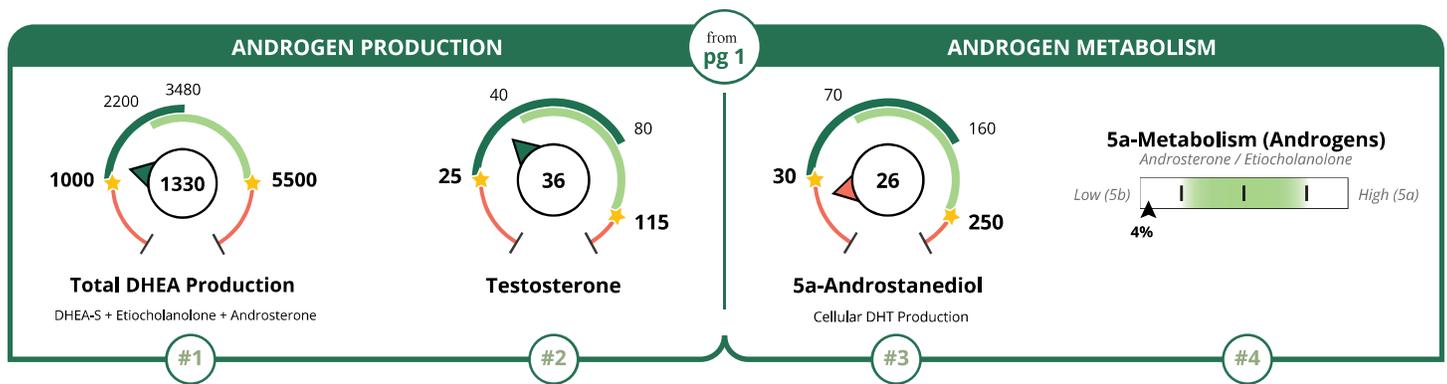
Sex Hormones & Metabolites

TEST	RESULT	UNITS	NORMAL RANGE
Progesterone Metabolites (Urine)			
b-Pregnanediol	Within range	175.7	ng/mg 75 - 400
a-Pregnanediol	Low end of range	24.0	ng/mg 20 - 130
Estrogens and Metabolites (Urine)			
Estrone (E1)	Above range	17.96	ng/mg 4 - 16
Estradiol (E2)	Above range	2.42	ng/mg 0.5 - 2.2
Estriol (E3)	Within range	5.6	ng/mg 2 - 8
2-OH-E1	Within range	2.08	ng/mg 0 - 5.9
4-OH-E1	Within range	0.60	ng/mg 0 - 0.8
16-OH-E1	Within range	1.00	ng/mg 0 - 1.2
2-Methoxy-E1	Within range	1.25	ng/mg 0 - 2.8
2-OH-E2	Within range	0.31	ng/mg 0 - 1.2
4-OH-E2	Within range	0.21	ng/mg 0 - 0.25
Total Estrogen	Within range	31.4	ng/mg 10 - 34
Metabolite Ratios (Urine)			
2-OH / 16-OH-E1 Balance	Below range	2.08	ratio 2.85 - 9.88
2-OH / 4-OH-E1 Balance	Below range	3.47	ratio 6.44 - 12.6
2-Methoxy / 2-OH Balance	Within range	0.60	ratio 0.4 - 0.7
Androgens and Metabolites (Urine)			
DHEA-S	Within range	110.0	ng/mg 30 - 1500
Androsterone	Below range	410.0	ng/mg 500 - 3000
Etiocholanolone	Within range	809.7	ng/mg 400 - 1500
Testosterone	Within range	36.03	ng/mg 25 - 115
5a-DHT	Within range	7.0	ng/mg 5 - 25
5a-Androstanediol	Below range	26.0	ng/mg 30 - 250
5b-Androstanediol	Within range	142.0	ng/mg 40 - 250
Epi-Testosterone	Within range	41.2	ng/mg 25 - 115

"Normal range" shown above refers to the overall range across all ranges, which lands between the stars on the dials. Age-dependent ranges are now included on the DUTCH dials on page 2.

About Your Results | Androgens

The following *About Your Results* sections include key DUTCH report elements from page 1 to aid your interpretation.



Androgen-related Patient or Sample Comments:

#1. Assess adrenal androgen levels (Total DHEA)

- The total DHEA production is **1,330 ng/mg**, which is within the range for men who are 41 and older, but towards the lower end of the overall range. If paired with low testosterone or low 5a-androstanediol, this may contribute to a low androgen picture.

#2. Assess testosterone levels

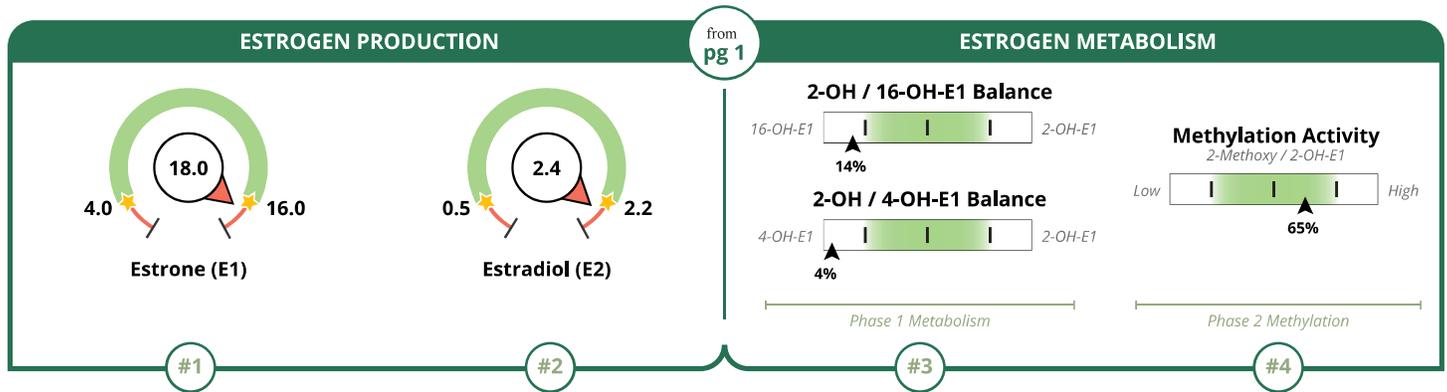
- Testosterone is **36.0 ng/mg**, which is within the optimal range for men who are 41 and older, but on the lower end. If paired with low 5a-androstanediol, this may contribute to low androgen symptoms.

#3. Assess cellular production of 5a-DHT via 5a-androstanediol

- 5a-Androstanediol is **26.0 ng/mg**, which is below the range for men of any age. 5a-Androstanediol reflects the tissue activity of 5a-DHT (the most potent androgen).

#4. Assess if there is a preference for the more potent alpha metabolism of the androgens

- 5a-Metabolism of androgens is higher than only **4.00%** of the population, which is below the range. This indicates a preference for less androgenic pathway. If paired with low androgens, this may contribute to low androgen symptoms.



Estrogen-related Patient or Sample Comments:

#1. Assess estrogen levels

- Estrone (E1) is a weak estrogen compared to E2. In this case the E1 is **18.0 ng/mg**, which is above range. This may contribute to high estrogen symptoms.
- Estradiol (the most potent estrogen) is **2.42 ng/mg**, which is above the optimal range.

#2. Assess the conversion of testosterone to estrogen (via aromatase)

- In males, E2 levels come from conversion of circulating testosterone via the aromatase enzyme. Reviewing the E2 level can give insight into circulating testosterone and aromatase activity. The strongest influence on aromatase activity is body fat percentage.
- The patient's BMI is between 25 and 30. When paired with obesity, inflammation, or high insulin it may contribute to the upregulation of aromatase, resulting in above range estradiol.

#3. Assess 2-OH preference in phase 1 estrogen metabolism

- The 2-OH/16-OH-E1 is higher than only **14.0%** of the population, which is below the optimal range. This indicates a preference for the estrogenic 16-OH-E1 metabolite compared to the beneficial 2-OH-E1 metabolite. The 16-OH preference may be associated with estrogenic activity and high estrogen symptoms.
- The 2-OH/4-OH-E1 is higher than only **4.00%** of the population, which is below the optimal range. This indicates a preference for the potentially genotoxic (DNA damaging) 4-OH-E1 metabolite compared to the beneficial 2-OH-E1 metabolite. The 4-OH preference may be associated with oxidative stress.

#4. Assess methylation of reactive 2-OH catechol estrogens

- The methylation activity is higher than **65.0%** of the population, which is within the optimal range. This indicates optimal estrogen methylation, which is beneficial for efficient estrogen detoxification.

The previous "About Your Results" pages look at core insights for the DUTCH report shown on the Hormone Testing Summary page, all of which are worth considering for most patients. Next, "Advanced Insights" cover additional features within the DUTCH test that require reviewing the pages after the summary page. These concepts are more complex but can be highly relevant for some patients. Review the concepts and look for patient-specific comments, when notable, in bullets.

ANDROGENS

#1. Assess if the DHEA-S is relatively lower than the Total DHEA

DHEA-S is primarily produced in the adrenals through sulfation. Inflammation can inhibit sulfation, lowering DHEA-S levels and diverting DHEA metabolism toward 5a- and 5b-reductase pathways, resulting in higher etiocholanolone (5b-metabolite) and androsterone (5a-metabolite) levels relative to DHEA-S. Review the patient's results to assess if this pattern is present.

#2. Assess the androgen pattern to determine if urine testosterone may not accurately reflect systemic levels (UGT2B17 deletion)

- This advanced topic is only relevant if the patient has low testosterone (T) with other specific patterns of androgen metabolites, especially when levels of Epi-T (see page 3) are much higher than T on the DUTCH Test. In patients that do have a suspicious pattern, urine testosterone may underestimate true testosterone levels. This patient's results do NOT indicate a reason to be suspicious of the urine testosterone levels. For information on this topic, see this [video](#)

#3. While 5a-androstanediol best represents cellular 5a-DHT production, assess if 5a-DHT offers additional insight into androgenic activity

5a-DHT is testosterone's active metabolite and is three times more potent than testosterone. If elevated it may contribute to androgen excess symptoms. Research shows 5a-androstanediol may be a better marker of 5a-DHT tissue activity, but the 5a-DHT result may provide additional insight. Review the 5a-DHT result in context of other androgens and androgenic symptoms for a deeper understanding of the androgen results.

ESTROGEN & PROGESTERONE

#1. Assess whether E1, E3, or 16-OH-E1 add more insight into overall estrogenic activity

While E2 is the most potent estrogen, other estrogens - such as estrone (E1), 16-hydroxyestrone (16-OH-E1), and estriol (E3) - also contribute to overall estrogenic activity.

E1 is less potent than E2 but can still impact total estrogenic load and can be converted to E2 as needed. 16-OH-E1 is weaker than E2 but may exert significant estrogenic effects, depending on the tissue in which it is produced. E3 is a weak estrogen with mild estrogenic effects and may have anti-inflammatory properties.

Higher levels of these additional estrogens relative to E2 may enhance overall estrogenic activity, while lower levels may result in reduced estrogenic effects.

#2. Assess progesterone production

In males, progesterone metabolites measured in urine are primarily of adrenal origin. B-pregnanediol is the best marker of total progesterone. High b-pregnanediol may be associated with increased stress or inflammation. Low b-pregnanediol may accompany reduced adrenal cortisol output, although the clinical significance of low progesterone in men is not well understood.

#3. Assess estrogen clearance through phase 1 and 2

About Your Results | Advanced Insights (continued)

By looking at the parent estrogens (E1, E2) and their breakdown products (2OH, 4OH, 16OH, and 2MeOHE1), we can see how quickly estrogen is being metabolized. If the parent estrogens are higher than the breakdown products, it means estrogen is clearing more slowly, which increases risk of estrogen excess symptoms. Balanced levels show normal clearance, while lower parent estrogens compared to breakdown products suggest faster clearance, decreasing the risk of estrogen excess symptoms.

Thank you for choosing DUTCH for your functional endocrinology testing needs!

Please review our DUTCH resources for information on reading the DUTCH test:

For DUTCH Overviews and Tutorials, click here: <https://dutchtest.com/tutorials>

To view the steroid pathway chart, click here: <https://dutchtest.com/steroid-pathway>

Finally, please review the patient's results along with their requisition form. It is designed to capture relevant medications, symptoms, diagnoses, sample collection, and notes that may be helpful in interpreting the results.

Additional Comments

Reference Range Percentiles

Reference ranges are developed by testing thousands of healthy individuals, while excluding results from outliers or those on impactful medications. A percentile approach is applied, as is done with most labs. Classic reference ranges use the 95th percentile as the upper end of range and the 5th percentile as the lower end of range. Our DUTCH ranges uses the percentiles found in the table below. We feel these ranges reflect the more optimal range sought in functional medicine practices. The table below shows the percentiles used for the reference range of each analyte on the DUTCH report:

Male Reference Ranges (Updated 10.15.2025)									
	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	10%	90%	75	400	Cortisol U0 (Mid-Sleep)	0	90%	0	15
a-Pregnanediol	10%	90%	20	130	Cortisol U1 (Waking)	20%	90%	13	80
Estrone (E1)	10%	90%	4	16	Cortisol U2 (+2 Hours)	20%	90%	35	180
Estradiol (E2)	10%	90%	0.5	2.2	Cortisol U3 (Dinner)	20%	90%	10	45
Estriol (E3)	10%	90%	2	8	Cortisol U4 (Bedtime)	0	90%	0	20
2-OH-E1	0	90%	0	5.9	Cortisone U0 (Mid-Sleep)	0	90%	0	59
4-OH-E1	0	90%	0	0.8	Cortisone U1 (Waking)	20%	90%	40	160
16-OH-E1	0	90%	0	1.2	Cortisone U2 (+2 Hours)	20%	90%	80	240
2-Methoxy-E1	0	90%	0	2.8	Cortisone U3 (Dinner)	20%	90%	40	130
2-OH-E2	0	90%	0	1.2	Cortisone U4 (Bedtime)	0	90%	0	70
4-OH-E2	0	90%	0	0.25	Cortisol Clearance Rate (CCR)	20%	80%	8.5	17.5
2-16-ratio	20%	80%	2.85	9.88	Melatonin (6-OHMS)	20%	90%	10	85
2-4-ratio	20%	80%	6.44	12.6	8-OHdG	0	90%	0	8.8
2Me-2OH-ratio	20%	80%	0.4	0.7	Methylmalonate	0	90%	0	3.5
DHEA-5	20%	90%	30	1500	Xanthurenate	0	90%	0.2	1.9
Androsterone	20%	80%	500	3000	Kynurenate	0	90%	1	6.6
Etiocholanolone	20%	80%	400	1500	b-Hydroxyisovalerate	0	90%	0	18
Testosterone	20%	90%	25	115	Pyroglutamate	10%	90%	38	83
5a-DHT	20%	90%	5	25	Indican	0	90%	0	131
5a-Androstenediol	20%	90%	30	250	Homovanillate	10%	95%	4	16
5b-Androstenediol	20%	90%	40	250	Vanilmandelate	10%	95%	2.5	7.5
Epi-Testosterone	20%	90%	25	115	Quinolate	0	90%	0	12.5
a-THF	20%	90%	175	700	Calculated Values				
b-THF	20%	90%	1750	4000	Total DHEA Production	20%	80%	1000	5500
b-THE	20%	90%	2350	5800	Total Estrogens	10%	90%	10	34
					Metabolized Cortisol	20%	90%	4550	10000
					24hr Free Cortisol	20%	90%	75	300
					24hr Free Cortisone	20%	90%	220	550
% = population percentile: Example - a high limit of 90% means results higher than 90% of the men tested for the reference range will be designated as "high."									