dutchtest® ADRENAL

Accession # 01093517

Male Sample Report
123 A Street
Sometown, CA 90266
DOB: 1976-01-01
Age: 49
Sex: Male

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:

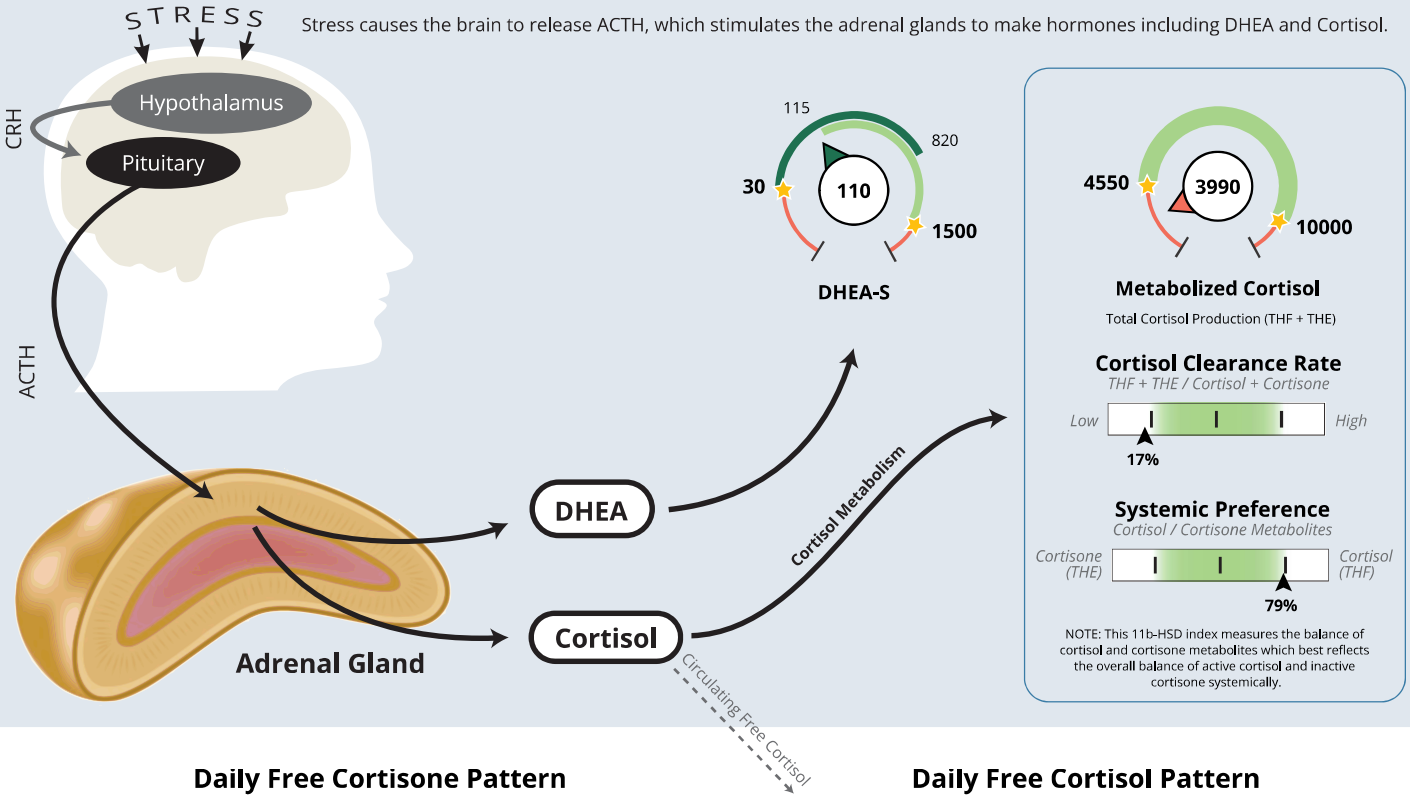
Test Provider MD

Adrenal Hormones & Metabolites

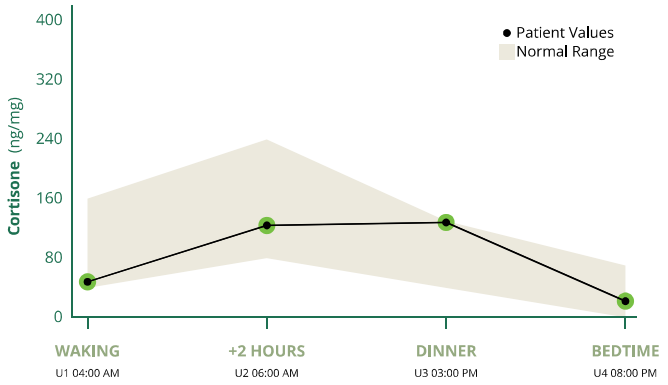
TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol (U1) - Waking	Low end of range	21.0	ng/mg	13 - 80
Cortisol (U2) - +2 Hours	Within range	82.0	ng/mg	35 - 180
Cortisol (U3) - Dinner	Above range	52.0	ng/mg	10 - 45
Cortisol (U4) - Bedtime	Within range	12.0	ng/mg	0 - 20
Cortisone (U1) - Waking	Low end of range	48.0	ng/mg	40 - 160
Cortisone (U2) - +2 Hours	Within range	124.0	ng/mg	80 - 240
Cortisone (U3) - Dinner	High end of range	128.0	ng/mg	40 - 130
Cortisone (U4) - Bedtime	Within range	22.0	ng/mg	0 - 70
24 Hour Free Cortisol (Sum of all Values)	Within range	167.0	ng/mg	75 - 300
24 Hour Free Cortisone (Sum of all Values)	Within range	322.0	ng/mg	220 - 550
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)	Below range	140.0	ng/mg	175 - 700
b-Tetrahydrocortisol (b-THF)	Low end of range	1900.0	ng/mg	1750 - 4000
b-Tetrahydrocortisone (b-THE)	Below range	1950.0	ng/mg	2350 - 5800
Metabolized Cortisol (THF + THE)	Below range	3990.0	ng/mg	4550 - 10000
DHEA-S	Low end of range	110.0	ng/mg	30 - 1500
Cortisol Clearance Rate (CCR)	Below range	8.2		8.5 - 17.5

EXPANDED CORTISOL & ADRENAL HORMONES

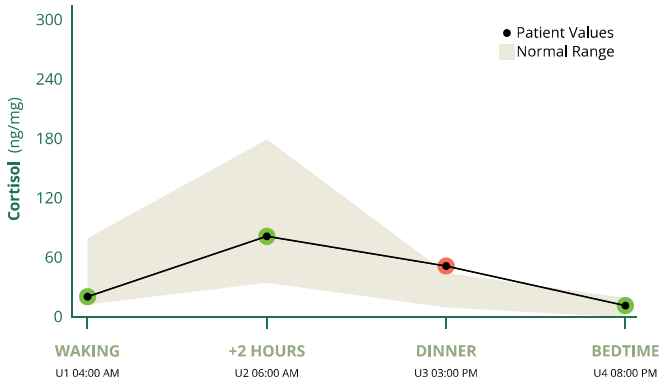
Normal, Age 18 - 40 (Androgens) | Age 41 - 60+ (Androgens) | Out of Range | Edge of Range

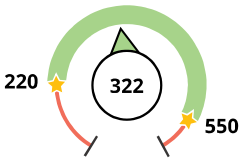


Daily Free Cortisone Pattern



Daily Free Cortisol Pattern

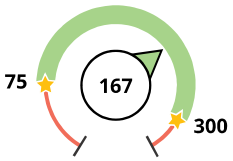




24 Hour Free Cortisone

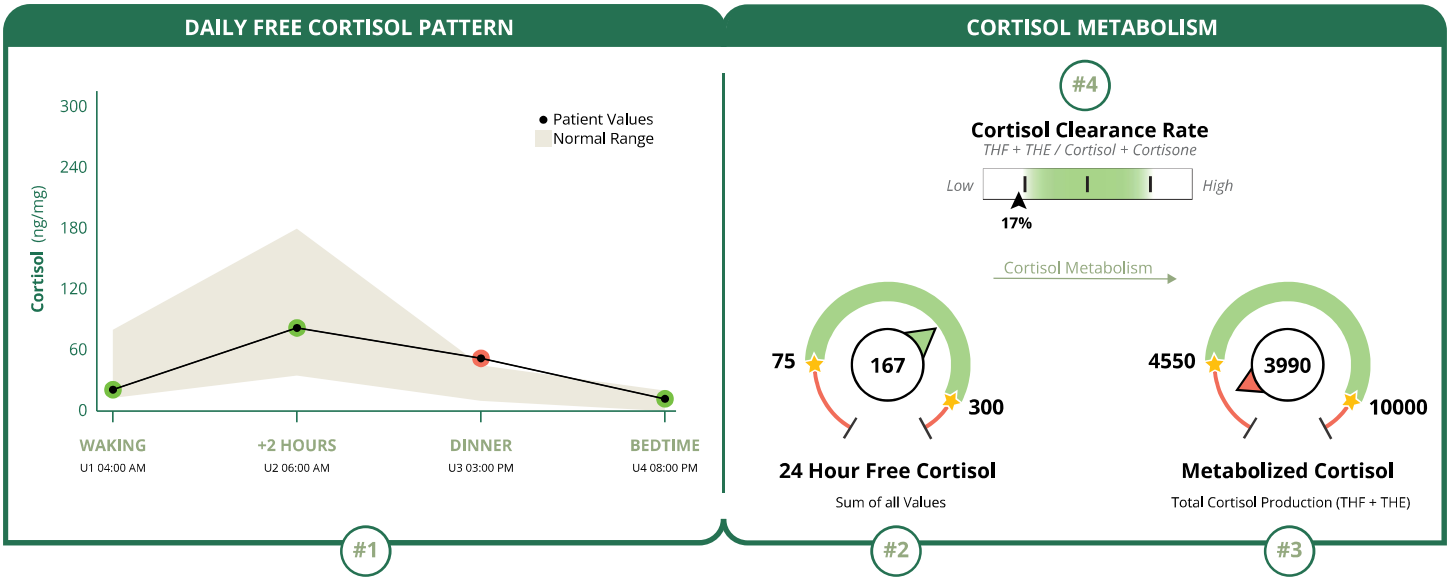
Sum of all Values

Cortisol and Cortisone interconvert (11b-HSD)



24 Hour Free Cortisol

Sum of all Values



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 **167 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 **3,990 ng/mg**, which is below the optimal range.

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

- The Cortisol Clearance Rate is higher than only **17.0%** of the population, which is below the optimal range. This indicates that cortisol and cortisone are being metabolized at a slower rate than expected. If paired with high free cortisol, this can contribute to high cortisol symptoms.

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

- The DHEA-S is **110 ng/mg**, which is within range for men 41 and older, but toward the lower end.

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.

- In this case, free cortisone in the urine is somewhat lower than the free cortisol. To the degree that this is true, it may indicate the free cortisol levels may not be quite as high in circulation (serum) as 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 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 **79.0%** of the population, which is within the optimal range, but towards the high end. This indicates a mild preference for cortisol metabolites compared to cortisone metabolites. If free cortisol levels are robust, this may contribute to high tissue cortisol. If cortisol levels are low, this may optimize cortisol levels by keeping what is available in its active form.

#3. Assess for anabolic-catabolic balance

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

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-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."