Female Sex Hormone Balance Profile

Patient Information	Clinician/Order Information	Sample Information
Test Patient **DOB: 12/22/1971** **Age: 52** Gender: Female Phone: 856-261-0671 Patient ID: 7ecda1c2	**Test Provider** Health Clinic, Inc +1 215-892-1230 Order date: 3/13/2024	**Accession# 0324-0002314** Collected: 4/2/2024 Received: 4/4/2024 Reported: 4/9/2024 1:28:02 PM Collection time: **1st** 5:00 AM

Analyte	Unit	Observation	Results	Reference Range
Alpha-Pregnanediol	ng/mg CR		118.56	26.00 - 338.00
Alpha-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	118.56	257.00 - 2389.00
Beta-Pregnanediol	ng/mg CR		1549.37	201.00 - 1669.00
Beta-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	1549.37	1600.00 - 12474.00
Total Estrogen Load	ng/mg CR	Low	20.28	30.00 - 130.00
Estrone	ng/mg CR	Low	1.33	1.70 - 8.50
Estradiol	ng/mg CR		0.99	.80 - 3.30
Estriol	ng/mg CR	Low	1.12	2.80 - 11.20
2-Hydroxyestrone	ng/mg CR		3.9	2.00 - 8.40
16a-Hydroxyestrone	ng/mg CR	Below Detection Limit	-	<=1.43
4-Hydroxyestrone	ng/mg CR	Below Detection Limit	-	<=1.20
Testosterone	ng/mg CR	High	11.5	2.30 - 7.80
Dihydrotestosterone	ng/mg CR	Below Detection Limit	-	<=3.20
Average DHEA-S	ng/mg CR	Low	2.72	38.00 - 507.00
Free DHEA	ng/mg CR	Low	2.72	6.10 - 17.30
Waking Cortisol	ng/mg CR		21.2	7.00 - 31.00

Progesterone Markers

	Units	Observation	Target Ranges
Alpha-Pregnanediol	ng/mg CR		26 – 338 (118.56)
Beta-Pregnanediol	ng/mg CR		201 – 1669 (1549.37)
Alpha-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	257 – 2389 (118.56)
Beta-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	1600 – 12474 (1549.37)

Estrogen Markers

	Units	Observation	Target Ranges
Total Estrogen Load	ng/mg CR	Low	30 – 130 (20.28)
Estrone (E1)	ng/mg CR	Low	1.7 – 8.5 (1.33)
Estradiol (E2)	ng/mg CR		0.8 – 3.3 (0.99)
Estriol (E3)	ng/mg CR	Low	2.8 – 11.2 (1.12)

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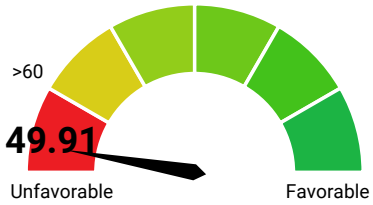
Estrogen Metabolism Markers

	Units	Observation	Target Ranges
2-Hydroxyestrone (2-OHE1)	ng/mg CR		2 – 8.4 (3.9)
16a-Hydroxyestrone (16a-OHE1)	ng/mg CR	Below Detection Limit	< 1.43
4-Hydroxyestrone (4-OHE1)	ng/mg CR	Below Detection Limit	< 1.2
2-Methoxyestrone (2-oMeE1)	ng/mg CR	Low	3.1 – 15.8 (1.95)

Methylation Ratio



The methylation ratio is low indicating methylation support is needed. When 2-OHE1 is very low (under 0.9), this ratio has limited interpretive value and can be ignored. Low methylation can be caused by low levels of donor methyl groups or genetic mutations in the COMT, MTHFR and other methylation markers. Phase II support, including methyl-donor supplements and dietary considerations (paleo-like), can increase methylation. If the patient is taking methyl donor supplements, make certain B-vitamins are included, when increasing methylation, to help eliminate excess methyl groups and prevent methyl trapping (most often seen in patients with compromised COMT activity).

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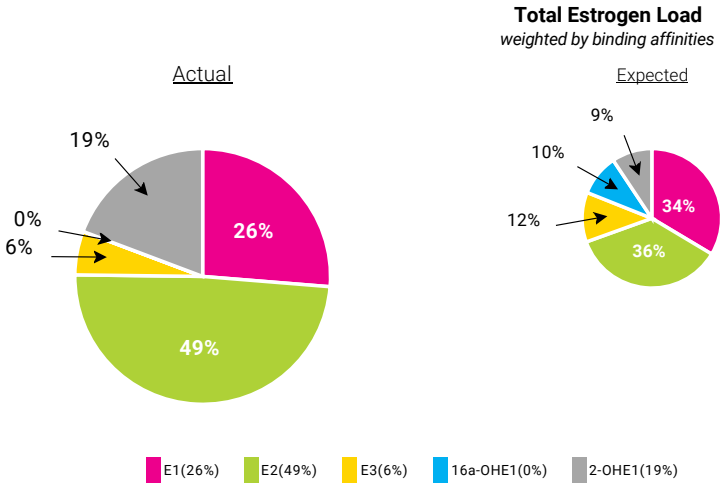
Total Estrogen Load



The Total Estrogen Load considers the binding affinity of each estrogen analyte at the receptor. Due to the high estrogenic strength of 16-aOHE1, low 2:16 ratios can contribute to higher than expected total estrogen levels ,even when E1, E2 and E3 are normal/low. Improving the 2:16 ratio and increasing Phase I metabolism will likely lower 16a-OHE1 and the Total Estrogen Load. To examine the balance between total estrogen components, compare the “actual” chart on the left to the “expected” chart on the right, representing the pathways of estrogen metabolism and their relative ratio to one another. Next, examine the Progesterone: Estrogen ratio to assess the balance between estrogen and progesterone for the best clinical outcomes.

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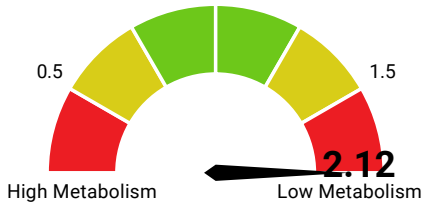
Androgen Markers

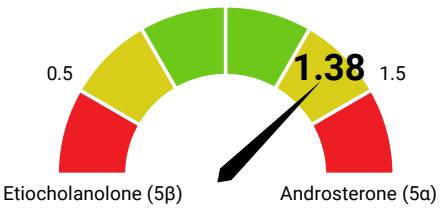
	Units	Observation	Target Ranges
Testosterone	ng/mg CR	High	2.3 – 7.8 (11.5)
Dihydrotestosterone (5a-DHT)	ng/mg CR	Below Detection Limit	< 3.2
Testosterone Metabolites	ng/mg CR		21.9 – 70.1 (49.32)
Average DHEA-S	ng/mg CR	Low	38 – 507 (2.72)
Free DHEA	ng/mg CR	Low	6.1 – 17.3 (2.72)
Etiocholanolone	ng/mg CR		120 – 421 (143.29)
Androsterone	ng/mg CR		147 – 593 (270.9)

Testosterone/Metabolite Ratio



The levels of testosterone metabolites are lower than expected in relative ratio to testosterone. While this can be ok, it can also indicate increased aromatase activity resulting in increased estrogens. If estrogen levels are higher than expected, consider lowering aromatase activity through increased zinc, celery, Resveratrol, cruciferous vegetables or other aromatase inhibitors.

5α-Reductase Activity



5-alpha-reductase (5aR) activity appears normal but may not be clinically relevant if other 5a levels are much higher, or lower, than 5b levels. Confirm this value by comparing 5a-pregnanediol to 5b-pregnanediol, testosterone to 5a-DHT, and cortisol to a-THFs in this report. 5-alpha-reductase also plays a role in aromatase activity. Optimal balance exists when the ratio is nearest 1 (center). If the patient is at the high or low end of normal (yellow zone), they are approaching an imbalance.

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HPA-Axis Markers

	Units	Observation	Target Ranges
Waking Cortisol	ng/mg CR		7 — 21.2 — 31
Waking Cortisone	ng/mg CR		26 — 41.6 — 75
Free DHEA	ng/mg CR	Low	6.1 — 2.72 — 17.3

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Patient Result History

Analyte	Unit	4/9/2024 | (0324-0002314)		
		Observation	Results	Reference Range
Creatinine	mg/dL		87.84	30.00 - 300.00
Estrogen and Progesterone Markers				
Alpha-Pregnanediol	ng/mg CR		118.56	26.00 - 338.00
Alpha-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	118.56	257.00 - 2389.00
Beta-Pregnanediol	ng/mg CR		1549.37	201.00 - 1669.00
Beta-Pregnanediol (w/ Oral Pg)	ng/mg CR	Low	1549.37	1600.00 - 12474.00
Alpha-Pregnanediol / Beta-Pregnanediol Ratio	Ratio	Low	0.36	.50 - 1.50
Total Estrogen Load	ng/mg CR	Low	20.28	30.00 - 130.00
Estrone	ng/mg CR	Low	1.33	1.70 - 8.50
Estradiol	ng/mg CR		0.99	.80 - 3.30
Estriol	ng/mg CR	Low	1.12	2.80 - 11.20
2-Hydroxyestrone	ng/mg CR		3.9	2.00 - 8.40
16a-Hydroxyestrone	ng/mg CR	Below Detection Limit	-	<=1.43
4-Hydroxyestrone	ng/mg CR	Below Detection Limit	-	<=1.20
E Quotient	Ratio	Low	0.48	>=1.00
2-Methoxyestrone	ng/mg CR	Low	1.95	3.10 - 15.80
2:16 Ratio (2-OHE1/16α-OHE1)	Ratio	Unable to Calculate	-	>=4.00
Methylation Ratio	Ratio	Low	49.91	>=60.00
Androgen Markers				
Testosterone	ng/mg CR	High	11.5	2.30 - 7.80
Dihydrotestosterone	ng/mg CR	Below Detection Limit	-	<=3.20
Testosterone Metabolites	ng/mg CR		49.32	21.90 - 70.10
Testosterone/Metabolite Ratio	Ratio	High	2.12	.50 - 1.50
Androsterone	ng/mg CR		270.9	147.00 - 593.00
Etiocholanolone	ng/mg CR		143.29	120.00 - 421.00
5-alpha-Androstanediol	ng/mg CR		8.51	2.80 - 14.20
5-beta-Androstanediol	ng/mg CR		40.81	14.00 - 54.00
Free DHEA	ng/mg CR	Low	2.72	6.10 - 17.30
Average DHEA-S	ng/mg CR	Low	2.72	38.00 - 507.00
5α-Reductase Activity	Ratio		1.38	.50 - 1.50
Androstenedione	ng/mg CR	Below Detection Limit	-	.00 - 1.20
HPA - Axis Markers				
Waking Cortisol	ng/mg CR		21.2	7.00 - 31.00
Waking Cortisone	ng/mg CR		41.6	26.00 - 75.00

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