

Estrogen Metabolism Plus (FMV)



63 Zillico Street
Asheville, NC 28801
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Patient: **SAMPLE PATIENT**

Age: 36
Sex: M
MRN:

Order Number:

Completed: January 17, 2008
Received: January 05, 2008
Collected: January 03, 2008

Urine Tests

		Reference Range
2-Hydroxyestrone (FMV urine)	1.88	0.16-4.41 mcg/L (SG)
2-Methoxyestrone (FMV urine)	0.45	0.17-1.97 mcg/L (SG)
16 α -Hydroxyestrone (FMV urine)	1.80	0.12-1.17 mcg/L (SG)
4-Hydroxyestrone (FMV urine)	1.02	0.12-1.07 mcg/L (SG)
4-Methoxyestrone (FMV urine)	0.75	0.17-1.30 mcg/L (SG)
2-Hydroxyestrone/16 α -Hydroxyestrone Ratio (FMV urine)	1.04	0.61-7.53
2-Methoxyestrone/2-Hydroxyestrone Ratio (FMV urine)	0.24	0.42-1.14
4-Methoxyestrone/4-Hydroxyestrone Ratio (FMV urine)	0.74	0.81-1.62

Commentary

The performance characteristics of all assays have been verified by Genova Diagnostics, Inc. Unless otherwise noted with * as cleared by the U.S. Food and Drug Administration, assays are For Research Use Only.

Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

A high level of 16α -hydroxyestrone (16α -OHE1) generally represents a non-beneficial shift in estrogen metabolism. Elevations of this metabolite may be associated with increased risk of lupus, breast cancer, and other estrogen-dependent diseases. However, there may be a protective association between higher levels of this metabolite and osteopenia, at least in non-obese, Asian women. Obesity may contribute to high levels, as can pesticide exposure or low thyroid. Fortunately, there are a number of strategies that appear to minimize the influence of 16α -OHE1: increased intake of cruciferous vegetables, normalizing body weight, exercise, omega-3 fatty acids, and flaxseed lignans, all of which act to increase production of the more protective 2-hydroxyestrone.

The ratio of 2-methoxyestrone to 2-hydroxyestrone (2-MeOE1:2-OHE1) provides a gauge of methylation efficiency in the body. The 2-hydroxyestrogen metabolites are generally considered protective against breast (and possibly prostate) cancer; however, they are only protective when converted to their methylated forms. Lower ratios suggest inadequate methylation of estrogen. Rule out excess stress, as catecholamines compete for the same COMT methylation enzyme. Ensure adequate nutritional support for methylation, e.g., methionine, Mg, B vitamins, and betaine (TMG).

The ratio of 4-methoxyestrone to 4-hydroxyestrone (4-MeOE1:4-OHE1) provides a gauge (along with 2-MeOE1:2-OHE1) of methylation efficiency in the body. If not adequately methylated to 4-MeOE1 by catechol-O-methyltransferase (COMT), 4-OHE1 can more easily convert to compounds that damage DNA and increase risk of breast and prostate cancer. A lower 4-MeOE1:4-OHE1 ratio thus suggests inadequate methylation of estrogen. Rule out excess stress, as catecholamines compete for the same COMT methylation enzyme. Ensure adequate nutritional support for methylation, e.g., methionine, Mg, B vitamins, and betaine (TMG).