



Accession # 01154546

Female Sample Report

DOB: 1987-11-06

Age: 37

Sex: Female

Last Menstrual Period:

2025-05-26

Collection Times:

2025-06-13 04:00AM (U1)

2025-06-13 06:00AM (U2)

2025-06-12 03:00PM (U3)

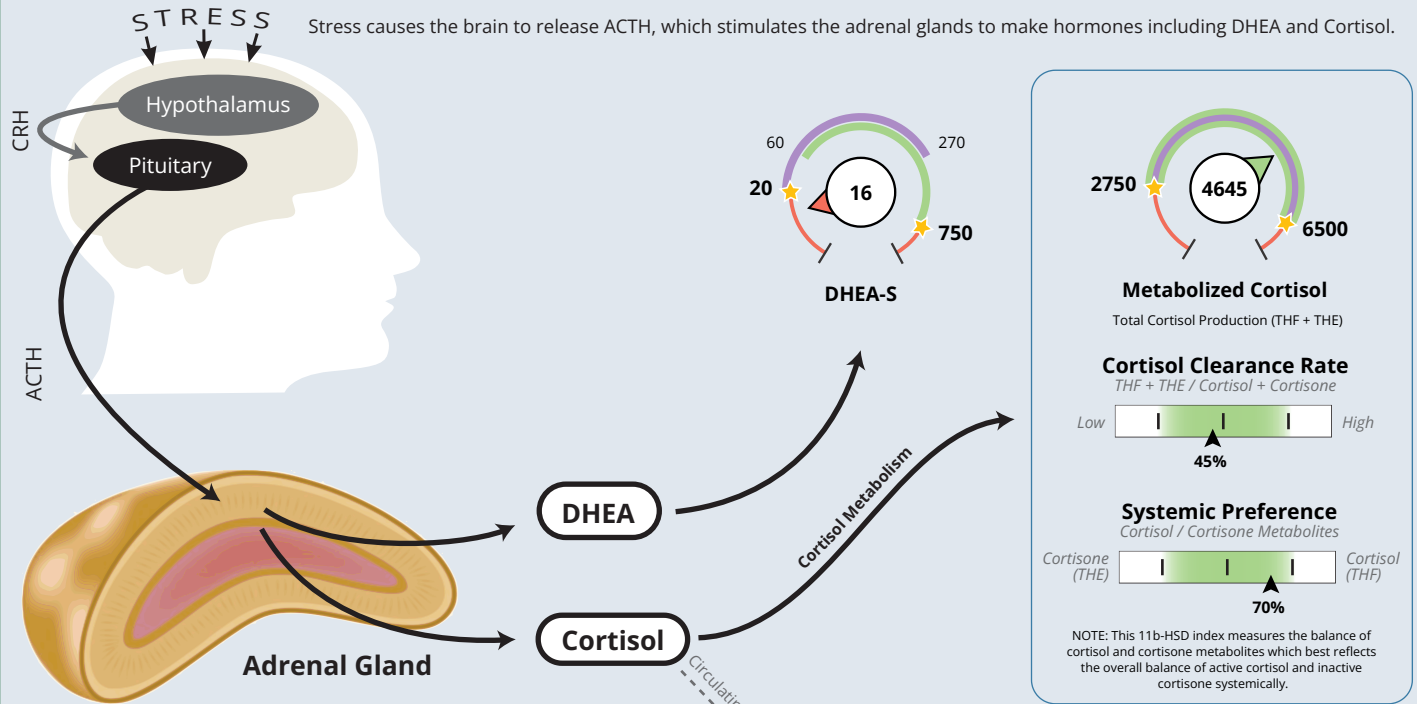
2025-06-12 08:00PM (U4)

Ordering Provider:

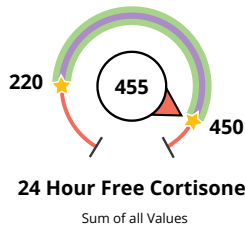
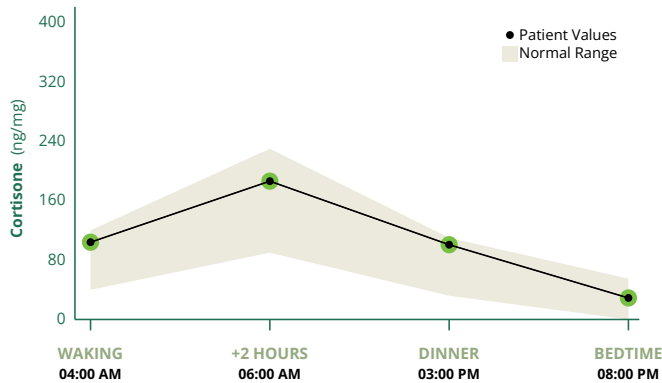
Test Provider MD

Adrenal Hormones & Metabolites

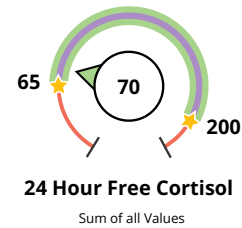
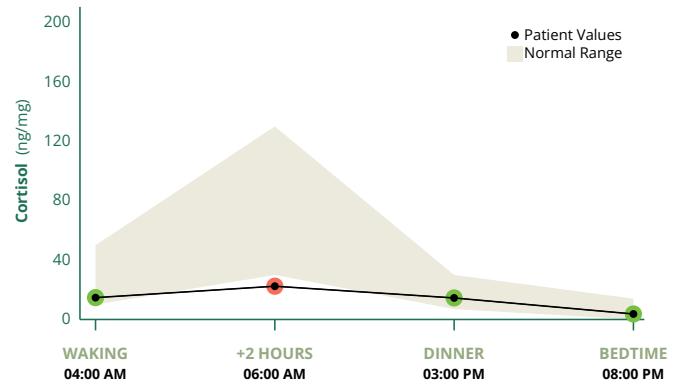
TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol (U1) - Waking	Low end of range	14.7	ng/mg	10 - 50
Cortisol (U2) - +2 Hours	Below range	22.4	ng/mg	30 - 130
Cortisol (U3) - Dinner	Within range	14.5	ng/mg	7 - 30
Cortisol (U4) - Bedtime	Within range	3.7	ng/mg	0 - 14
Cortisone (U1) - Waking	Within range	104.1	ng/mg	40 - 120
Cortisone (U2) - +2 Hours	Within range	186.3	ng/mg	90 - 230
Cortisone (U3) - Dinner	Within range	100.7	ng/mg	32 - 110
Cortisone (U4) - Bedtime	Within range	29.0	ng/mg	0 - 55
24 Hour Free Cortisol (Sum of all Values)	Low end of range	70.1	ng/mg	65 - 200
24 Hour Free Cortisone (Sum of all Values)	Above range	454.9	ng/mg	220 - 450
Creatinine (Urine)				
Creatinine (U1) - Waking	Within range	0.83	mg/ml	0.2 - 2
Creatinine (U2) - +2 Hours	Within range	0.67	mg/ml	0.2 - 2
Creatinine (U3) - Dinner	Within range	0.26	mg/ml	0.2 - 2
Creatinine (U4) - Bedtime	Within range	1.68	mg/ml	0.2 - 2
Cortisol Metabolites and DHEA-S (Urine)				
a-Tetrahydrocortisol (a-THF)	Within range	795.3	ng/mg	275 - 1160
b-Tetrahydrocortisol (b-THF)	Within range	1292.3	ng/mg	750 - 1800
b-Tetrahydrocortisone (b-THE)	Within range	2557.0	ng/mg	1550 - 3800
Metabolized Cortisol (THF + THE)	Within range	4645.0	ng/mg	2750 - 6500
DHEA-S	Below range	15.7	ng/mg	20 - 750
Cortisol Clearance Rate (CCR)	Within range	8.8		6 - 13.5



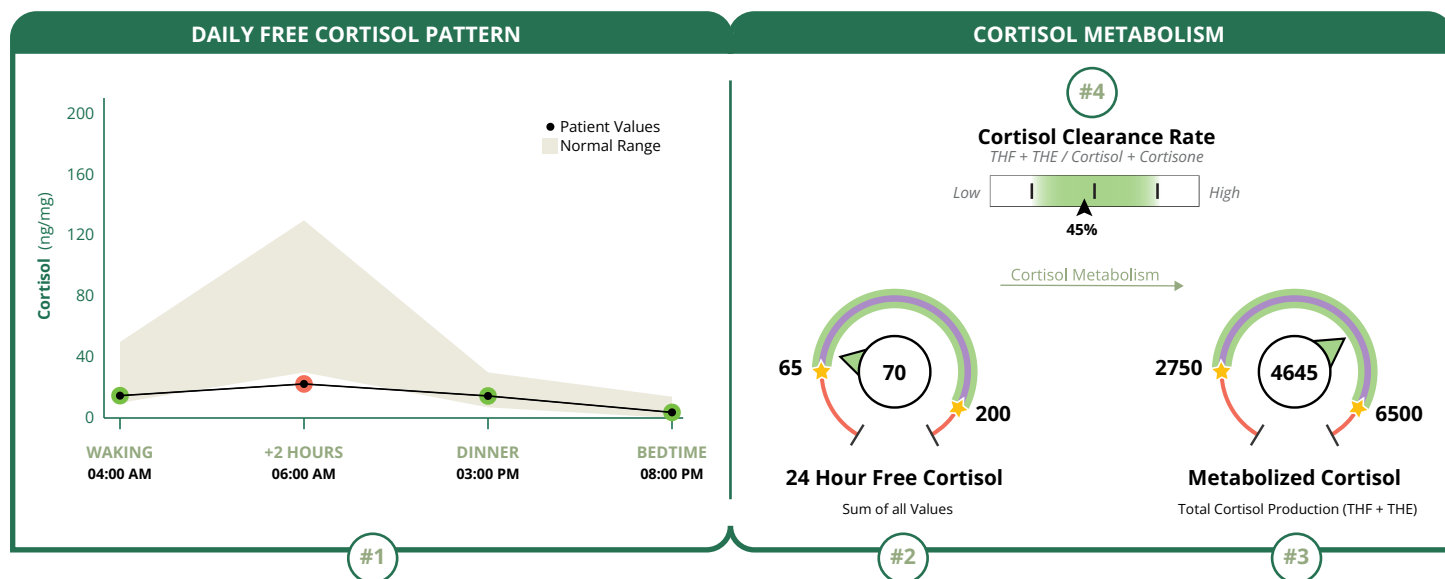
Daily Free Cortisone Pattern



Daily Free Cortisol Pattern



Cortisol and Cortisone interconvert (11b-HSD)



Cortisol-related Patient or Sample Comments:

#1. Assess the daily free cortisol pattern.

- One or more points on the Daily 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.

#2. Assess the daily total of free cortisol in circulation (24hr Free Cortisol).

- The 24hr Free Cortisol is **70.1 ng/mg**, which is within the optimal range, but towards the low end. This may be relevant if the patient reported low cortisol symptoms or if Metabolized Cortisol is low.

#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 **4,645 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 **45.0%** of the population, which is within the optimal range. This indicates that cortisol and cortisone are being metabolized at a normal rate.

#5. Assess adrenal androgen levels (DHEA-S).

- The DHEA-S is **15.7 ng/mg**, which is below the range for women of any age.

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 kidney, a significant amount of cortisol is converted to cortisone before excretion into urine. Therefore, urinary 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 urinary 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 urinary 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, this may indicate the free cortisol levels were higher in circulation (serum) than the cortisol levels in the urine 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 provides an estimate of the body's overall cortisol-to-cortisone balance. As these metabolites are processed through the liver, the body may shift toward cortisol (THF) or cortisone (THE) depending on physiologic demands and underlying medical conditions. A normal ratio indicates an appropriate balance between THF and THE.

- The Systemic Preference slider is higher than **70.0%** of the population, which is within the optimal range. This indicates the balance between systemic cortisone and cortisol is normal.

#3. Assess for anabolic-catabolic balance.

Androgens such as DHEA-S support tissue growth and repair, while cortisol promotes tissue breakdown. When DHEA-S is significantly higher than cortisol, it may suggest an anabolic state (favoring tissue building and repair). When DHEA-S is significantly lower than cortisol, it may suggest a catabolic state (favoring tissue breakdown). Review the dials for DHEA-S and Total Cortisol Metabolites to consider if it favors a catabolic or anabolic state.

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:

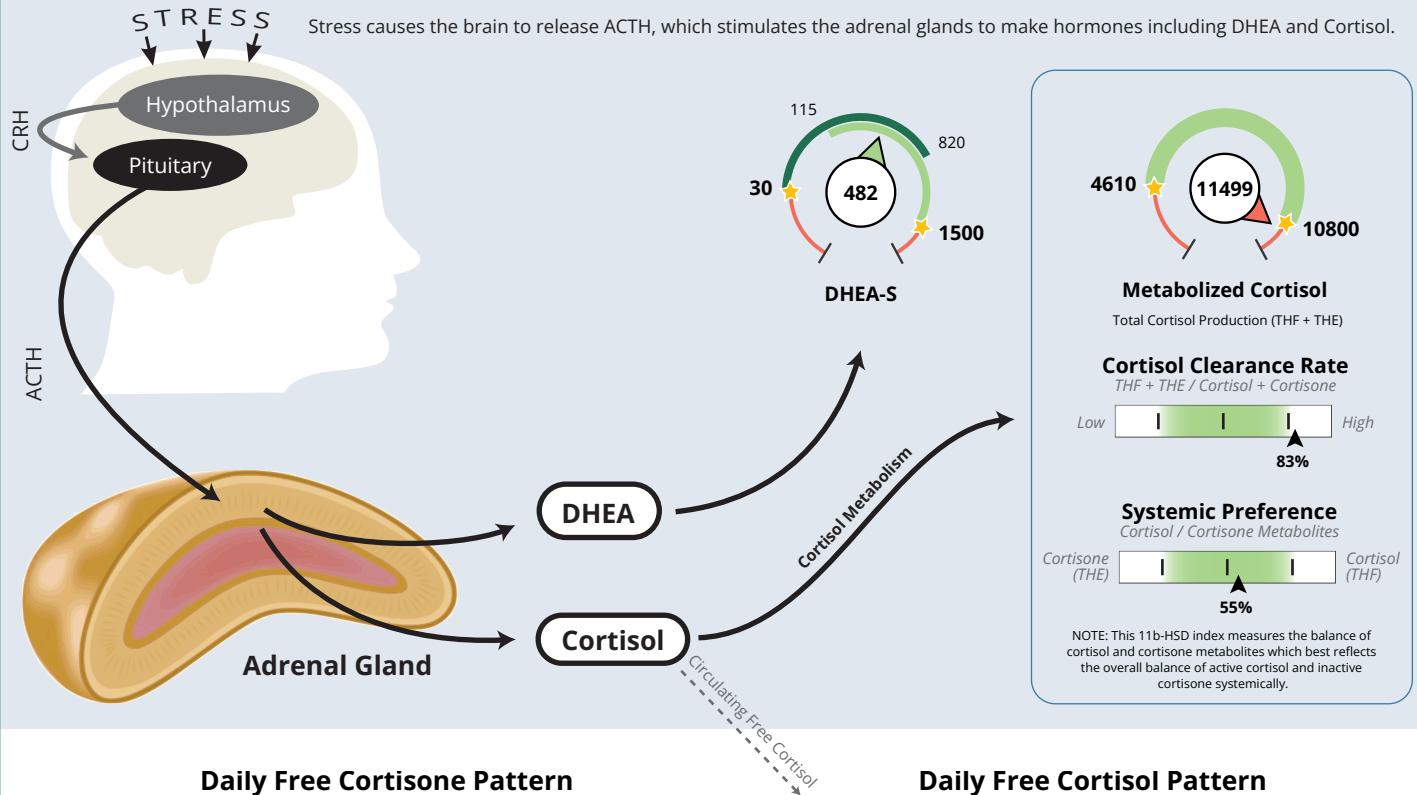
Female Reference Ranges (Updated 9.24.2026)									
	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	20%	90%	600	2000	Cortisol U0 (Mid-Sleep)	0	90%	0	16
a-Pregnanediol	20%	90%	200	740	Cortisol U1 (Waking)	20%	90%	20	95
Estrone (E1)	20%	80%	12	26	Cortisol U2 (+2 Hours)	20%	90%	30	130
Estradiol (E2)	20%	80%	1.8	4.5	Cortisol U3 (Dinner)	20%	90%	7	30
Estriol (E3)	20%	80%	5	18	Cortisol U4 (Bedtime)	0	90%	0	14
2-OH-E1	20%	80%	5.1	13.1	Cortisone U0 (Mid-Sleep)	0	90%	0	59
4-OH-E1	0	80%	0	1.8	Cortisone U1 (Waking)	20%	90%	68	190
16-OH-E1	20%	80%	0.7	2.6	Cortisone U2 (+2 Hours)	20%	90%	90	230
2-Methoxy-E1	20%	80%	2.5	6.5	Cortisone U3 (Dinner)	20%	90%	32	110
2-OH-E2	0	80%	0	3.1	Cortisone U4 (Bedtime)	0	90%	0	55
4-OH-E2	0	80%	0	0.52	Cortisol Clearance Rate (CCR)	20%	80%	6	13.5
2-16-ratio	20%	80%	2.69	11.83	Melatonin (6-OHMS)	20%	90%	10	85
2-4-ratio	20%	80%	5.4	12.62	8-OHdG	0	90%	0	5.2
2Me-2OH-ratio	20%	80%	0.39	0.67	Methylmalonate	0	90%	0	2.5
DHEA-S	20%	90%	20	750	Xanthurenate	0	90%	0.12	1.2
Androsterone	20%	80%	200	1650	Kynurenate	0	90%	0.8	4.5
Etiolcholanolone	20%	80%	200	1000	b-Hydroxyisovalerate	0	90%	0	12.5
Testosterone	20%	80%	2.3	14	Pyroglutamate	10%	90%	28	58
5a-DHT	0	80%	0	6.6	Indican	0	90%	0	100
5a-Androstanediol	20%	80%	6	30	Homovanillate	10%	95%	3	11
5b-Androstanediol	20%	80%	12	75	Vanilmandelate	10%	95%	2.2	5.5
Epi-Testosterone	20%	80%	2.3	14	Quinolinate	0	90%	0	9.6
a-THF	20%	90%	275	1160	Calculated Values				
b-THF	20%	90%	750	1800	Total DHEA Production	20%	80%	500	3000
b-THE	20%	90%	1550	3800	Total Estrogens	20%	80%	35	70
					Metabolized Cortisol	20%	90%	2750	6500
					24hr Free Cortisol	20%	90%	65	200
					24hr Free Cortisone	20%	90%	220	450
% = population percentile: Example - a high limit of 90% means results higher than 90% of the women tested for the reference range will be designated as "high."									

Ordering Provider:

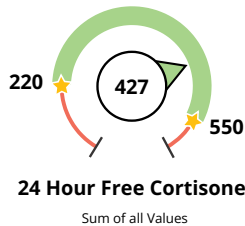
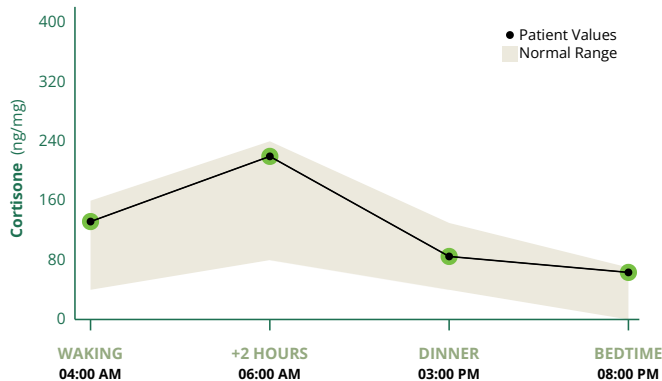
Test Provider MD

Adrenal Hormones & Metabolites

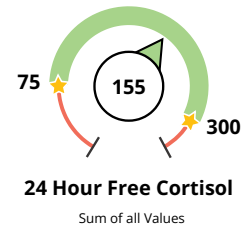
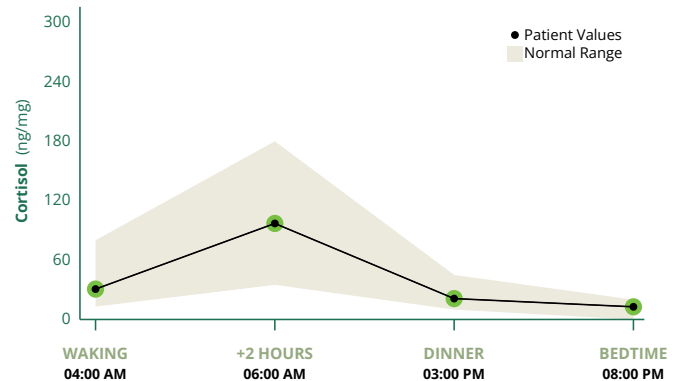
TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol (U1) - Waking	Within range	30.7	ng/mg	13 - 80
Cortisol (U2) - +2 Hours	Within range	97.0	ng/mg	35 - 180
Cortisol (U3) - Dinner	Within range	21.1	ng/mg	10 - 45
Cortisol (U4) - Bedtime	Within range	12.8	ng/mg	0 - 20
Cortisone (U1) - Waking	Within range	131.9	ng/mg	40 - 160
Cortisone (U2) - +2 Hours	Within range	219.7	ng/mg	80 - 240
Cortisone (U3) - Dinner	Within range	84.9	ng/mg	40 - 130
Cortisone (U4) - Bedtime	High end of range	63.4	ng/mg	0 - 70
24 Hour Free Cortisol (Sum of all Values)	Within range	154.7	ng/mg	75 - 300
24 Hour Free Cortisone (Sum of all Values)	Within range	426.5	ng/mg	220 - 550
Creatinine (Urine)				
Creatinine (U1) - Waking	Within range	0.80	mg/ml	0.3 - 3
Creatinine (U2) - +2 Hours	Within range	1.07	mg/ml	0.3 - 3
Creatinine (U3) - Dinner	Within range	0.38	mg/ml	0.3 - 3
Creatinine (U4) - Bedtime	Within range	0.85	mg/ml	0.3 - 3
Cortisol Metabolites and DHEA-S (Urine)				
a-Tetrahydrocortisol (a-THF)	Above range	2414.3	ng/mg	590 - 2380
b-Tetrahydrocortisol (b-THF)	Above range	3119.5	ng/mg	1340 - 3070
b-Tetrahydrocortisone (b-THE)	Above range	5965.5	ng/mg	2350 - 5800
Metabolized Cortisol (THF + THE)	Above range	11499.0	ng/mg	4610 - 10800
DHEA-S	Within range	482.0	ng/mg	30 - 1500
Cortisol Clearance Rate (CCR)	Above range	19.8		8.5 - 18.5



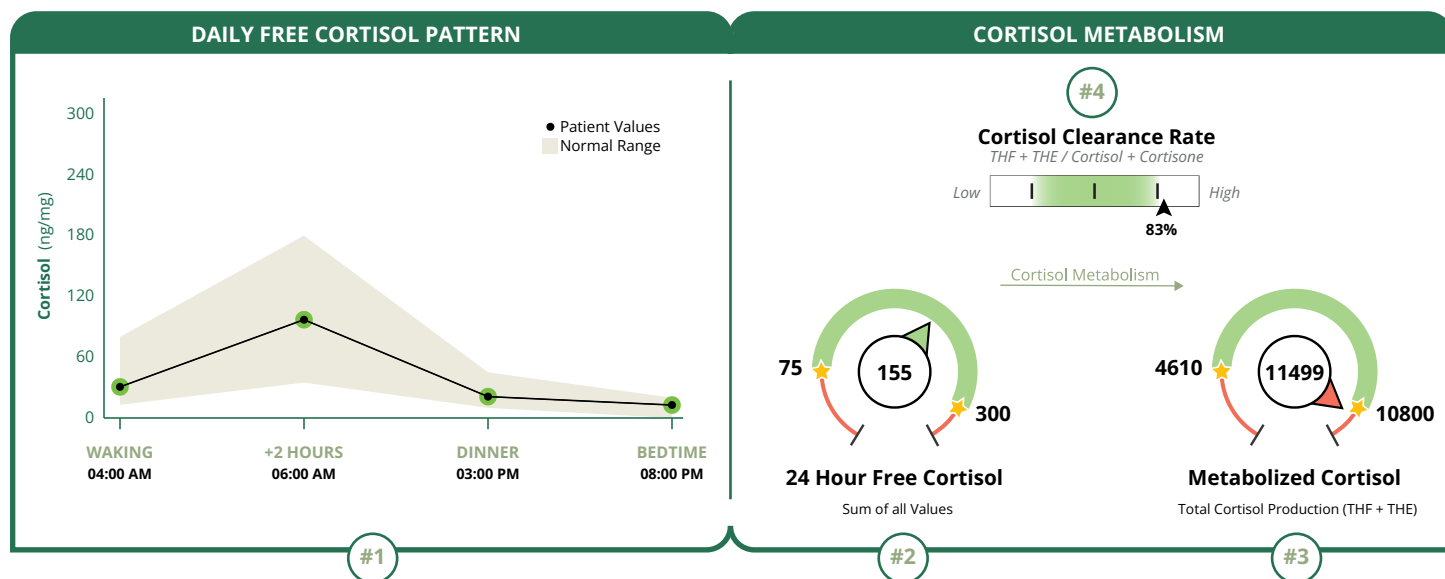
Daily Free Cortisone Pattern



Daily Free Cortisol Pattern



Cortisol and Cortisone interconvert (11b-HSD)



Cortisol-related Patient or Sample Comments:

#1. Assess the daily free cortisol pattern.

- All points on the Daily Free Cortisol Pattern are within the optimal range. Cortisol levels should follow a rhythm that is higher in the morning and lower at night.

#2. Assess the daily total of free cortisol in circulation (24hr Free Cortisol).

- The 24hr Free Cortisol is **155 ng/mg**, which is within the optimal range.

#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 **11,499 ng/mg**, which is above the optimal range.

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

- The Cortisol Clearance Rate is higher than **83.0%** of the population, which is above the optimal range. This indicates that cortisol and cortisone are being metabolized at a faster rate than expected. If paired with low free cortisol, this can contribute to low cortisol symptoms.
- The patient reports that they have a BMI between 25 and 30. A higher BMI is associated with a fast cortisol clearance rate.

#5. Assess adrenal androgen levels (DHEA-S).

- The DHEA-S is **482 ng/mg**, which is within the optimal range for men 18-40 years old, but in the lower half.

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 kidney, a significant amount of cortisol is converted to cortisone before excretion into urine. Therefore, urinary 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 urinary 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 urinary free cortisol implies.

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

#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 provides an estimate of the body's overall cortisol-to-cortisone balance. As these metabolites are processed through the liver, the body may shift toward cortisol (THF) or cortisone (THE) depending on physiologic demands and underlying medical conditions. A normal ratio indicates an appropriate balance between THF and THE.

- The Systemic Preference slider is higher than **55.0%** of the population, which is within the optimal range. This indicates the balance between systemic cortisone and cortisol is normal.

#3. Assess for anabolic-catabolic balance.

Androgens such as DHEA-S support tissue growth and repair, while cortisol promotes tissue breakdown. When DHEA-S is significantly higher than cortisol, it may suggest an anabolic state (favoring tissue building and repair). When DHEA-S is significantly lower than cortisol, it may suggest a catabolic state (favoring tissue breakdown). Review the dials for DHEA-S and Total Cortisol Metabolites to consider if it favors a catabolic or anabolic state.

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Additional Comments

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Male Reference Ranges (Updated 9.24.2026)									
	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-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	Quinolinate	0	90%	0	12.5
a-THF	20%	90%	590	2380	Calculated Values				
b-THF	20%	90%	1340	3070	Total DHEA Production	20%	80%	1000	5500
b-THE	20%	90%	2350	5800	Total Estrogens	10%	90%	10	34
					Metabolized Cortisol	20%	90%	4610	10800
					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."									