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Accession #: Test: Doctor ID:
Patient Name:
Date of Birth:
Age: Gender:
Collected:
Received:
Reported: Phone:
Tech: Fax:

CompletePlus Hormone Profile (Dried Urine)

Creatinine: **61** **mg/dL**

Estrogens

Reference Ranges

Postmenopausal women on hormones, or cycling women collecting during the luteal phase, refer to the luteal reference range.

Postmenopausal women not taking hormones, refer to the post-menopausal reference range

	µg/g Creatinine		Luteal	Post-Menopausal
Estrone (E1)	**14.0**		4.1 – 21.6	0.7 – 5.2
Estradiol (E2)	**3.3**		1.6 – 6.6	0 – 2.8
Estriol (E3)	**26.4**	**H**	5.4 – 23.2	0 – 5.7
Total (E1 + E2 + E3)	**43.7**		12.6 – 47.8	0 – 13.6
Phase I Metabolites				
2-OH Estrone (2OHE1)	**10.7**		3.2 – 22.2	0.2 – 4.1
16α-OH Estrone (16αOHE1)	**5.9**		1.2 – 7.1	0.1 – 2.4
4-OH Estrone (4OHE1)	**0.95**		0.32 – 2.26	0 – 0.82
2/16 Ratio	**1.8**		1.6 – 7.7	1.6 – 7.7
Phase II Metabolites				
2-Methoxyestrone	**3.16**		1 – 6.8	0.2 – 2.3
2-Methoxyestradiol	**0.32**		0.1 – 0.53	0 – 0.22

Other Reference Ranges	Estrone	Estradiol	Estriol	Estrogen Total	Pregnanediol
Follicular	2.0-39	1.0-23	3.0-48	7.0-110	0-2500
Mid-Cycle	11.0-46	4.0-45	20-130	38-221	N/A

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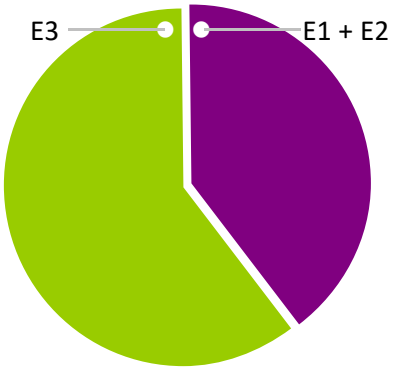
Estrogen Ratios

Estrogen Ratios

Estrogen Quotient: 1.5

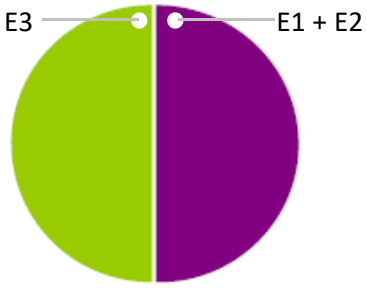
E3/(E1+E2)

Patient Result



Reference Range

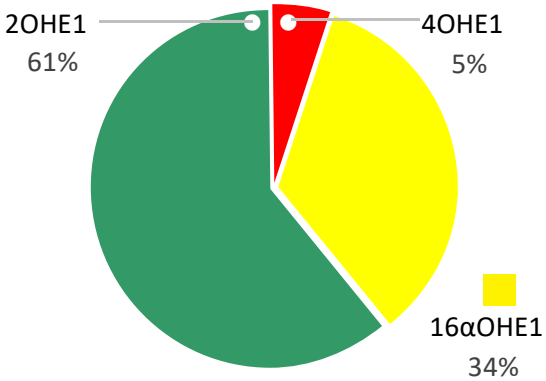
>1



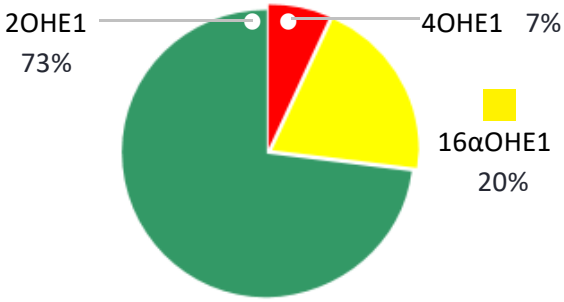
Patients with an EQ>1 have a higher survival rate after breast cancer, and may be at decreased risk for developing breast cancer. EQ often declines as women enter menopause.

Estrogen Hydroxylation

Patient Result



Reference Range



2-OHE1, a Phase I liver metabolite of estrone, is considered protective. 16α-OHE1 is a Phase I metabolite of estrone that has some duality: it is potentially carcinogenic and it is important for building bone. Therefore, very high levels and very low levels are both undesireable. High levels suggest a need for measures to improve estrogen detoxification. Low levels may increase risk of osteopenia.

4-OHE1 is a highly carcinogenic Phase I metabolite. Low levels are desireable.

Methylation Ratio: 0.30

2-Methoxyestrone/2OHE1

Patient Result

Reference Range

0.2 - 0.65

A comparison of 2-Methoxyestrone with 2OHE1 allows insight into methylation pathways. If the methylation ratio is on the low end of the reference range, consider adding supplements to improve methylation. If needed, consider further testing for methylation defects.

Progesterone

	µg/g Creatinine	Reference Ranges: Luteal	Reference Ranges: Post-Menopausal
5β-Pregnanediol	**1697**	689 – 3871	167 – 537

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Androgens

	µg/g Creatinine		Reference Range
DHEA	**56**	**L**	100 – 1333
Androsterone	**1359**		636 – 2327
Etiocholanolone	**1413**		630 – 3006
Testosterone	**2.5**	**L**	3 – 12.2
DHT	**< 0.3**		0.3 – 2.9
5α-Androstanediol	**20.4**		4 – 33
5β-Androstanediol	**53.7**		8 – 122

Glucocorticoids

	µg/g Creatinine		Reference Range
Pregnanetriol	**899**		140 – 1293
Cortisone (E)	**110**		39 – 143
Cortisol (F)	**76**		32 – 121
Tetrahydrocortisone (THE)	**3555**	**H**	1112 – 3475
Allo-Tetrahydrocortisol (5α-THF)	**887**		443 – 1651
Tetrahydrocortisol (THF)	**1169**		585 – 1631
Adrenal Reserve (THE+5α-THF+THF)	**5611**	**H**	2908 – 5535
11β-Hydroxyandrosterone	**530**		251 – 1013
11β-Hydroxyetiocholanolone	**267**		47 – 481

Mineralocorticoids

	µg/g Creatinine	Reference Range
Allo-Tetrahydrocorticosterone (5α-THB)	**183**	105 – 412
Tetrahydrocorticosterone (THB)	**102**	32 – 166
11-Dehydrotetrahydrocorticosterone (THA)	**113**	46 – 231

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Enzyme Activity Phenotype Assessment

5α-Reductase

Reference Range

Andro/Etio Ratio **0.96** 0.6 – 2.2

5α-THF/THF Ratio **0.76** 0.6 – 1.6

Elevated 5α-reductase activity is associated with Polycystic Ovarian Syndrome (PCOS) and hirsutism in women, Benign Prostatic Hyperplasia (BPH) and premature baldness in men, and obesity and insulin resistance in both genders. Low 5α-reductase activity may result in reduced conversion of testosterone to DHT and undervirilization in males.

11β-HSD II (11β-hydroxysteroid dehydrogenase II)

Cortisol/Cortisone Ratio (11β-HSD II) **0.69** 0.5 – 1.2

11β-HSD II is predominantly a renal enzyme. It inactivates cortisol in order to prevent competitive binding to mineralocorticoid receptors. Its activity can be measured by the ratio of cortisol/cortisone. An elevated ratio (toward right on the graph) indicates suppressed enzyme activity, and may be clinically related to stress, hypertension, high dose licorice, cortisol administration, or insulin resistance.

Other Analytes

Melatonin

	µg/g Creatinine		Reference Range
6-Sulfatoxymelatonin (1st Morning)	**102.6**	**H**	17.7 – 84.4

Thyroid

	µg/g Creatinine	Reference Range
Free T3	**331**	266 – 938
Free T4	**496**	341 – 1524

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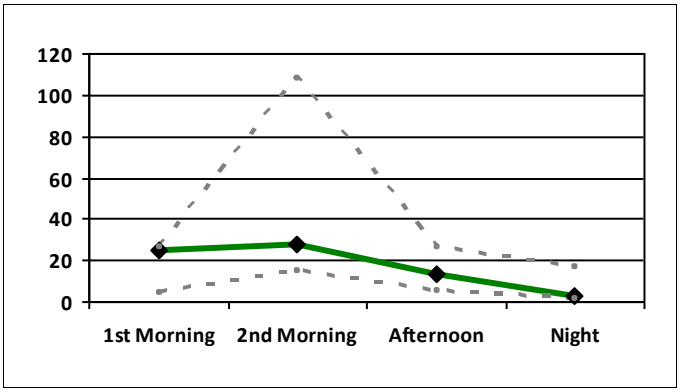
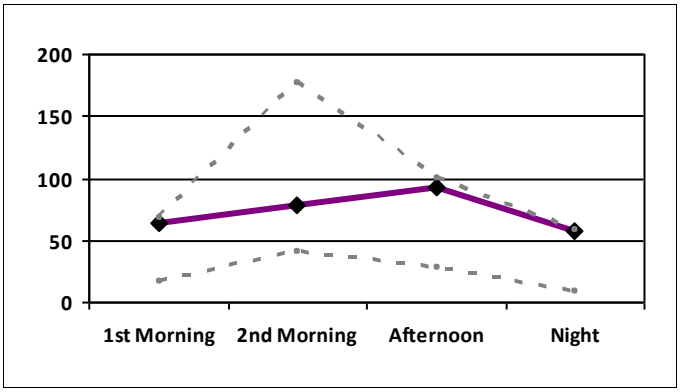
4-Point Cortisol and Cortisone

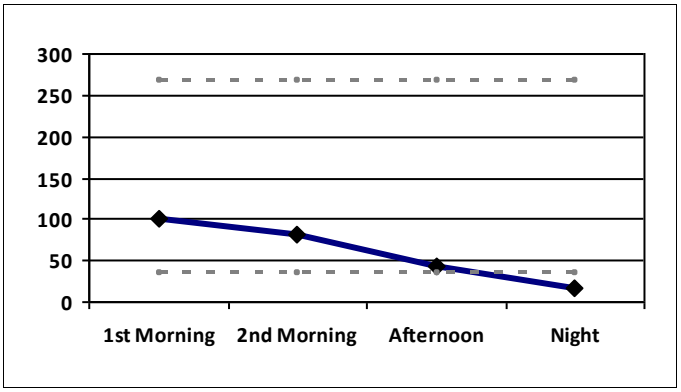
Cortisol	µg/g	Range
1st Morning	24.6	4.4 - 26.9
2nd Morning	27.9	15.5 - 108
Afternoon	13.8	6.2 - 26.7
Night	2.4	1.8 - 17.7



Cortisone	µg/g	Range
1st Morning	64.0	18.2 - 69.3
2nd Morning	78.4	41 - 177.1
Afternoon	92.7	28.4 - 101.3
Night	57.2	10.3 - 58.8



Creatinine	mg/dL		Range
1st Morning	101		35 - 270
2nd Morning	81		35 - 270
Afternoon	43		35 - 270
Night	17	L	35 - 270



- - - - - - - Upper and lower limits of reference range.