



Last Menstrual Period:

2022-12-03

Collection Times:

2022-12-26 05:22AM (S)
2022-12-26 05:52AM (S)
2022-12-26 06:22AM (S)
2022-12-26 04:03PM (S)
2022-12-26 09:12PM (S)
2022-12-26 05:22AM (U)
2022-12-26 07:23AM (U)
2022-12-26 04:01PM (U)
2022-12-26 09:04PM (U)

Ordering Provider:



DOB:

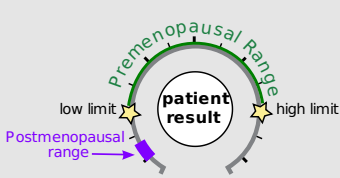


Age: 38

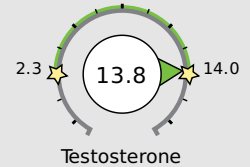
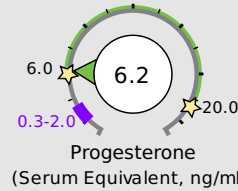
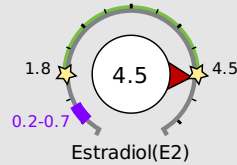
Sex: Female

Hormone Testing Summary

Key (how to read the results):

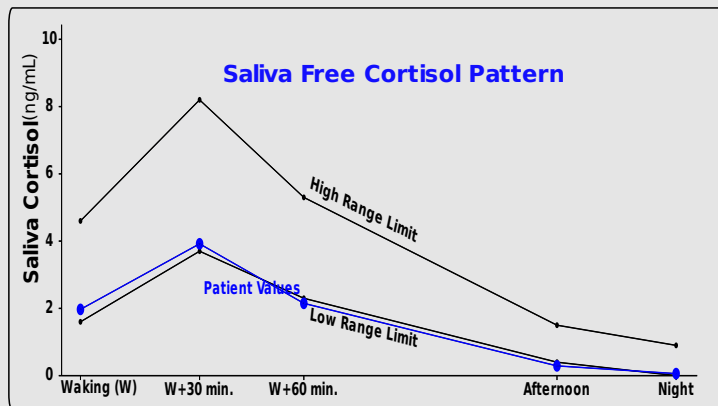


Sex Hormones See Pages 2 and 3 for a thorough breakdown of sex hormone metabolites



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

Adrenal Hormones See pages 4 and 5 for a more complete breakdown of adrenal hormones



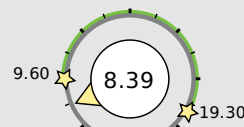
Free cortisol best reflects tissue levels. Metabolized cortisol best reflects total cortisol production.

Total DHEA Production

Age	Range
20-39	1300-3000
40-59	750-2000
>60	500-1200



Total DHEA Production (DHEAS + Etiocholanolone + Androsterone)



Saliva Cortisol Total (Sum of 5 values)

cortisol metabolism



Metabolized Cortisol (THF+THE) (Total Cortisol Production)

The following videos (which can also be found on the website under the listed names along with others) may aid your understanding:

[DUTCH Plus Overview](#) (quick overview) [Estrogen Tutorial](#) [Female Androgen Tutorial](#) [Cortisol/CAR Tutorial](#)

PLEASE BE SURE TO READ BELOW FOR ANY SPECIFIC LAB COMMENTS. More detailed comments can be found on page 7.

The Cortisol Awakening Response (CAR) was 1.95ng/mL (expected range 1.5-4.0) or 99.0% (range 50-160%). See page 5 for more details.



Accession # 00715534



Sex Hormones and Metabolites

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Ordering Provider:



DOB:



Age: 38

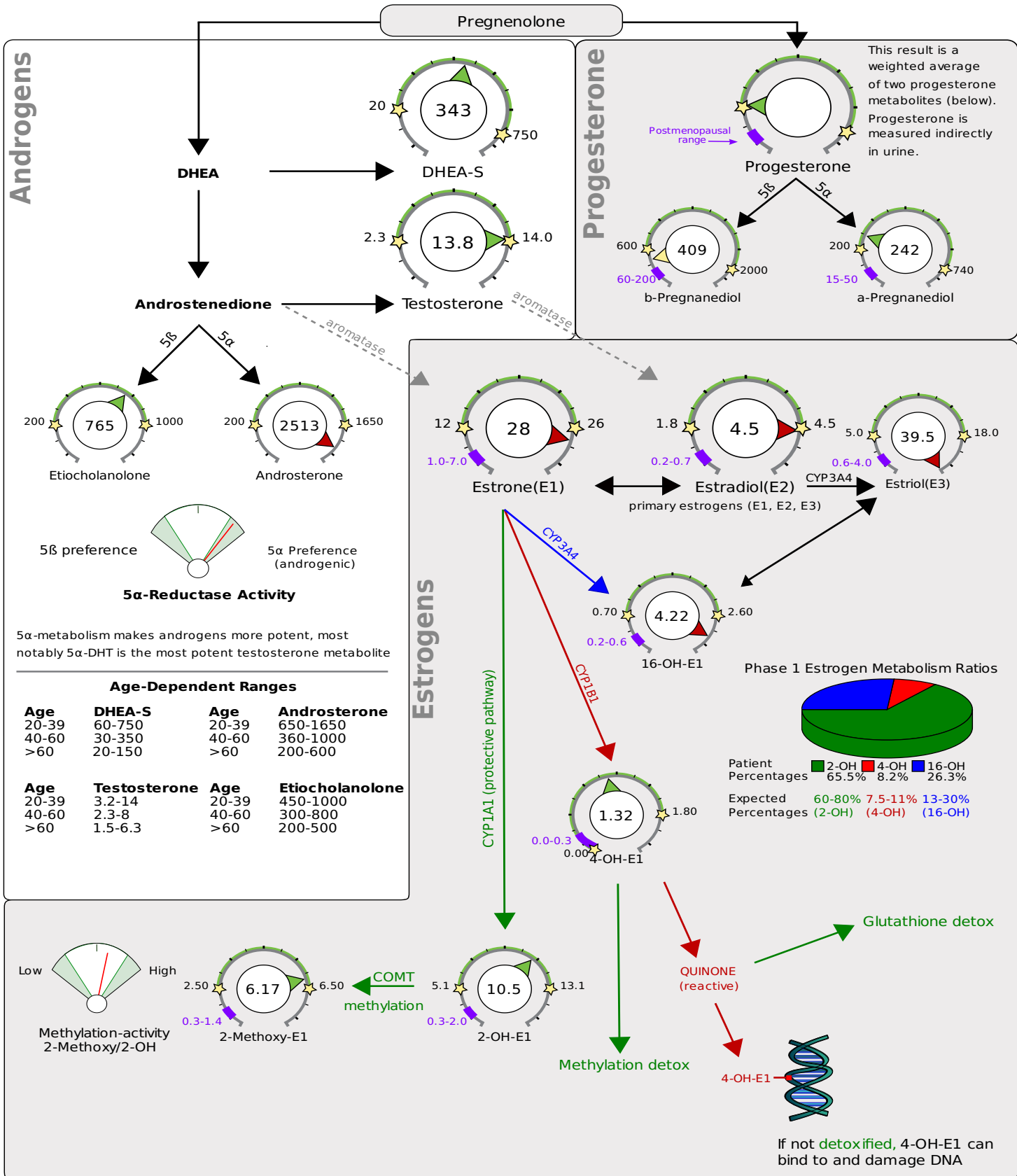
Sex: Female

Test	Result	Units	Luteal* Range	Postmenopausal Range
Progesterone Metabolites (Urine)				
b-Pregnanediol	Below luteal range	409.0	ng/mg 600 - 2000	60-200
a-Pregnanediol	Low end of luteal range	242.4	ng/mg 200 - 740	15-50
Estrogens and Metabolites (Urine)				
Estrone(E1)	Above luteal range	28.3	ng/mg 12 - 26	1.0-7.0
Estradiol(E2)	Above luteal range	4.5	ng/mg 1.8 - 4.5	0.2-0.7
Estriol(E3)	Above luteal range	39.5	ng/mg 5 - 18	0.6-4.0
2-OH-E1	Within luteal range	10.5	ng/mg 5.1 - 13.1	0.3-2.0
4-OH-E1	Within luteal range	1.32	ng/mg 0 - 1.8	0-0.3
16-OH-E1	Above luteal range	4.22	ng/mg 0.7 - 2.6	0.2-0.6
2-Methoxy-E1	High end of luteal range	6.17	ng/mg 2.5 - 6.5	0.3-1.4
2-OH-E2	High end of luteal range	1.0	ng/mg 0 - 1.2	0-0.3
4-OH-E2	Above luteal range	0.53	ng/mg 0 - 0.5	0-0.1
Total Estrogen	Above range	96.0	ng/mg 35 - 70	4.0-15
Androgens and Metabolites (Urine)				
DHEA-S	Within range	342.8	ng/mg 20 - 750	
Androsterone	Above range	2513.0	ng/mg 200 - 1650	
Etiocholanolone	Within range	765.0	ng/mg 200 - 1000	
Testosterone	High end of range	13.8	ng/mg 2.3 - 14	
5a-DHT	Above range	10.23	ng/mg 0 - 6.6	
5a-Androstenediol	Above range	82.9	ng/mg 6 - 30	
5b-Androstenediol	High end of range	70.3	ng/mg 20 - 75	
Epi-Testosterone	Above range	17.4	ng/mg 2.3 - 14	

*the Luteal Range is the premenopausal range. When patients are taking oral progesterone this range for progesterone metabolites is not luteal and reflects the higher levels expected when patients take oral progesterone. This test is intended to be taken in the luteal phase of the menstrual cycle (days 19-22 of a 28 day cycle) for premenopausal women. The ranges in the table below may be used when samples are taken during the first few days (follicular) of the cycle, during ovulation (days 11-14) or when patients are on oral progesterone. See the following pages for age-dependent ranges for androgen metabolites.

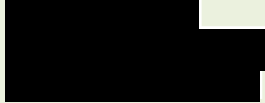
Additional Normal Ranges	Follicular	Ovulatory	Oral Pg (100mg)
b-Pregnanediol	100-300	100-300	2000-9000
a-Pregnanediol	25-100	25-100	580-3000
Estrone (E1)	4.0-12.0	22-68	N/A
Estradiol (E2)	1.0-2.0	4.0-12.0	N/A

Hormone metabolite results from the previous page are presented here as they are found in the steroid cascade. See the Provider Comments for more information on how to read the results.



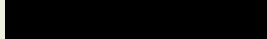


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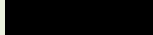


Adrenal

Ordering Provider:



DOB:



Age: 38

Sex: Female

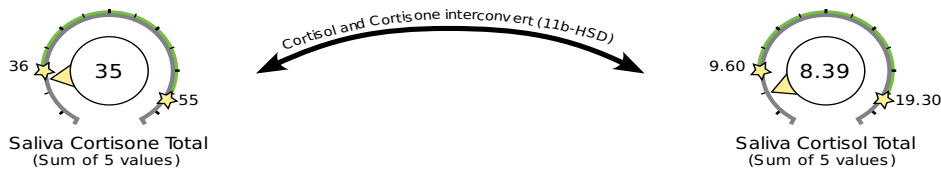
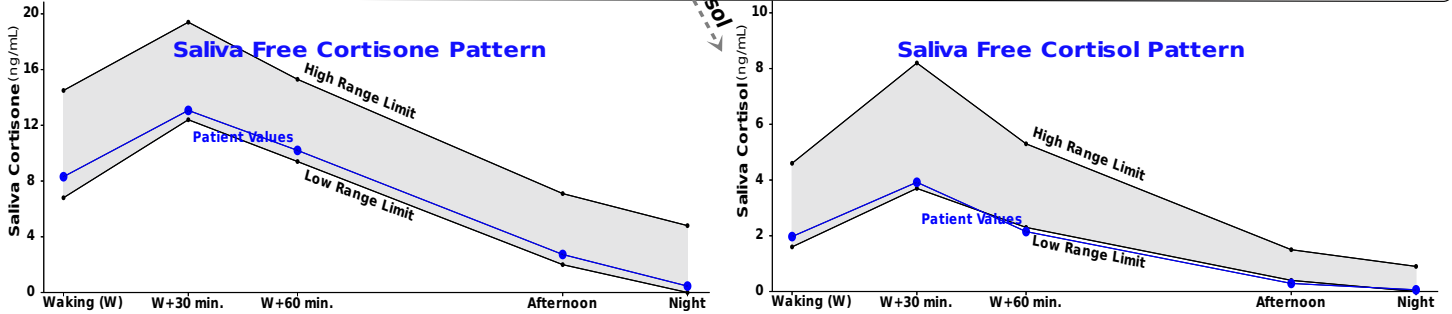
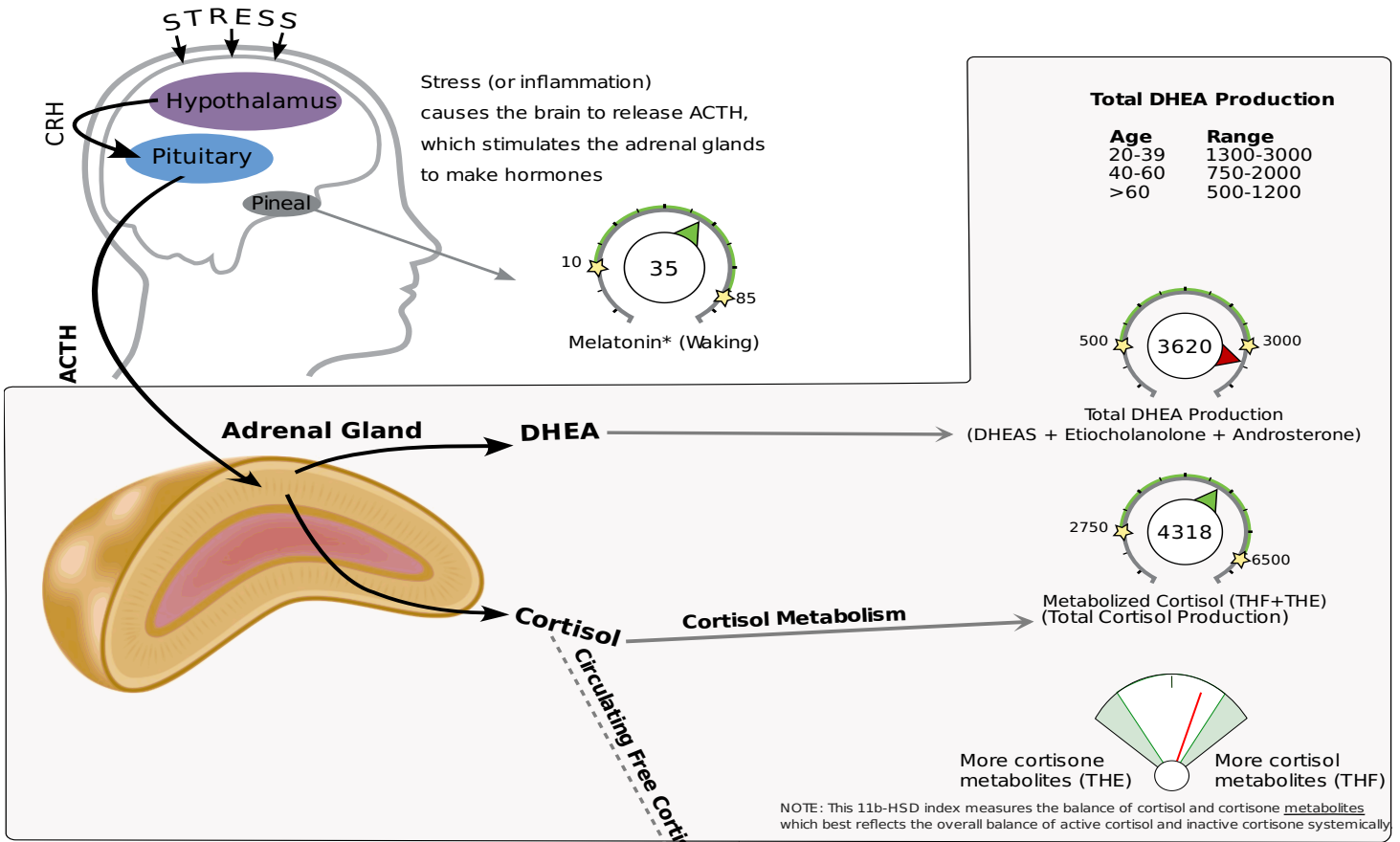
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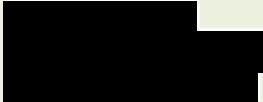
Category	Test	Result	Units	Normal Range
Free Cortisol and Cortisone (Saliva)				
	Saliva Cortisol - Waking (W)	Low end of range	1.97	ng/mL 1.6 - 4.6
	Saliva Cortisol - W+30 min.	Low end of range	3.92	ng/mL 3.7 - 8.2
	Saliva Cortisol - W+60 min.	Below range	2.15	ng/mL 2.3 - 5.3
	Saliva Cortisol - Afternoon	Below range	0.29	ng/mL 0.4 - 1.5
	Saliva Cortisol - Night	Low end of range	0.06	ng/mL 0 - 0.9
	Saliva Cortisone - Waking (W)	Low end of range	8.31	ng/mL 6.8 - 14.5
	Saliva Cortisone - W+30 min.	Low end of range	13.07	ng/mL 12.4 - 19.4
	Saliva Cortisone - W+60 min.	Low end of range	10.2	ng/mL 9.4 - 15.3
	Saliva Cortisone - Afternoon	Low end of range	2.73	ng/mL 2 - 7.1
	Saliva Cortisone - Night	Low end of range	0.46	ng/mL 0 - 4.8
	Saliva Cortisol Total	Below range	8.39	ng/mL 9.6 - 19.3
	Saliva Cortisone Total	Below range	34.77	ng/mL 36 - 55
Creatinine (Urine)				
	Creatinine A (Waking)	Within range	1.77	mg/ml 0.2 - 2
	Creatinine B (Morning)	Within range	1.03	mg/ml 0.2 - 2
	Creatinine C (Afternoon)	Within range	0.74	mg/ml 0.2 - 2
	Creatinine D (Night)	Within range	0.79	mg/ml 0.2 - 2
Cortisol Metabolites and DHEA-S (Urine)				
	a-Tetrahydrocortisol (a-THF)	Above range	622.0	ng/mg 75 - 370
	b-Tetrahydrocortisol (b-THF)	Within range	1390.0	ng/mg 1050 - 2500
	b-Tetrahydrocortisone (b-THE)	Within range	2307.0	ng/mg 1550 - 3800
	Metabolized Cortisol (THF+THE)	Within range	4318.1	ng/mg 2750 - 6500
	DHEA-S	Within range	343.0	ng/mg 20 - 750



The Cortisol Awakening Response (CAR) is the rise in salivary cortisol between the waking sample and the sample collected 30 (as well as 60) minutes later. This "awakening response" is essentially a "mini stress test" and is a useful measurement in addition to the overall up-and-down (diurnal) pattern of free cortisol throughout the day. **This patient shows a waking cortisol of 1.97 and an increase to 3.92 after 30.0 minutes. This is an increase of 1.95ng/mL or 99.0%.** Expected increases differ depending on the methods used. Preliminary research shows that 50-160% or 1.5-4.0ng/mL increases are common with samples collected 30 minutes after waking. These guidelines are considered research only. **This patient shows a salivary cortisol of 2.15 measured 60 minutes after waking. This is an increase of 0.18ng/mL or 9.1% compared to the waking sample.** To date, data suggests that expected results may be 0-70%, and this guideline is considered for research only.

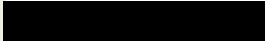


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Organic Acid Tests (OATs)

Ordering Provider:



DOB:



Age: 38

Sex: Female

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Category	Test	Result	Units	Normal Range
Nutritional Organic Acids				
Vitamin B12 Marker (may be deficient if high) - (Urine)				
	Methylmalonate (MMA)	Within range	1.8 ug/mg	0 - 2.5
Vitamin B6 Markers (may be deficient if high) - (Urine)				
	Xanthurenate	Within range	0.32 ug/mg	0.12 - 1.2
	Kynurenate	Within range	1.77 ug/mg	0.8 - 4.5
Glutathione Marker (may be deficient if low or high) - (Urine)				
	Pyroglutamate	Within range	42.7 ug/mg	28 - 58
Biotin Marker (may be deficient if high) - (Urine)				
	b-Hydroxyisovalerate	Above range	12.5 ug/mg	0 - 12.5
Gut Marker (potential gut putrefaction or dysbiosis if high) - (Urine)				
	Indican	Within range	48.9 ug/mg	0 - 100
Neuro-related Markers				
Dopamine Metabolite - (Urine)				
	Homovanillate (HVA)	Below range	2.9 ug/mg	3 - 11
Norepinephrine/Epinephrine Metabolite - (Urine)				
	Vanilmandelate (VMA)	Within range	3.3 ug/mg	2.2 - 5.5
Neuroinflammation Marker - (Urine)				
	Quinolate	High end of range	9.2 ug/mg	0 - 9.6
Additional Markers				
Melatonin (*measured as 6-OH-Melatonin-Sulfate) - (Urine)				
	Melatonin* (Waking)	Within range	35.0 ng/mg	10 - 85
Oxidative Stress / DNA Damage, measured as 8-Hydroxy-2-deoxyguanosine (8-OHdG) - (Urine)				
	8-OHdG (Waking)	Within range	1.73 ng/mg	0 - 5.2