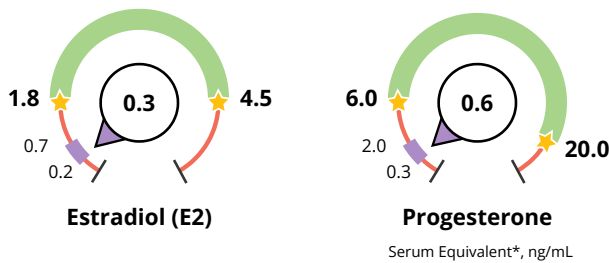
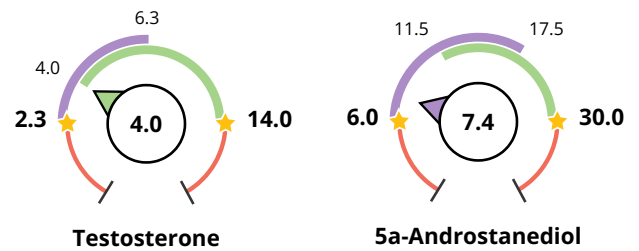


Hormone Testing Summary

ESTROGEN & PROGESTERONE

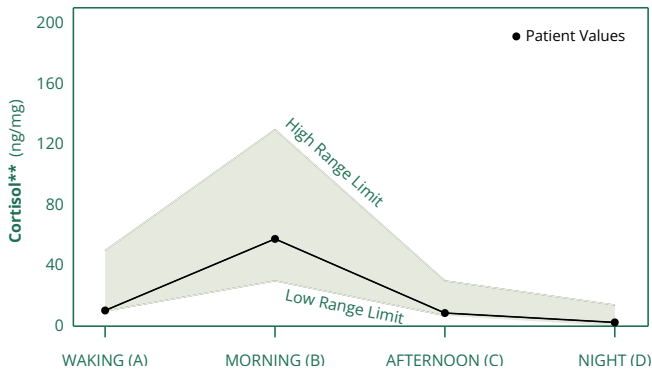


ANDROGENS

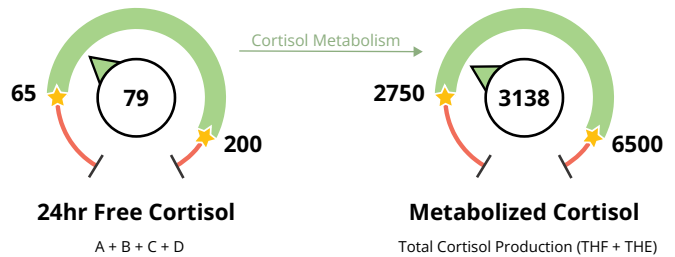
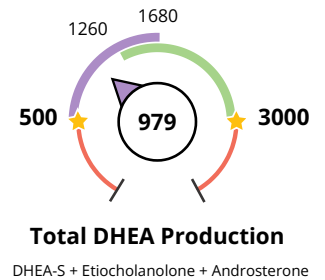
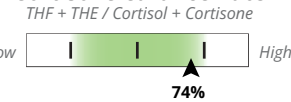


CORTISOL

Daily Free Cortisol Pattern



Cortisol Clearance Rate



Optimal Luteal Range Postmenopausal Range Out of Range Edge of Range

*Progesterone Serum Equivalent is a calculated value based on urine pregnanediol.

**Free cortisol best reflects tissue levels. Metabolized cortisol best reflects total cortisol production.



Accession # 01098681

Janette Dunn
19 Mount View Ave
Hazelbrook, NSW 2779

DOB: 1967-09-07

Age: 57

Sex: Female

Last Menstrual Period:

Collection Times:

2025-08-02 06:15AM (U)
2025-08-02 08:20AM (U)
2025-08-02 06:00PM (U)
2025-08-01 10:00PM (U)

Ordering Provider:

Thomas Polucki, FDN DC

Sex Hormones & Metabolites

TEST		RESULT	UNITS	LUTEAL*	POSTMENOPAUSAL
Progesterone Metabolites (Urine)					
b-Pregnanediol	Below luteal range	76.8	ng/mg	600 - 2000	60 - 200
a-Pregnanediol	Below luteal range	18.8	ng/mg	200 - 740	15 - 50
Estrogens and Metabolites (Urine)					
Estrone (E1)	Below luteal range	2.75	ng/mg	12 - 26	1.0 - 7.0
Estradiol (E2)	Below luteal range	0.26	ng/mg	1.8 - 4.5	0.2 - 0.7
Estriol (E3)	Below luteal range	0.7	ng/mg	5 - 18	0.6 - 4.0
2-OH-E1	Below luteal range	1.09	ng/mg	5.1 - 13.1	0.3 - 2.0
4-OH-E1	Within luteal range	0.18	ng/mg	0 - 1.8	0 - 0.3
16-OH-E1	Below luteal range	0.09	ng/mg	0.7 - 2.6	0.2 - 0.6
2-Methoxy-E1	Below luteal range	0.66	ng/mg	2.5 - 6.5	0.3 - 1.4
2-OH-E2	Low end of luteal range	0.20	ng/mg	0 - 3.1	0 - 0.52
4-OH-E2	Within luteal range	0.05	ng/mg	0 - 0.52	0 - 0.12
Total Estrogen	Below range	6.0	ng/mg	35 - 70	3.5 - 15
Metabolite Ratios (Urine)					
2-OH / 16-OH-E1 Balance	Above range	12.11	ratio	2.69 - 11.83	
2-OH / 4-OH-E1 Balance	Low end of range	6.06	ratio	5.4 - 12.62	
2-Methoxy / 2-OH Balance	Within range	0.61	ratio	0.39 - 0.67	
Androgens and Metabolites (Urine)				Range	
DHEA-S	Low end of range	42.4	ng/mg	20 - 750	
Androsterone	Low end of range	442.1	ng/mg	200 - 1650	
Etiocholanolone	Within range	495.0	ng/mg	200 - 1000	
Testosterone	Low end of range	4.01	ng/mg	2.3 - 14	
5a-DHT	Within range	1.3	ng/mg	0 - 6.6	
5a-Androstanediol	Low end of range	7.4	ng/mg	6 - 30	
5b-Androstanediol	Within range	35.5	ng/mg	12 - 75	
Epi-Testosterone	Below range	1.1	ng/mg	2.3 - 14	

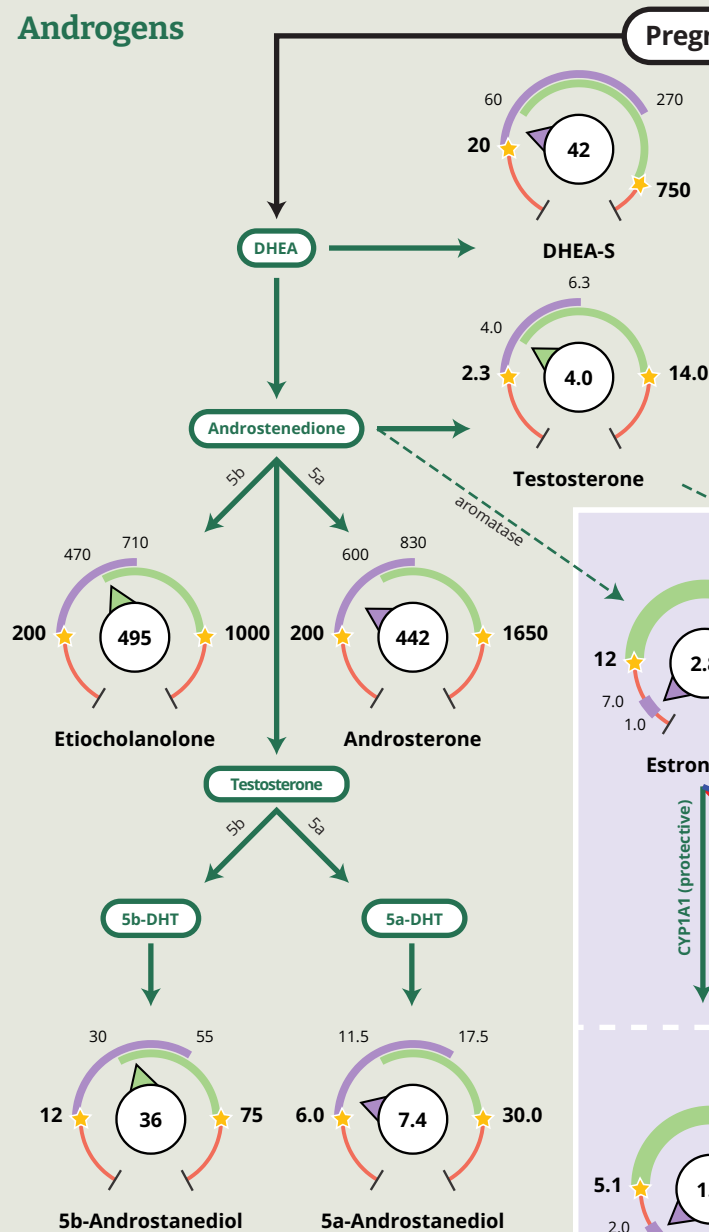
* The Luteal Range represents the expected premenopausal luteal range, collected menstrual cycle days 19-22 of a 28-day cycle. If your patient noted taking oral progesterone, the reference range represents the expected range on 100 - 200 mg of oral micronized progesterone (OMP). The ranges in the table below represent ranges in other times of the cycle your patient may have collected, such as follicular or ovulatory phases.

ADDITIONAL NORMAL RANGES	FOLLICULAR	OVULATORY	ON ORAL PG
b-Pregnanediol	100 - 300	100 - 300	2000 - 9000
a-Pregnanediol	25 - 100	25 - 100	580 - 3000
Estrone (E1)	4.0 - 12.0	22 - 68	N/A
Estradiol (E2)	1.0 - 2.0	4.0 - 12.0	N/A

SEX HORMONES & METABOLITES

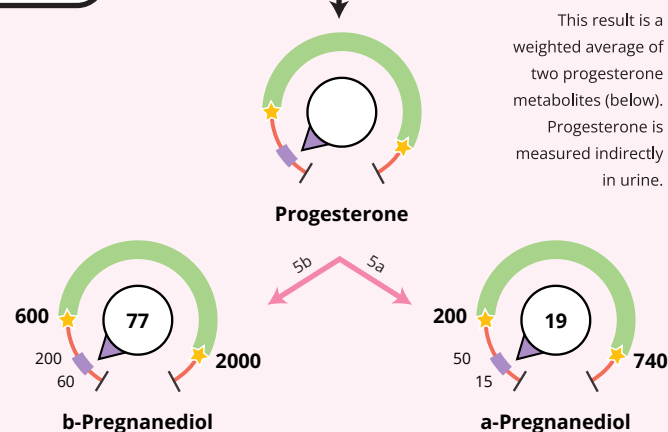
● Optimal Luteal Range ● Postmenopausal Range ● Out of Range ★ Edge of Range

Androgens

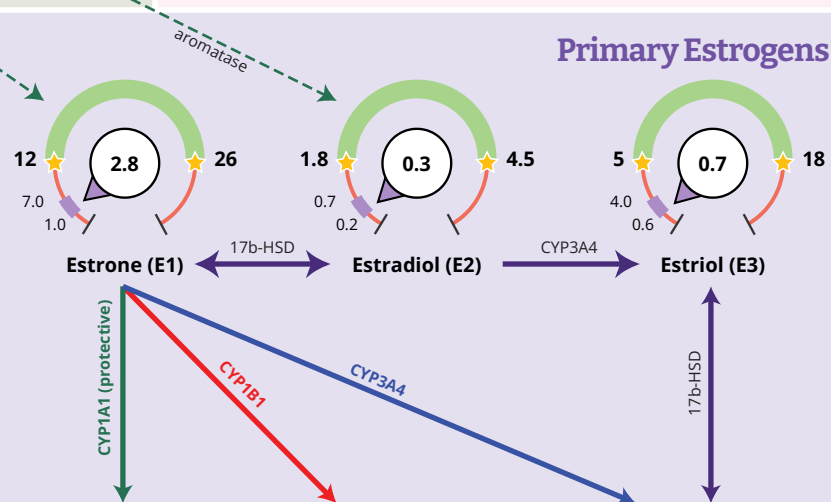


Progesterone

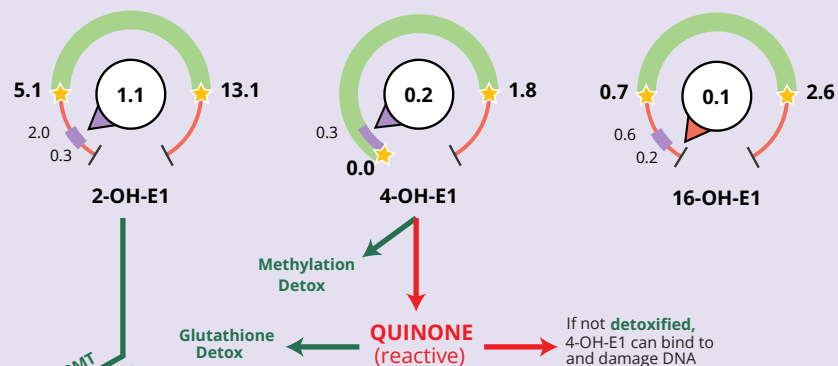
This result is a weighted average of two progesterone metabolites (below). Progesterone is measured indirectly in urine.



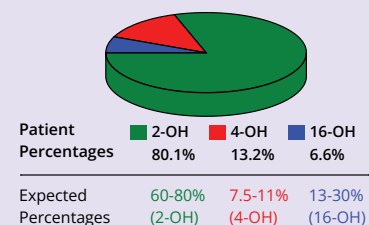
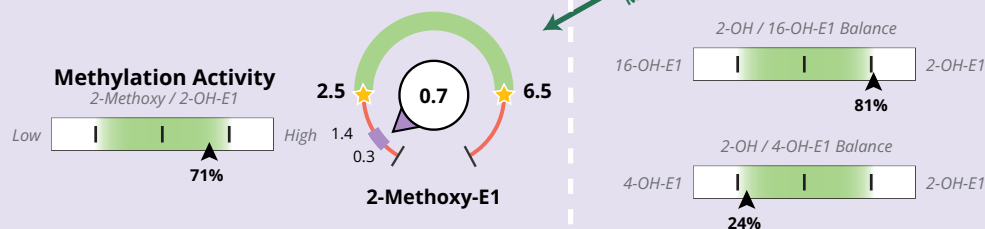
Primary Estrogens



Phase 1 Estrogen Metabolism



Phase 2 Estrogen Metabolism





Accession # 01098681

Collection Times:

Janette Dunn
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Age: 57

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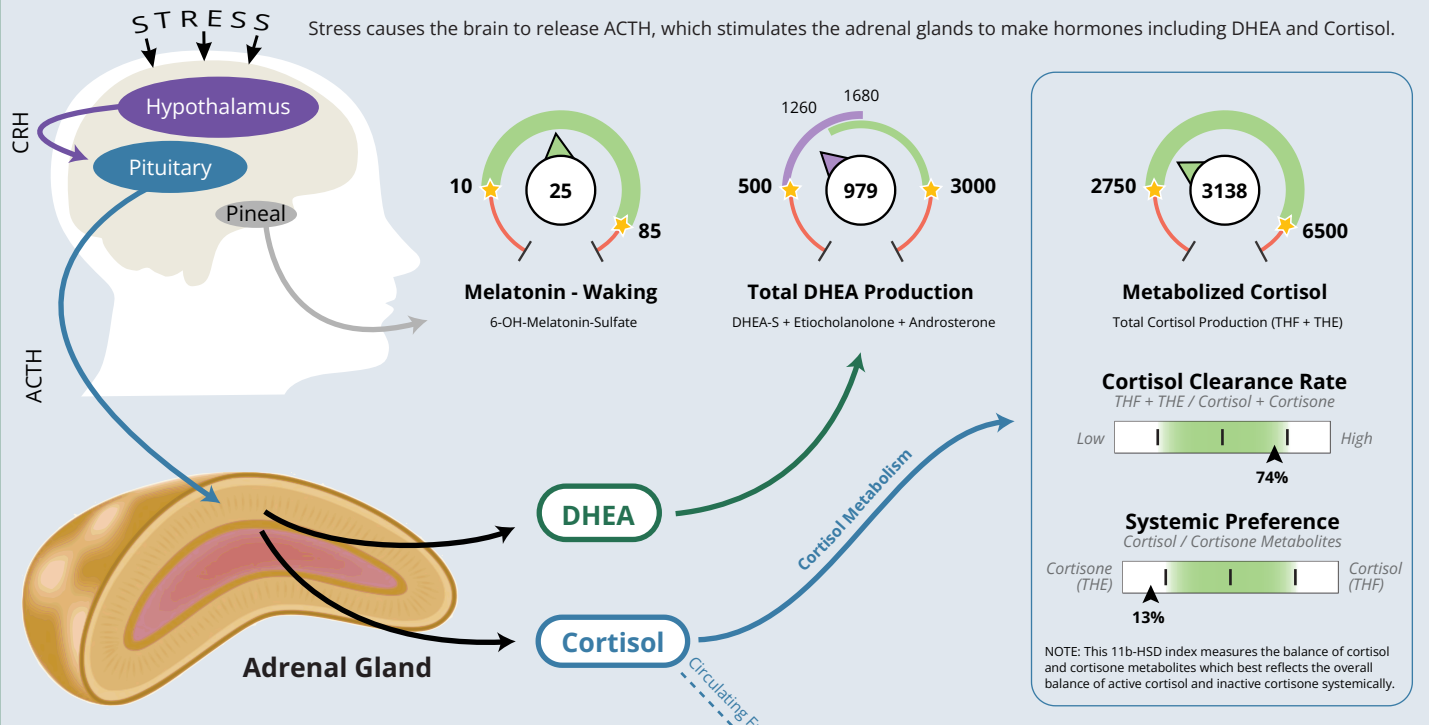
Ordering Provider:

Thomas Polucki, FDN DC

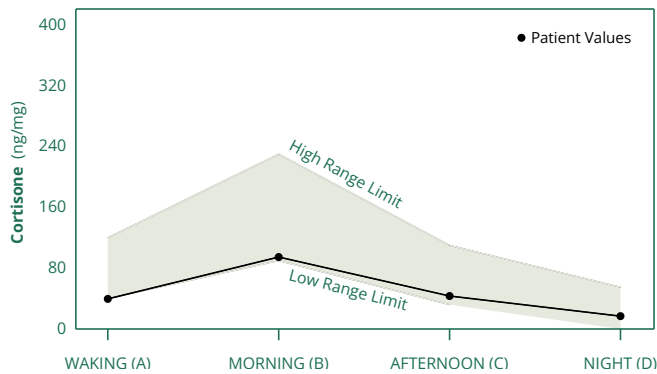
Adrenal Hormones & Metabolites

TEST		RESULT	UNITS	NORMAL RANGE
Daily Free Cortisol and Cortisone (Urine)				
Cortisol A - Waking	Low end of range	10.4	ng/mg	10 - 50
Cortisol B - Morning	Within range	57.7	ng/mg	30 - 130
Cortisol C - Afternoon	Low end of range	8.7	ng/mg	7 - 30
Cortisol D - Night	Within range	2.5	ng/mg	0 - 14
Cortisone A - Waking	Below range	39.6	ng/mg	40 - 120
Cortisone B - Morning	Low end of range	94.7	ng/mg	90 - 230
Cortisone C - Afternoon	Low end of range	43.4	ng/mg	32 - 110
Cortisone D - Night	Within range	16.9	ng/mg	0 - 55
24hr Free Cortisol	Low end of range	79.3	ng/mg	65 - 200
24hr Free Cortisone	Below range	194.7	ng/mg	220 - 450
Creatinine (Urine)				
Creatinine A - Waking	Below range	0.19	mg/ml	0.2 - 2
Creatinine B - Morning	Within range	0.21	mg/ml	0.2 - 2
Creatinine C - Afternoon	Within range	0.20	mg/ml	0.2 - 2
Creatinine D - Night	Within range	0.26	mg/ml	0.2 - 2
Cortisol Metabolites and DHEA-S (Urine)				
a-Tetrahydrocortisol (a-THF)	Within range	166.7	ng/mg	75 - 370
b-Tetrahydrocortisol (b-THF)	Below range	983.4	ng/mg	1050 - 2500
b-Tetrahydrocortisone (b-THE)	Low end of range	1987.5	ng/mg	1550 - 3800
Metabolized Cortisol (THF + THE)	Low end of range	3138.0	ng/mg	2750 - 6500
DHEA-S	Low end of range	42.4	ng/mg	20 - 750
Cortisol Clearance Rate (CCR)	High end of range	11.5		6 - 12.5

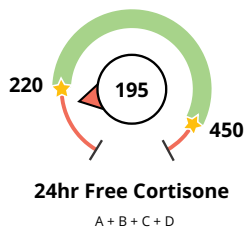
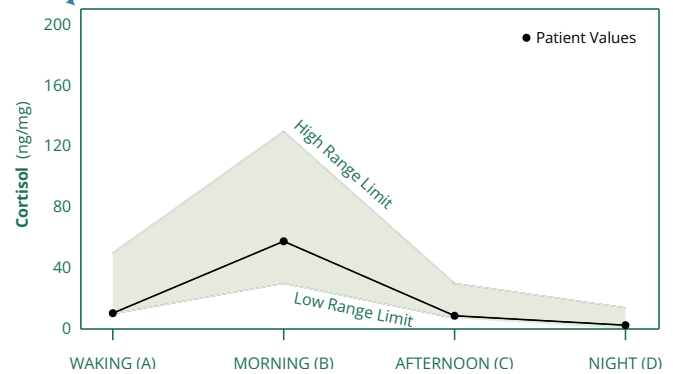
ADRENAL HORMONES & METABOLITES



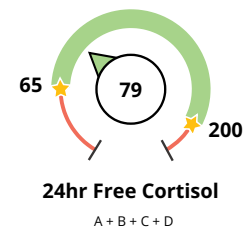
Daily Free Cortisone Pattern



Daily Free Cortisol Pattern



Cortisol and Cortisone interconvert (11b-HSD)





Accession # 01098681

Janette Dunn
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DOB: 1967-09-07

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Ordering Provider:

Thomas Polucki, FDN DC

Organic Acid Tests (OATs)

TEST		RESULT	UNITS	NORMAL RANGE
Nutritional Organic Acids (Urine)				
Vitamin B12 Marker - May be deficient if high				
Methylmalonate (MMA)	Within range	1.6	ug/mg	0 - 2.5
Vitamin B6 Markers - May be deficient if high				
Xanthurenate	Within range	0.55	ug/mg	0.12 - 1.2
Kynurenate	Within range	2.5	ug/mg	0.8 - 4.5
Biotin Marker - May be deficient if high				
b-Hydroxyisovalerate	Within range	9.4	ug/mg	0 - 12.5
Glutathione Marker - May be deficient if low or high				
Pyroglutamate	Above range	59.7	ug/mg	28 - 58
Gut Marker - Potential gut putrefaction or dysbiosis if high				
Indican	Within range	48.0	ug/mg	0 - 100
Neuro-Related Markers (Urine)				
Dopamine Metabolite				
Homovanillate (HVA)	Within range	5.5	ug/mg	3 - 11
Norepinephrine/Epinephrine Metabolite				
Vanilmandelate (VMA)	Within range	3.9	ug/mg	2.2 - 5.5
Neuroinflammation Marker				
Quinolate	Within range	7.0	ug/mg	0 - 9.6
Additional Markers (Urine)				
Melatonin - Waking				
6-OH-Melatonin-Sulfate	Low end of range	24.6	ng/mg	10 - 85
Oxidative Stress / DNA Damage				
8-Hydroxy-2-deoxyguanosine (8-OHdG)	Within range	3.2	ng/mg	0 - 5.2

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>

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.

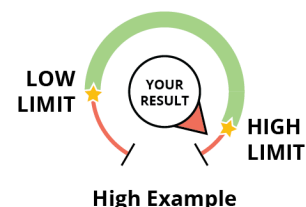
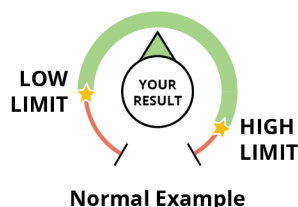
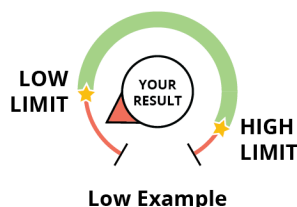
Alert Comments:

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).



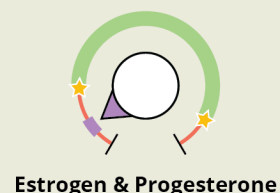
NEW! - AGE DEPENDENT RANGES

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

For estrogen and progesterone dials, the optimal premenopausal range is captured during the luteal phase of the menstrual cycle. The premenopausal range is shown in green, and the postmenopausal range is shown in purple, with **no overlap**. Due to the dramatic decline in estrogen and progesterone during the menopausal transition, the purple band is separate on the left hand (low) side of the dial.

For female androgens, 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.

- Please note: When a result is too low, it may display as "Not Reportable". This includes dials and sliders where calculations have invalid results due to very low inputs or missing samples.
- The patient reports no menstrual cycles.
- The patient reports significant symptoms of androgen deficiency.
- The patient reported significant fatigue in both the AM and PM.

PROGESTERONE

The progesterone dial shows the weighted average of the two main urinary metabolites of progesterone, 5b-pregnanediol and 5a-pregnanediol.

- The weighted average of the two progesterone metabolites shows progesterone is in range for post menopause. Postmenopausal progesterone is produced by the adrenal glands.

ESTROGEN

When evaluating estrogen levels, it is important to assess the following:

Estrogen Levels

The primary ovarian hormone, estradiol (the strongest estrogen), and "total estrogen" levels should be reviewed with the appropriate reference range (premenopausal or postmenopausal). For women on HRT, check in with DUTCH resources on specific HRT types and monitoring.

Estrogen Metabolism

- The 2-OH/16-OH-E1 is high. This indicates greater 2-OH and less 16-OH, which is good. The 2-OH is considered a beneficial phase 1 detox pathway because it is stable, anti-estrogenic, and anti-carcinogenic.

ANDROGENS

When evaluating androgen levels, it is important to assess the following:

Androgen Levels

Review Testosterone and Total DHEA levels for insight into androgen production. While urinary testosterone levels generally agree well with serum testosterone levels, there are some cases where they do not. We recommend using serum testing to confirm a low testosterone result on the DUTCH test.

Androgen Metabolism

5 α -reductase converts testosterone into 5 α -DHT (DHT), which is even more potent (~3x) than testosterone. The best representation of tissue 5 α -DHT and overall androgen status, is 5 α -Androstanediol. Metabolites created down the 5 β -pathway are significantly less androgenic than their 5 α counterparts.

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

- Free cortisol levels are on the lower side of the reference range. Levels of metabolized cortisol confirm that overall cortisol production is reasonable, and the actual diurnal pattern of free cortisol should be examined to further examine cortisol production.

Cortisol Metabolism

- The Systemic Preference slider shows significantly more metabolites of cortisone than cortisol. This can occur with chronic stress, such as a history of persistently high cortisol or glucocorticoid medication use, and with hyperthyroidism or too much thyroid medication. If 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 even more to low tissue cortisol and may be associated with fatigue, chronic inflammation, and poor immune function.

NUTRITIONAL ORGANIC ACIDS

Organic acids begin to build up when a nutrient cofactor or mineral is not present for a specific reaction to occur.

- The OATs are tested from the morning "A" sample. These values are most reliable when the creatinine value for this sample is >0.2mg/mL for female and >0.3mg/mL for male patients. These values may be less reliable with a highly dilute sample with very low creatinine values. If the "A" sample is unusable due to low or no creatinine, another viable sample may be used instead; however, the melatonin will not be reportable as daytime melatonin typically provides less benefit.
- The pyroglutamate is high. Elevated pyroglutamate indicates impaired glutathione production. Mild elevation is typically associated with low or deficient glycine or cysteine. Depending on the case, very elevated pyroglutamate can be seen with excess acetaminophen use or inborn errors of metabolism.

NEURO-RELATED MARKERS

ADDITIONAL MARKERS

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-Androstanediol	20%	80%	6	30	Quinolinat	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."									