



Accession # 01036004

Collection Times:

Female Sample Report  
123 A Street  
Sometown, CA 90266

2022-06-13 04:00AM (U)  
2022-06-13 06:00AM (U)  
2022-06-13 03:00PM (U)  
2022-06-13 08:00PM (U)

DOB: 1976-01-01

Age: 46

Sex: Female

Last Menstrual Period:

2022-05-25

Ordering Provider:

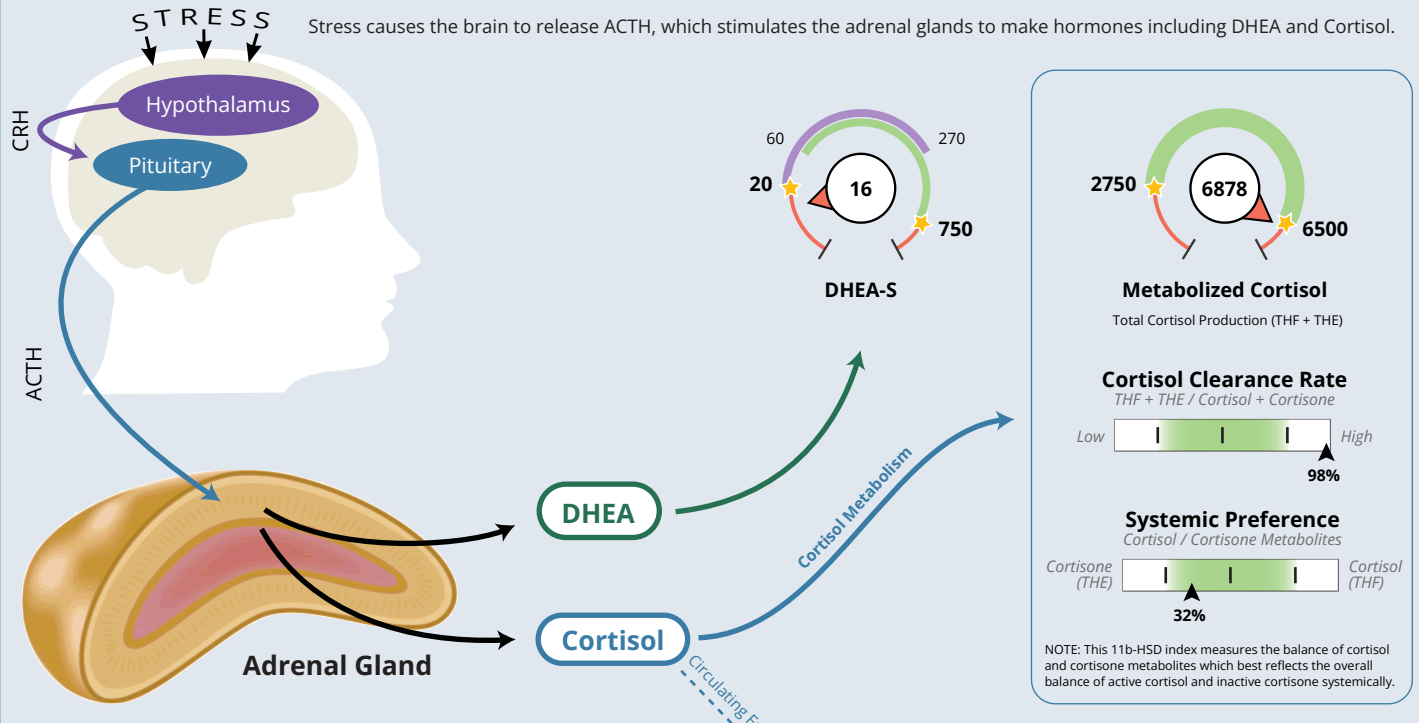
Precision Analytical

## Adrenal Hormones & Metabolites

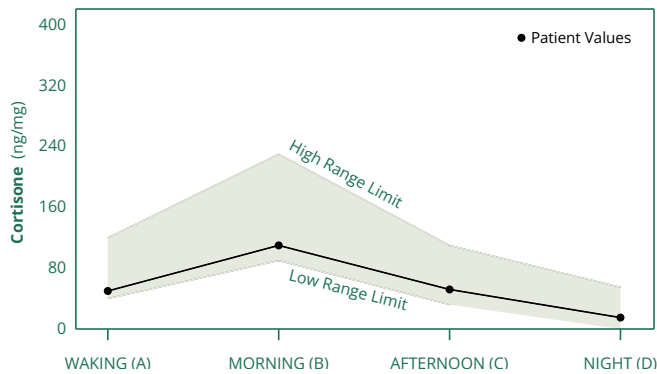
TEST		RESULT	UNITS	NORMAL RANGE
<b>Daily Free Cortisol and Cortisone (Urine)</b>				
Cortisol A - Waking	Low end of range	12.0	ng/mg	10 - 50
Cortisol B - Morning	Low end of range	32.0	ng/mg	30 - 130
Cortisol C - Afternoon	Low end of range	9.0	ng/mg	7 - 30
Cortisol D - Night	Within range	5.0	ng/mg	0 - 14
Cortisone A - Waking	Low end of range	50.0	ng/mg	40 - 120
Cortisone B - Morning	Low end of range	110.0	ng/mg	90 - 230
Cortisone C - Afternoon	Within range	52.0	ng/mg	32 - 110
Cortisone D - Night	Within range	15.0	ng/mg	0 - 55
24hr Free Cortisol	Below range	58.0	ng/mg	65 - 200
24hr Free Cortisone	Low end of range	227.0	ng/mg	220 - 450
<b>Creatinine (Urine)</b>				
Creatinine A - Waking	Within range	0.50	mg/ml	0.2 - 2
Creatinine B - Morning	Within range	0.72	mg/ml	0.2 - 2
Creatinine C - Afternoon	Within range	0.48	mg/ml	0.2 - 2
Creatinine D - Night	Within range	0.34	mg/ml	0.2 - 2
<b>Cortisol Metabolites and DHEA-S (Urine)</b>				
a-Tetrahydrocortisol (a-THF)	Above range	464.0	ng/mg	75 - 370
b-Tetrahydrocortisol (b-THF)	Within range	2318.9	ng/mg	1050 - 2500
b-Tetrahydrocortisone (b-THE)	Above range	4095.1	ng/mg	1550 - 3800
Metabolized Cortisol (THF + THE)	Above range	6878.0	ng/mg	2750 - 6500
DHEA-S	Below range	16.0	ng/mg	20 - 750
Cortisol Clearance Rate (CCR)	Above range	24.1		6 - 12.5

# ADRENAL HORMONES & METABOLITES

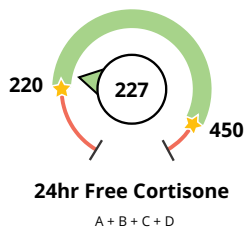
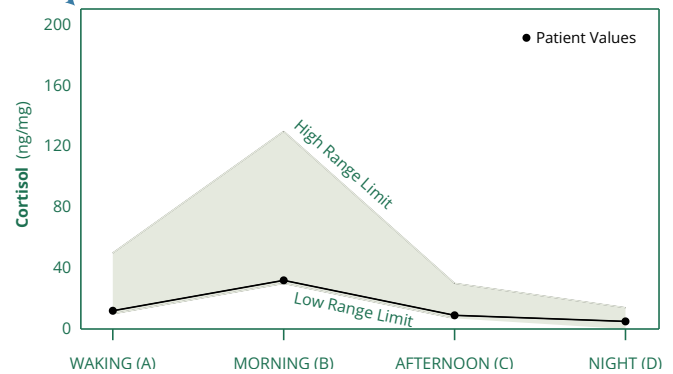
● Optimal Luteal Range ● Postmenopausal Range ● Out of Range ★ Edge of Range



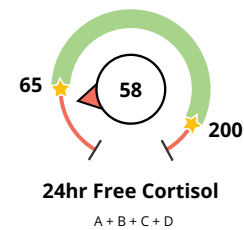
## Daily Free Cortisone Pattern



## Daily Free Cortisol Pattern



Cortisol and Cortisone interconvert (11b-HSD)



## Clinical Support Overview

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

Please take a moment to read through the Clinical Support Overview below. These comments are specific to the patient's lab results. These comments are intended for educational purposes only. Specific treatment should be managed by a healthcare provider.

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>

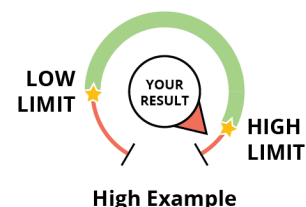
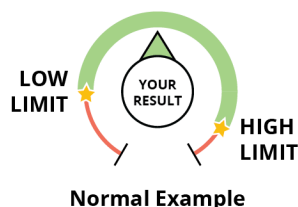
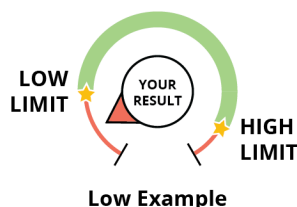
### Alert Comments:

## How to read the DUTCH report

This report is not intended to treat, cure or diagnose any specific diseases.

### DUTCH DIALS

The graphic dials in this report are intended for quick and easy evaluation of hormone levels. The green highlighted area between the stars shows the normal range. Results below the left star and beyond the right star are shaded red representing below and above the normal range respectively. The arrow points to the patient's result and will be the color of the result status (ie red for out of range, green for in range).

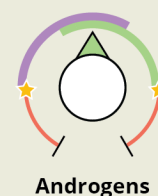


### NEW! - AGE DEPENDENT RANGES

Age-dependent ranges for females are oriented around optimal **premenopausal** and **postmenopausal** levels.

**For androgen dials**, the optimal premenopausal range is not significantly affected by the phase in the menstrual cycle or menopause but declines with age more gradually. The premenopausal range is shown in green, and the postmenopausal range is shown in purple, with some overlap. Note that the arrow pointer changes color to the range it points to, with a preference for the premenopausal green when the ranges overlap.

● Optimal Luteal or Premenopausal Range    ● Postmenopausal Range    ● Out of Range



### DUTCH SLIDERS

The graphic sliders indicate the relative ratio of the metabolites noted on the slider. The percentage stated is a population percentage. A result of 50% indicates that the ratio is higher than 50% of individuals tested, or right in the middle of the population's range. If the result is lower than 50% it will move to the left and higher than 50% will move to the right. The normal range is shaded green and out of range is shaded white.



For more information about the new slider bars, please click to read our [DUTCH Blog](#).

### Patient or Sample Comments

You will find comments specific to the patient results in each section below in bulleted text. Please refer to our DUTCH resources for further information on interpreting results.

- The patient reports regular menstrual cycles.

### CORTISOL

Review the daily pattern of free cortisol throughout the day, looking for low and high levels and noting what time they occur. Next review the sum of free cortisol as an expression of overall tissue cortisol exposure.

#### Free Cortisol Levels

- While free cortisol levels are low, these results can be somewhat misleading in this case. Overall cortisol production is best approximated by levels of metabolized cortisol, which are elevated. This implies that overall the HPA-Axis activity is elevated. Cortisol clearance is up-regulated in this patient, leaving them with low levels of free cortisol. The patient's cortisol status may be different depending on the location within the body. For example, the conversion from noradrenaline to adrenaline is driven by cortisol and takes place within the adrenal medulla. In this case, this area is likely flooded with high levels of cortisol forcing conversion to adrenaline, whereas the brain (where cortisol has negative feedback on ACTH production) may be cortisol deficient. Efforts to increase HPA-Axis activity may exacerbate some symptoms. Calming the HPA-Axis, while supporting it in ways that are not excitatory, may be the best course of action.

#### Cortisol Metabolism

- The Cortisol Clearance Rate is high. This indicates the level of metabolized cortisol exceeds the level of free cortisol and free cortisone. Fast cortisol clearance occurs with elevated levels of 5a and 5b-reductase. This occurs mostly in obesity and insulin resistance but can also be seen with hyperthyroidism or too much thyroid medication. The HPA axis can adjust cortisol excretion to maintain normal levels of free cortisol, but fast clearance can result in upregulation of ACTH and all adrenal products (such as DHEA). In some cases, fast cortisol clearance leads to low free cortisol and low symptoms.

## 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 05.20.2025)									
	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	20%	90%	600	2000	Cortisol A (waking)	20%	90%	10	50
a-Pregnanediol	20%	90%	200	740	Cortisol B (morning)	20%	90%	30	130
Estrone (E1)	20%	80%	12	26	Cortisol C (~5pm)	20%	90%	7	30
Estradiol (E2)	20%	80%	1.8	4.5	Cortisol D (bed)	0	90%	0	14
Estriol (E3)	20%	80%	5	18	Cortisone A (waking)	20%	90%	40	120
2-OH-E1	20%	80%	5.1	13.1	Cortisone B (morning)	20%	90%	90	230
4-OH-E1	0	80%	0	1.8	Cortisone C (~5pm)	20%	90%	32	110
16-OH-E1	20%	80%	0.7	2.6	Cortisone D (bed)	0	90%	0	55
2-Methoxy-E1	20%	80%	2.5	6.5	Cortisol Clearance Rate (CCR)	20%	80%	6	12.5
2-OH-E2	0	80%	0	3.1	Melatonin (6-OHMS)	20%	90%	10	85
4-OH-E2	0	80%	0	0.52	8-OHdG	0	90%	0	5.2
2-16-ratio	20%	80%	2.69	11.83	Methylmalonate	0	90%	0	2.5
2-4-ratio	20%	80%	5.4	12.62	Xanthurenate	0	90%	0.12	1.2
2Me-2OH-ratio	20%	80%	0.39	0.67	Kynurenate	0	90%	0.8	4.5
DHEA-S	20%	90%	20	750	b-Hydroxyisovalerate	0	90%	0	12.5
Androsterone	20%	80%	200	1650	Pyroglutamate	10%	90%	28	58
Etiocanolone	20%	80%	200	1000	Indican	0	90%	0	100
Testosterone	20%	80%	2.3	14	Homovanillate	10%	95%	3	11
5a-DHT	0	80%	0	6.6	Vanilmandelate	10%	95%	2.2	5.5
5a-Androstenediol	20%	80%	6	30	Quinolinat	0	90%	0	9.6
5b-Androstenediol	20%	80%	12	75	<b>Calculated Values</b>				
Epi-Testosterone	20%	80%	2.3	14	Total DHEA Production	20%	80%	500	3000
a-THF	20%	90%	75	370	Total Estrogens	20%	80%	35	70
b-THF	20%	90%	1050	2500	Metabolized Cortisol	20%	90%	2750	6500
b-THE	20%	90%	1550	3800	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."									