dutchtest® ADRENAL

Accession # 01036004

Female Sample Report
123 A Street
Sometown, CA 90266

DOB: 1976-01-01
Age: 46
Sex: Female
Last Menstrual Period:
2022-05-25

Collection Times:

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

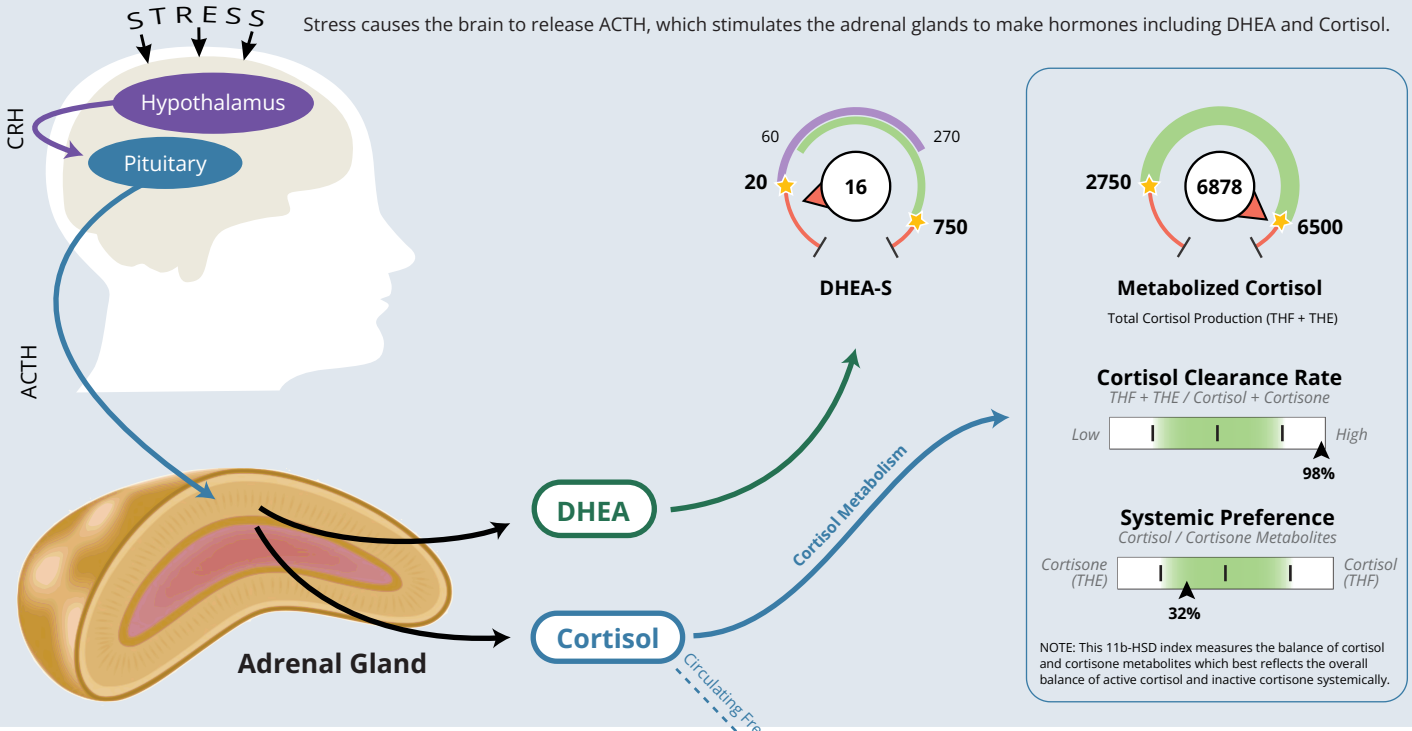
Ordering Provider:
Precision Analytical

Adrenal Hormones & Metabolites

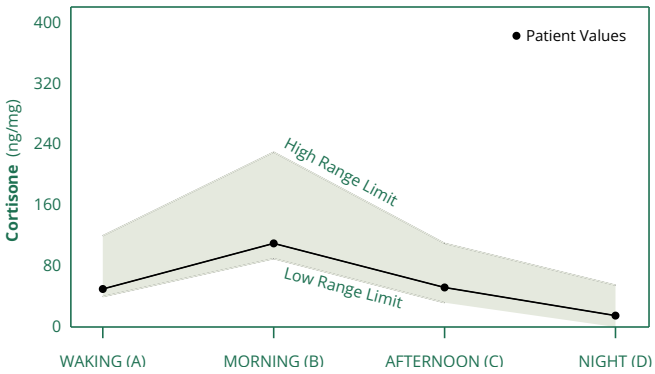
TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol A - Waking	Low end of range	12.0	ng/mg	10 - 50
Cortisol B - Morning	Low end of range	32.0	ng/mg	30 - 130
Cortisol C - Afternoon	Low end of range	9.0	ng/mg	7 - 30
Cortisol D - Night	Within range	5.0	ng/mg	0 - 14
Cortisone 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
Creatinine (Urine)				
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
Cortisol Metabolites and DHEA-S (Urine)				
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

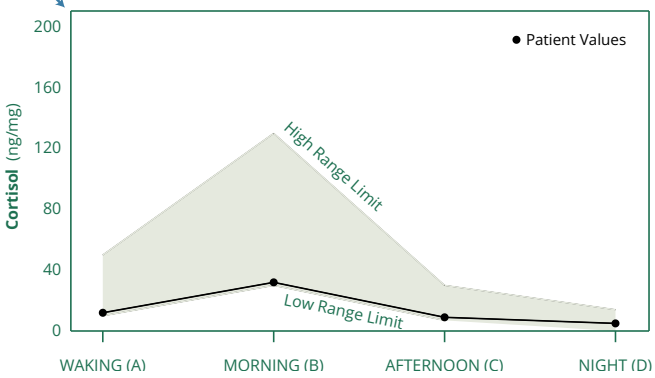
Optimal Luteal Range | Postmenopausal Range | Out of Range | Edge of Range

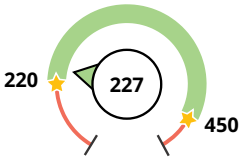


Daily Free Cortisone Pattern



Daily Free Cortisol Pattern

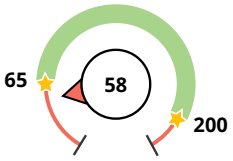




24hr Free Cortisone

A + B + C + D

Cortisol and Cortisone interconvert (11b-HSD)



24hr Free Cortisol

A + B + C + D

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).

Low Example

Normal Example

High Example

NEW! - AGE DEPENDENT RANGES

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

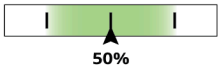
For androgen dials, the optimal premenopausal range is not significantly affected by the phase in the menstrual cycle or menopause but declines with age more gradually. The premenopausal range is shown in green, and the postmenopausal range is shown in purple, with some overlap. Note that the arrow pointer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


Androgens

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
Etiocholanolone	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-Androstanediol	20%	80%	6	30	Quinolinate	0	90%	0	9.6
5b-Androstanediol	20%	80%	12	75	**Calculated Values**				
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."

dutchtest® ADRENAL

Accession # 01036006

Male Sample Report
123 A Street
Sometown, CA 90266

DOB: 1976-01-01
Age: 46
Sex: Male

Collection Times:

2022-06-13 01:30AM (U)
2022-06-13 04:00AM (U)
2022-06-13 06:00AM (U)
2022-06-13 03:00PM (U)
2022-06-13 08:00PM (U)

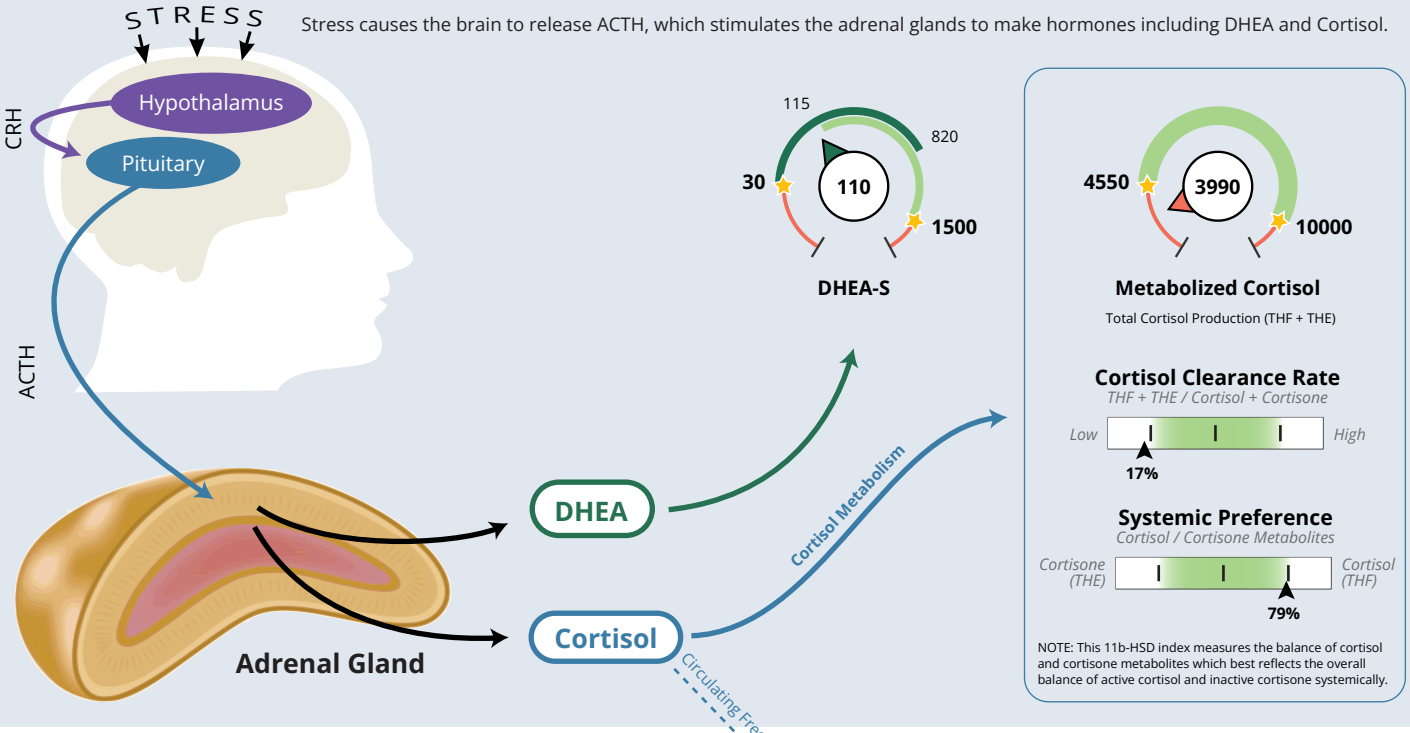
Ordering Provider:
Precision Analytical

Adrenal Hormones & Metabolites

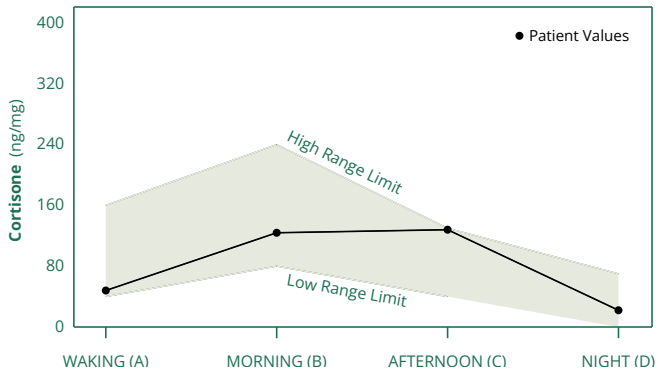
TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol A - Waking	Low end of range	21.0	ng/mg	13 - 80
Cortisol B - Morning	Within range	82.0	ng/mg	35 - 180
Cortisol C - Afternoon	Above range	52.0	ng/mg	10 - 45
Cortisol D - Night	Within range	12.0	ng/mg	0 - 20
Cortisone A - Waking	Low end of range	48.0	ng/mg	40 - 160
Cortisone B - Morning	Within range	124.0	ng/mg	80 - 240
Cortisone C - Afternoon	High end of range	128.0	ng/mg	40 - 130
Cortisone D - Night	Within range	22.0	ng/mg	0 - 70
24hr Free Cortisol	Within range	167.0	ng/mg	75 - 300
24hr Free Cortisone	Within range	322.0	ng/mg	220 - 550
Creatinine (Urine)				
Creatinine A - Waking	Within range	0.50	mg/ml	0.3 - 3
Creatinine B - Morning	Within range	0.72	mg/ml	0.3 - 3
Creatinine C - Afternoon	Within range	0.48	mg/ml	0.3 - 3
Creatinine D - Night	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

ADRENAL HORMONES & METABOLITES

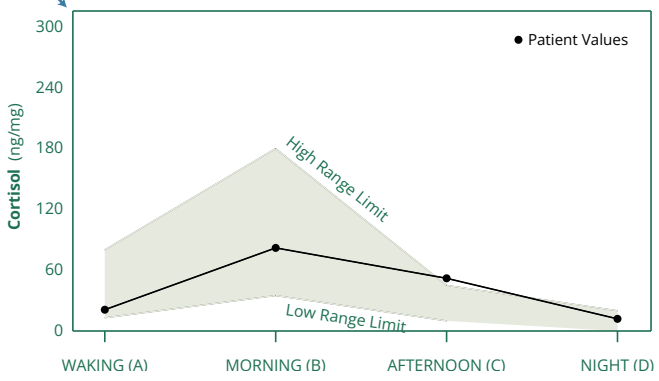
Normal, Age 18-40 (Androgens) | Age 41 - 60+ (Androgens) | Out of Range | Edge of Range

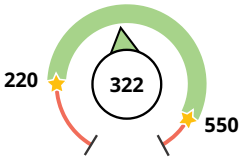


Daily Free Cortisone Pattern



Daily Free Cortisol Pattern

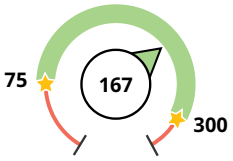




24hr Free Cortisone

A + B + C + D

Cortisol and Cortisone interconvert (11b-HSD)



24hr Free Cortisol

A + B + C + D

The Waking (A) free cortisol result is intended to represent the "overnight" period. When patients wake at night we request they collect a sample to use in a time-weighted calculation to represent the "overnight" period. In this case, the patient woke during the night and collected a sample successfully but their waking sample had no measureable cortisol (the urine was too dilute). The middle-of-the-night sample has been used as the only input for the Waking (A) result. This cortisol value represents the time between bed and the middle-of-the-night collection and not the entirety of the overnight period.

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).

Low Example

Normal Example

High Example

NEW! - AGE DEPENDENT RANGES

Age-dependent ranges for males are are used on the **androgen** dials.

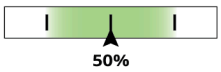
Males commonly go through a decline in androgen production starting around age 40. These dials use light green for optimal levels for ages 18-40 and dark green for ages 41 and beyond. Note that the arrow pointer changes color to the range it points to, with a preference for the light green when the ranges overlap.


Androgens

Optimal Range for Age 18 - 40 | Optimal Range for Age 41 - 60+ | 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.

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

- Overall free cortisol levels are within range, but metabolized cortisol (the best marker for overall cortisol production) is low. This implies that overall HPA-Axis is low. Cortisol clearance may be a bit sluggish, which keeps free cortisol levels within range in spite of low overall production. Hypothyroidism and other conditions may lead to slow cortisol metabolism. If treating the patient for potential thyroid issues be sure to take into account the interplay between the thyroid and adrenals.

Cortisol Metabolism

- The Cortisol Clearance Rate is low. This indicates the level of metabolized cortisol is significantly lower than the level of free cortisol and free cortisone. Slow cortisol clearance occurs with low levels of 5a and 5b-reductase. This occurs with hypothyroidism, cholestasis, anorexia, liver cirrhosis, and critical illness. The HPA axis can adjust cortisol excretion to maintain normal levels of free cortisol, but slow clearance can result in lower ACTH and all adrenal products (such as DHEA). In some cases, slow cortisol clearance leads to high free cortisol and high cortisol symptoms due to slow clearance.

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 05.20.2025)									
	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	10%	90%	75	400	Cortisol A (waking)	20%	90%	13	80
a-Pregnanediol	10%	90%	20	130	Cortisol B (morning)	20%	90%	35	180
Estrone (E1)	10%	90%	4	16	Cortisol C (~5pm)	20%	90%	10	45
Estradiol (E2)	10%	90%	0.5	2.2	Cortisol D (bed)	0	90%	0	20
Estriol (E3)	10%	90%	2	8	Cortisone A (waking)	20%	90%	40	160
2-OH-E1	0	90%	0	5.9	Cortisone B (morning)	20%	90%	80	240
4-OH-E1	0	90%	0	0.8	Cortisone C (~5pm)	20%	90%	40	130
16-OH-E1	0	90%	0	1.2	Cortisone D (bed)	0	90%	0	70
2-Methoxy-E1	0	90%	0	2.8	Cortisol Clearance Rate (CCR)	20%	80%	8.5	17.5
2-OH-E2	0	90%	0	1.2	Melatonin (6-OHMS)	20%	90%	10	85
4-OH-E2	0	90%	0	0.25	8-OHdG	0	90%	0	8.8
2-16-ratio	20%	80%	2.85	9.88	Methylmalonate	0	90%	0	3.5
2-4-ratio	20%	80%	6.44	12.6	Xanthurenate	0	90%	0.2	1.9
2Me-2OH-ratio	20%	80%	0.4	0.7	Kynurenate	0	90%	1	6.6
DHEA-S	20%	90%	30	1500	b-Hydroxyisovalerate	0	90%	0	18
Androsterone	20%	80%	500	3000	Pyroglutamate	10%	90%	38	83
Etiocholanolone	20%	80%	400	1500	Indican	0	90%	0	131
Testosterone	20%	90%	25	115	Homovanillate	10%	95%	4	16
5a-DHT	20%	90%	5	25	Vanilmandelate	10%	95%	2.5	7.5
5a-Androstanediol	20%	90%	30	250	Quinolinate	0	90%	0	12.5
5b-Androstanediol	20%	90%	40	250	**Calculated Values**				
Epi-Testosterone	20%	90%	25	115	Total DHEA Production	20%	80%	1000	5500
a-THF	20%	90%	175	700	Total Estrogens	10%	90%	10	34
b-THF	20%	90%	1750	4000	Metabolized Cortisol	20%	90%	4550	10000
b-THE	20%	90%	2350	5800	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 women tested for the reference range will be designated as "high."