dutchplus®

PATIENT INFORMATION

Ordering Provider:
Test Provider MD

Male Sample Report
123 A Street
Sometown , CA 90266

DOB: 1966-05-06
Age: 59
Sex: Male

Accession # 01134888

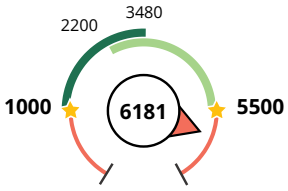
Collection Dates:
2026-01-18 (S4 S5 U3 U4)
2026-01-19 (S1 S2 S3 U1 U2)

Hormone Testing Summary

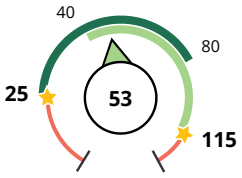
Normal, Age 18 - 40 (Androgens) | Age 41 - 60+ (Androgens) | Out of Range | Edge of Range

For an expanded view of results, see pages 2 through 6. For interpretive support, see *About Your Results* pages.

ANDROGEN PRODUCTION

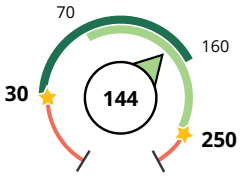


Total DHEA Production
DHEA-S + Etiocholanolone + Androsterone



Testosterone

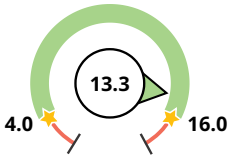
ANDROGEN METABOLISM



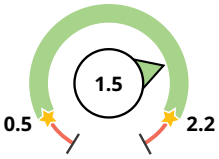
5a-Androstanediol
Cellular DHT Production

5a-Metabolism (Androgens)
Androsterone / Etiocholanolone

ESTROGEN PRODUCTION



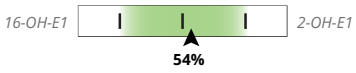
Estrone (E1)



Estradiol (E2)

ESTROGEN METABOLISM

2-OH / 16-OH-E1 Balance



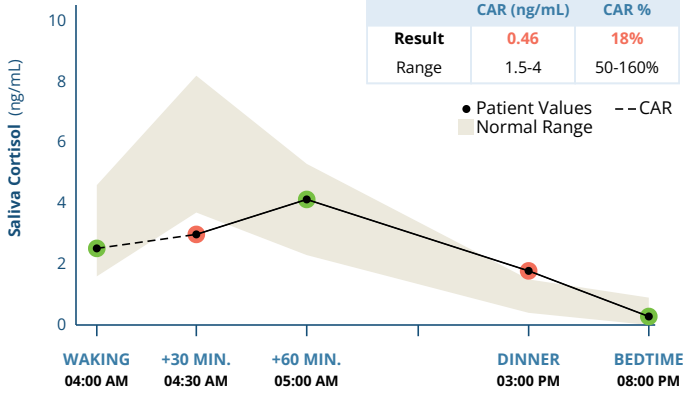
2-OH / 4-OH-E1 Balance

Phase 1 Metabolism

Methylation Activity
2-Methoxy / 2-OH-E1

Phase 2 Methylation

FREE CORTISOL with CORTISOL AWAKENING RESPONSE (CAR)

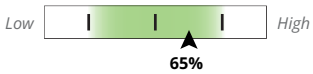


	CAR (ng/mL)	CAR %
Result	0.46	18%
Range	1.5-4	50-160%

● Patient Values – – CAR
Normal Range

CORTISOL METABOLISM

Cortisol Clearance Rate
THF + THE / Cortisol + Cortisone



Cortisol Metabolism

Saliva Cortisol Total
Sum of S1 - 5

Metabolized Cortisol
Total Cortisol Production (THF + THE)

Organic Acid Tests (OATs) Suggests the Following Possible Imbalances | see page 6 for details

Watch | Needs Attention

B12 Deficiency | Neurotransmitters | Neuroinflammation | Melatonin

Androgens

Pregnenolone

Total DHEA Production
DHEA-S + Etiocholanolone + Androsterone
2200 | 3480 | 1000 | 6181 | 5500

DHEA-S
115 | 820 | 30 | 2445 | 1500

Androstenedione

Testosterone
40 | 80 | 25 | 53 | 115

5b | 5a

Etiocholanolone
765 | 1090 | 400 | 892 | 1500

Androsterone
1170 | 1870 | 500 | 2844 | 3000

aromatase

Testosterone

5b | 5a

5b-DHT

5a-DHT
9 | 5 | 11 | 20 | 25

5b-Androstanediol
70 | 160 | 40 | 190 | 250

5a-Androstanediol
70 | 160 | 30 | 144 | 250

Cellular DHT Production

5a-Metabolism (Androgens)
Androsterone / Etiocholanolone

Low (5b) — High (5a)
95%

Estrogens

Estrone (E1)
13.3 | 4.0 | 16.0

17b-HSD

Estradiol (E2)
1.5 | 0.5 | 2.2

CYP3A4

Estriol (E3)
2.7 | 2.0 | 8.0

CYP1A1 (protective)
CYP1B1
CYP3A4
17b-HSD

Phase 1 Estrogen Metabolism

2-OH-E1
1.7 | 0.0 | 5.9

4-OH-E1
0.1 | 0.0 | 0.8

16-OH-E1
0.3 | 0.0 | 1.2

Methylation, Glutathione Detox

QUINONE
(reactive)
If not **detoxified**, 4-OH-E1 can bind to and damage DNA

COMT Methylation

Phase 2 Estrogen Metabolism

Methylation Activity
2-Methoxy / 2-OH-E1
Low — High
84%

2-Methoxy-E1
1.3 | 0.0 | 2.8

2-OH / 16-OH-E1 Balance
16-OH-E1 — *2-OH-E1*
54%

2-OH / 4-OH-E1 Balance
4-OH-E1 — *2-OH-E1*
82%

The Phase 1 Estrogen Metabolism Pie Chart has been replaced by the 2-OH/16-OH-E1 and 2-OH/4OH-E1 slider bars (left). See this video for an explanation with examples. This change aligns the DUTCH report best with published scientific research. See our recent publication, found here.

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Accession # 01134888

Male Sample Report
123 A Street
Sometown , CA 90266

DOB: 1966-05-06
Age: 59
Sex: Male

Collection Times:

2026-01-19 04:00AM (S1)
2026-01-19 04:30AM (S2)
2026-01-19 05:00AM (S3)
2026-01-18 03:00PM (S4)
2026-01-18 08:00PM (S5)
2026-01-19 04:00AM (U1)
2026-01-19 06:00AM (U2)
2026-01-18 03:00PM (U3)
2026-01-18 08:00PM (U4)

Ordering Provider:

Test Provider MD

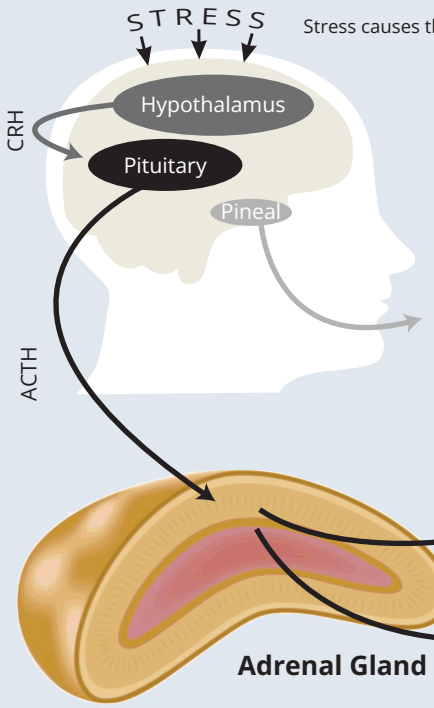
Sex Hormones & Metabolites

TEST		RESULT	UNITS	NORMAL RANGE
Progesterone Metabolites (Urine)				
b-Pregnanediol	Within range	175.7	ng/mg	75 - 400
a-Pregnanediol	Within range	69.2	ng/mg	20 - 130
Estrogens and Metabolites (Urine)				
Estrone (E1)	Within range	13.33	ng/mg	4 - 16
Estradiol (E2)	Within range	1.49	ng/mg	0.5 - 2.2
Estriol (E3)	Within range	2.7	ng/mg	2 - 8
2-OH-E1	Within range	1.69	ng/mg	0 - 5.9
4-OH-E1	Within range	0.13	ng/mg	0 - 0.8
16-OH-E1	Within range	0.28	ng/mg	0 - 1.2
2-Methoxy-E1	Within range	1.25	ng/mg	0 - 2.8
2-OH-E2	Within range	0.18	ng/mg	0 - 1.2
4-OH-E2	Within range	0.06	ng/mg	0 - 0.25
Total Estrogen	Within range	21.1	ng/mg	10 - 34
Metabolite Ratios (Urine)				
2-OH / 16-OH-E1 Balance	Within range	6.04	ratio	2.85 - 9.88
2-OH / 4-OH-E1 Balance	Above range	13.00	ratio	6.44 - 12.6
2-Methoxy / 2-OH Balance	Above range	0.74	ratio	0.4 - 0.7
Androgens and Metabolites (Urine)				
DHEA-S	Above range	2445.4	ng/mg	30 - 1500
Androsterone	Within range	2844.4	ng/mg	500 - 3000
Etiocholanolone	Within range	891.5	ng/mg	400 - 1500
Testosterone	Within range	52.96	ng/mg	25 - 115
5a-DHT	Within range	10.8	ng/mg	5 - 25
5a-Androstanediol	Within range	143.6	ng/mg	30 - 250
5b-Androstanediol	Within range	190.4	ng/mg	40 - 250
Epi-Testosterone	Within range	62.9	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.

EXPANDED CORTISOL & ADRENAL HORMONES

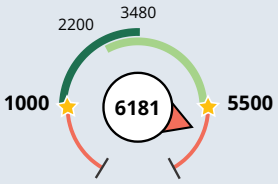
Normal, Age 18 - 40 (Androgens) | Age 41 - 60+ (Androgens) | Out of Range | Edge of Range



Stress causes the brain to release ACTH, which stimulates the adrenal glands to make hormones including DHEA and Cortisol.

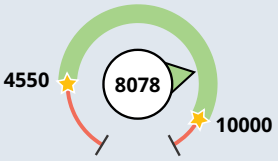
Melatonin - Waking

6-OH-Melatonin-Sulfate



Total DHEA Production

DHEA-S + Etiocholanolone + Androsterone

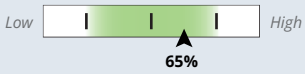


Metabolized Cortisol

Total Cortisol Production (THF + THE)

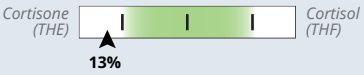
Cortisol Clearance Rate

THF + THE / Cortisol + Cortisone



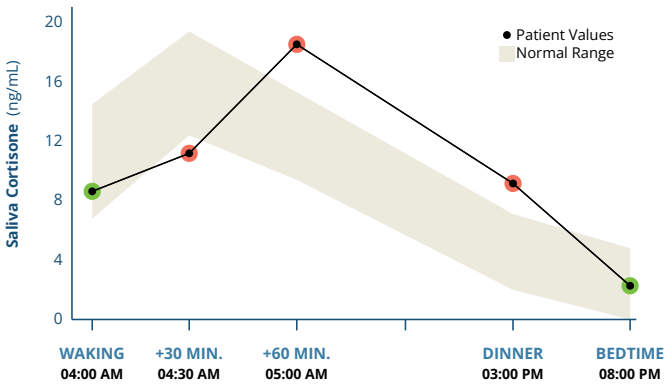
Systemic Preference

Cortisol / Cortisone Metabolites



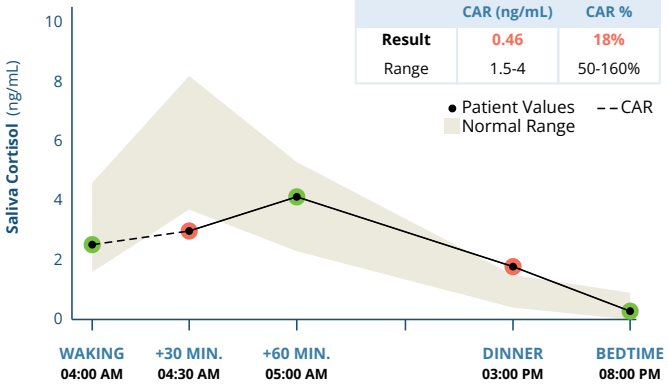
NOTE: This 11b-HSD index measures the balance of cortisol and cortisone metabolites which best reflects the overall balance of active cortisol and inactive cortisone systemically.

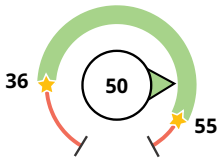
Saliva Free Cortisone Pattern



Saliva Free Cortisol Pattern

	CAR (ng/mL)	CAR %
Result	0.46	18%
Range	1.5-4	50-160%





Saliva Cortisone Total

Sum of S1 - 5

Cortisol and Cortisone interconvert (11b-HSD)

Saliva Cortisol Total

Sum of S1 - 5

dutchplus®

Accession # 01134888

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123 A Street
Sometown , CA 90266
DOB: 1966-05-06
Age: 59
Sex: Male

Collection Times:
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2026-01-19 04:00AM (U1)
2026-01-19 06:00AM (U2)
2026-01-18 03:00PM (U3)
2026-01-18 08:00PM (U4)

Ordering Provider:

Test Provider MD

Adrenal Hormones & Metabolites

TEST		RESULT	UNITS	NORMAL RANGE
Free Cortisol and Cortisone (Saliva)				
Cortisol Awakening Response (CAR)	Below range	0.46	ng/mL	1.5 - 4
Cortisol (S1) - Waking	Within range	2.52	ng/mL	1.6 - 4.6
Cortisol (S2) - +30 Min.	Below range	2.98	ng/mL	3.7 - 8.2
Cortisol (S3) - +60 Min.	Within range	4.13	ng/mL	2.3 - 5.3
Cortisol (S4) - Dinner	Above range	1.78	ng/mL	0.4 - 1.5
Cortisol (S5) - Bedtime	Within range	0.28	ng/mL	0 - 0.9
Cortisone (S1) - Waking	Within range	8.63	ng/mL	6.8 - 14.5
Cortisone (S2) - +30 Min.	Below range	11.19	ng/mL	12.4 - 19.4
Cortisone (S3) - +60 Min.	Above range	18.53	ng/mL	9.4 - 15.3
Cortisone (S4) - Dinner	Above range	9.16	ng/mL	2 - 7.1
Cortisone (S5) - Bedtime	Within range	2.27	ng/mL	0 - 4.8
Saliva Cortisol Total (S1 - 5)	Within range	11.69	ng/mL	9.6 - 19.3
Saliva Cortisone Total (S1 - 5)	Within range	49.79	ng/mL	36 - 55
Creatinine (Urine)				
Creatinine (U1) - Waking	Within range	0.50	mg/ml	0.3 - 3
Creatinine (U2) - +2 Hours	Within range	0.72	mg/ml	0.3 - 3
Creatinine (U3) - Dinner	Within range	0.48	mg/ml	0.3 - 3
Creatinine (U4) - Bedtime	Within range	0.34	mg/ml	0.3 - 3
Cortisol Metabolites and DHEA-S (Urine)				
a-Tetrahydrocortisol (a-THF)	Within range	364.0	ng/mg	175 - 700
b-Tetrahydrocortisol (b-THF)	Within range	2619.0	ng/mg	1750 - 4000
b-Tetrahydrocortisone (b-THE)	Within range	5095.0	ng/mg	2350 - 5800
Metabolized Cortisol (THF + THE)	Within range	8078.0	ng/mg	4550 - 10000
DHEA-S	Above range	2445.4	ng/mg	30 - 1500
Cortisol Clearance Rate (CCR)	Within range	131.4		80 - 178

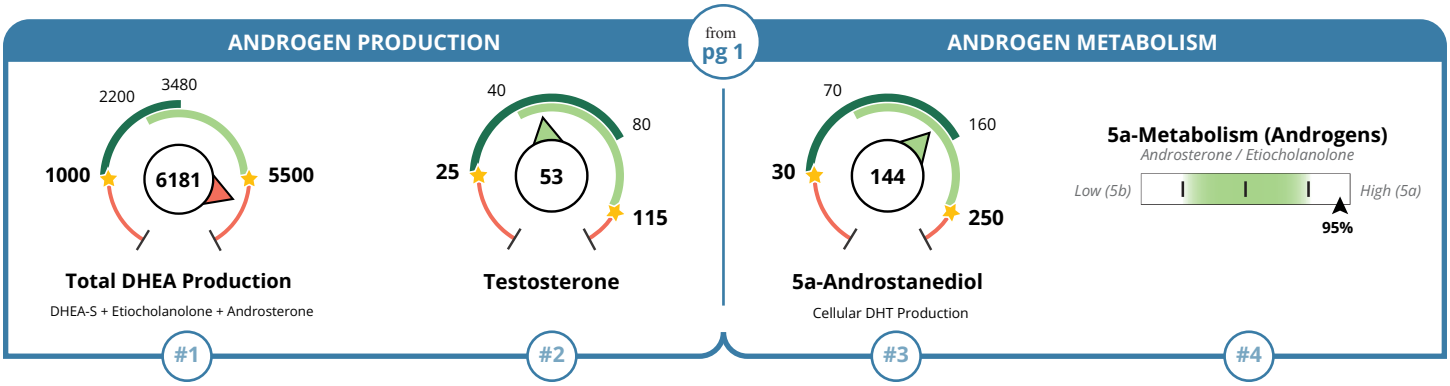
Organic Acid Tests (OATs)

TEST		RESULT	UNITS	NORMAL RANGE
Nutritional Organic Acids (Urine)				
Vitamin B12 Marker - May be deficient if high				
Methylmalonate (MMA)	Above range	4.9	ug/mg	0 - 3.5
Vitamin B6 Markers - May be deficient if high				
Xanthurenate	Within range	1.23	ug/mg	0.2 - 1.9
Kynurenate	Within range	5.4	ug/mg	1 - 6.6
Biotin Marker - May be deficient if high				
b-Hydroxyisovalerate	Within range	7.9	ug/mg	0 - 18
Glutathione Marker - May be deficient if high				
Pyroglutamate	Below range	0.0	ug/mg	38 - 83
Gut Marker - Potential gut putrefaction or dysbiosis if high				
Indican	Within range	90.4	ug/mg	0 - 131
Neuro-Related Markers (Urine)				
Dopamine Metabolite				
Homovanillate (HVA)	Low end of range	4.4	ug/mg	4 - 16
Norepinephrine/Epinephrine Metabolite				
Vanilmandelate (VMA)	High end of range	7.3	ug/mg	2.5 - 7.5
Neuroinflammation Marker				
Quinolinate	Above range	13.2	ug/mg	0 - 12.5
Additional Markers (Urine)				
Melatonin - Waking				
6-OH-Melatonin-Sulfate	Below range	1.3	ng/mg	10 - 85
Oxidative Stress / DNA Damage				
8-Hydroxy-2-deoxyguanosine (8-OHdG)	Within range	3.8	ng/mg	0 - 8.8

- The MMA is above the range. This may indicate vitamin B12 or adenosylcobalamin deficiency. B12 is important for phase 2 methylation (estrogen detox), neurotransmitter synthesis, and other key processes.
- The pyroglutamate is low. Although the majority of patients have higher levels than this result, the significance of low urinary pyroglutamate has not been established in scientific literature.
- The quinolinate is above the normal range. This increase may be in response to high cortisol and inflammation, potentially contributing to mood and sleep dysregulation through neuroinflammation. Tryptophan taken within 72 hours before testing can also raise quinolinate in the urine without raising it in circulation.
- The waking urinary 6-OH-Melatonin-Sulfate is low. This reflects low overnight production of melatonin. This may be implicated in poor sleep and insomnia.

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 **6,181 ng/mg**, which is above the overall range, meaning it is high for men of any age.

#2. Assess testosterone levels.

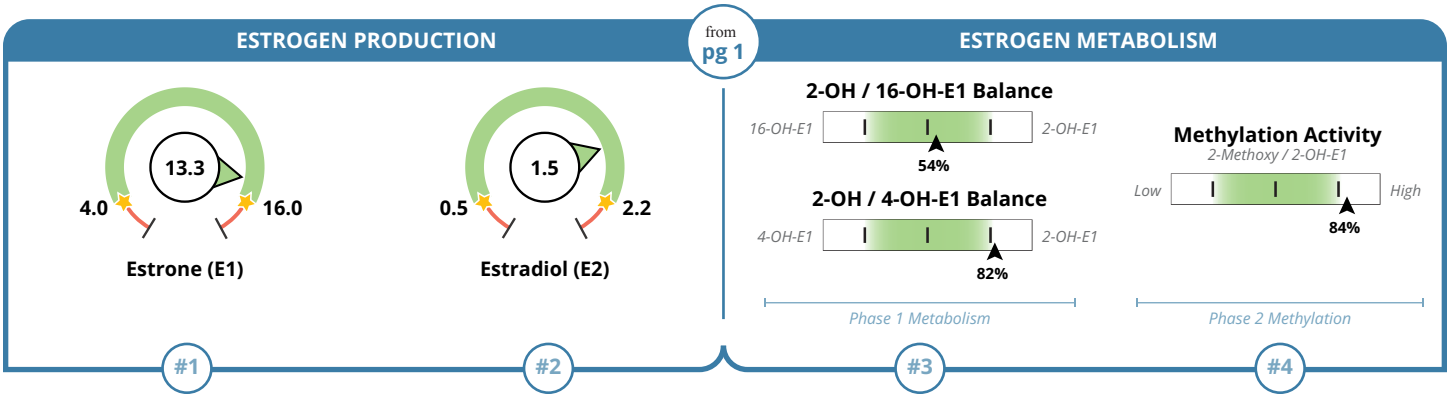
- Testosterone is **53.0 ng/mg**, which is in the range for men 41 and older.

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

- 5a-Androstanediol is **144 ng/mg**, which is within optimal range for men 41 and older. 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.

- The 5a-Metabolism of androgens is higher than **95.0%** of the population, which is above the range. This indicates a preference for the more androgenic pathway. If paired with high androgens, this may contribute to androgen excess symptoms.



Estrogen-related Patient or Sample Comments:

#1. Assess estrogen levels.

- The estrone (E1) is **13.3 ng/mg,** which is within the optimal range. E1 is the most abundant estrogen but is significantly less potent then estradiol (E2).
- Estradiol (E2) is **1.49 ng/mg**, which is within the optimal range. E2 is the most potent estrogen and its levels are often related to symptoms.

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

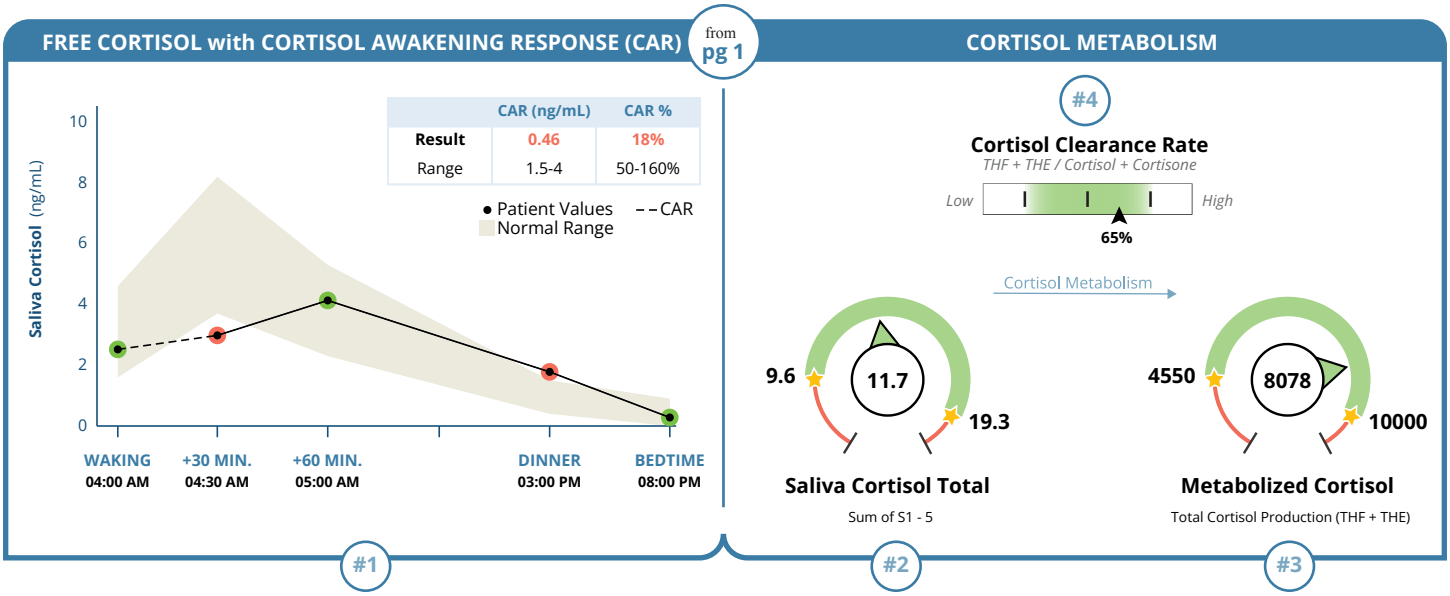
- In males, E2 levels come from conversion of circulating testosterone via the aromatase enzyme. Reviewing the E2 level can give insight into circulating testosterone and aromatase activity. The strongest influence on aromatase activity is body fat percentage.

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

- The 2-OH/16-OH-E1 is higher than **54.0%** of the population, which is within the optimal range. This indicates a balance between the beneficial 2-OH-E1 metabolite and the estrogenic 16-OH-E1 metabolite.
- The 2-OH/4-OH-E1 is higher than **82.0%** of the population, which is above the optimal range. This indicates a preference for the beneficial 2-OH-E1 metabolite compared to the potentially genotoxic (DNA damaging) 4-OH-E1 metabolite.

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

- The methylation activity is higher than **84.0%** of the population, which is above the optimal range. This indicates fast estrogen methylation, which is beneficial for efficient estrogen detoxification.



Cortisol-related Patient or Sample Comments:

#1. Assess the daily free cortisol pattern including the CAR.

- One or more points on the Saliva Free Cortisol Pattern are out of the optimal range. Note the time of day and whether out-of-range results are low or high at each point.
- The CAR is **18.0%**, which is below the optimal range. A low CAR may indicate chronic stress or sleep issues. Review the morning sample times carefully. The first two samples of the day are used to calculate the CAR and should be taken immediately after waking and 30 minutes after waking.

#2. Assess the daily total (sum of S1-S5) of free cortisol in circulation.

- The Saliva Cortisol Total is **11.7 ng/mL**, which is within the optimal range. This indicates normal overall cortisol levels.

#3. Assess the total cortisol produced by the adrenal glands (Metabolized Cortisol.)

- The Metabolized Cortisol, which reflects the total cortisol output for the day, is **8,078 ng/mg**, which is within the optimal range.

#4. Assess the rate of cortisol clearance from the body.

- The Cortisol Clearance Rate is higher than **65.0%** of the population, which is within the optimal range. This indicates that cortisol and cortisone are being metabolized at a normal rate.

ANDROGENS

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.

#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.

#4. Assess whether any of the androgen-related organic acids are out of range.

Androgen levels can be influenced by sleep and oxidative stress. Imbalances in glutathione, melatonin, and oxidative stress markers, if present, will be commented on here. This may help identify contributing factors affecting androgen markers.

- The Melatonin result is **1.30 ng/mg**, which is low. Low melatonin has been associated with increased oxidative stress, poor sleep. Poor sleep and oxidative stress are associated with impaired testicular function and testosterone levels.

ESTROGEN & PROGESTERONE

#1. Assess whether E1, E3, or Total Estrogen levels add more insight into overall estrogenic activity.

While E2 is the most potent estrogen, other estrogens such as estrone (E1), also contribute to overall estrogenic activity. Additionally, examining Total Estrogens (listed on the Sex Hormones & Metabolites page) can provide insight into overall estrogen production, which may not be fully reflected in the E2 result alone.

E1 is 10% as potent as E2 but is typically more abundant. This makes it a significant contributor to estrogenic symptoms (high or low). While all estrogens are potent immune stimulators, E1 may promote more inflammatory cytokine production than other estrogens. In cases where E1 is significantly different from E2, a note will be here describing the potential impact.

E3 is a weak estrogen that may have anti-inflammatory properties. For those using E3 therapy, since the route of administration can influence how the test result is interpreted, notes on E3 supplements (such as creams or pills) will be shown here.

The Total Estrogen level should be viewed secondarily to the most potent estrogen levels like E1 and E2, which typically match the patient presentation best. For example, Total Estrogen can be high with robust, healthy estrogen metabolism. Therefore, its levels do not always indicate a cause for high or low estrogen-related symptoms. If out of range, the Total Estrogen level will be noted here.

#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.

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.

- The phase 1 estrogen metabolites are low compared to the primary estrogens (E1, E2). This indicates the primary estrogens may be metabolized more slowly through phase 1, which can be associated with a higher risk of estrogen excess conditions.

#4. Assess whether any of the estrogen-related organic acids are out of range.

Estrogen levels, metabolites, and metabolism patterns can be influenced by nutrient status, oxidative stress, and gut health. Imbalances in glutathione, B12, B6, gut dybiosis, and oxidative stress markers will be commented on here, if relevant for the patient. This may help identify contributing factors affecting estrogens.

ADRENAL

#1. Assess if cortisone (inactive) adds more insight to the free cortisol assessment.

Cortisol is an active adrenal glucocorticoid, while cortisone is an inactive "storage" form. In the saliva gland, a significant amount of cortisol is converted to cortisone before excretion into the saliva. Therefore, salivary cortisone should be considered a reflection or "shadow" of systemic cortisol. The degree to which this happens in an individual may vary. If free cortisone is significantly higher than free cortisol, it may indicate free cortisol levels were higher in circulation (serum) than the salivary free cortisol implies. If free cortisone is lower than free cortisol, this may indicate free cortisol levels were not as high in circulation (serum) as salivary free cortisol implies.

If the cortisone is significantly different from cortisol, there will be a bulleted comment below.

- In this case, free cortisone is somewhat higher than the free cortisol. To the degree that this is true, it may indicate the free cortisol levels were higher in circulation (serum) than the cortisol levels in the saliva imply.

#2. Assess if there is a whole-body preference for (inactive) cortisone or (active) cortisol.

The Systemic Preference slider reflects the balance between cortisol (THF) and cortisone (THE) metabolites and is influenced by systemic cortisol needs. The balance between THF and THE is the best estimation of the systemic balance of cortisol to cortisone. As these metabolites are processed through the liver, the body may shift to cortisol (THF) in response to acute stressors (e.g., immune activation or infection), or toward cortisone (THE) with chronic stress (e.g., long-term inflammation or illness). Review the patient's result to determine if they are out of range.

- The Systemic Preference slider is higher than only **13.0%** of the population, which is below the optimal range. This indicates significantly higher levels of cortisone metabolites compared to cortisol metabolites. If free cortisol levels are robust, this may be protective by turning off excess cortisol to balance tissue levels. If cortisol levels are low, this may contribute to low cortisol symptoms.

#3. Assess for anabolic-catabolic balance.

Androgens such as DHEA (assessed as Total DHEA Production) support tissue growth and repair, while cortisol promotes tissue breakdown. When DHEA is significantly higher than cortisol, it may suggest an anabolic state (favoring tissue building and repair). When DHEA is significantly lower than cortisol, it may suggest a catabolic state (favoring tissue breakdown).

- The Total DHEA Production is high compared to the Total Cortisol Production. Androgens promote tissue growth and repair, while cortisol promotes tissue breakdown. When androgens are significantly higher than cortisol, as in this case, it may suggest an anabolic (tissue repair and building) state.

#4. Assess whether any of the cortisol-related organic acids are out of range.

Cortisol can be impacted by inflammation, nutrient status, and sleep. Imbalances in B12, B6, melatonin, and neuroinflammation markers will be commented on here if relevant for the patient. This may help identify contributing factors affecting cortisol results.

- The melatonin is **1.30 ug/mg**, which is low. The bedtime cortisol level is also high, which can indicate stimulation and suppression of melatonin production.

- Melatonin is **1.30 ug/mg**, which is below the optimal range. In this case, the CAR is also below the optimal range. When sleep is significantly impaired, the CAR may be blunted or low. Improving sleep may also improve the CAR.

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 6.24.2026)

	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	10%	90%	75	400	Cortisol U0 (Mid-Sleep)	0	90%	0	23
a-Pregnanediol	10%	90%	20	130	Cortisol U1 (Waking)	20%	90%	25	130
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	70
4-OH-E1	0	90%	0	0.8	Cortisone U1 (Waking)	20%	90%	75	215
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	18.5
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-S	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-Androstanediol	20%	90%	30	250	Homovanillate	10%	95%	4	16
5b-Androstanediol	20%	90%	40	250	Vanilmandelate	10%	95%	2.5	7.5
Epi-Testosterone	20%	90%	25	115	Quinolinate	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."