



Clinical Laboratory

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Ordering Physician:

Metamatrix

3425 Corporate Way  
Duluth, GA 30096

Accession Number: **A1011020249**

Reference Number:

Patient: Sample Report

Age: 48 Sex: Female

Date of Birth: 02/05/1962

Date Collected: 11/1/10

Date Received: 11/2/10

Report Date: 11/18/10

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Reprinted:

Comment:

## 0142 Estronex™ Estrogen Metabolites - Urine

### The New Layout

The Estronex report has been reorganized to help you find answers to the following clinically relevant questions:

1. Is the 2/16 ratio low? If so, then...
  - There may be an increased risk for cancer in estrogen-sensitive tissue.
  - The ratio may be increased by adding brassica vegetables or supplementing with I3C or DIM. Soy isoflavones, omega-3 fatty acids or flax seed (not oil) may also have favorable effects.
2. Is the 4-hydroxyestrone level abnormally high? If so, then...
  - This is another result that may be associated with increased cancer risk.
  - Methylation factors may be evaluated (vitamin B12, folate, COMT SNPs, methyl donor supply).
3. Is the 2-OHE1/2-OMeE1 ratio high? If so, then...
  - Catecholestrone methylation status is poor.
  - Methylation ratios may be improved (lowered) by adding cofactors (vitamin B12 or folate) and methyl donors (such as betaine or DMG). Testing functional need for vitamin B12 or folate is recommended.

### The 2/16 Ratio Range

Numerous studies have established that the relative risk of cancer in estrogen-sensitive tissues is increased for individuals with 2/16 ratios less than 2.0 when hydroxyestrogens are assayed by an immunoassay method (1). The UPLC/MS-MS analytical method now used at Metamatrix gives superior analytical results and allows additional metabolites to be determined (2). The 2/16 ratio cutoff value of 7.0 shown on this report is the point at which the percentage of low results is equivalent to that for the immunoassay method.

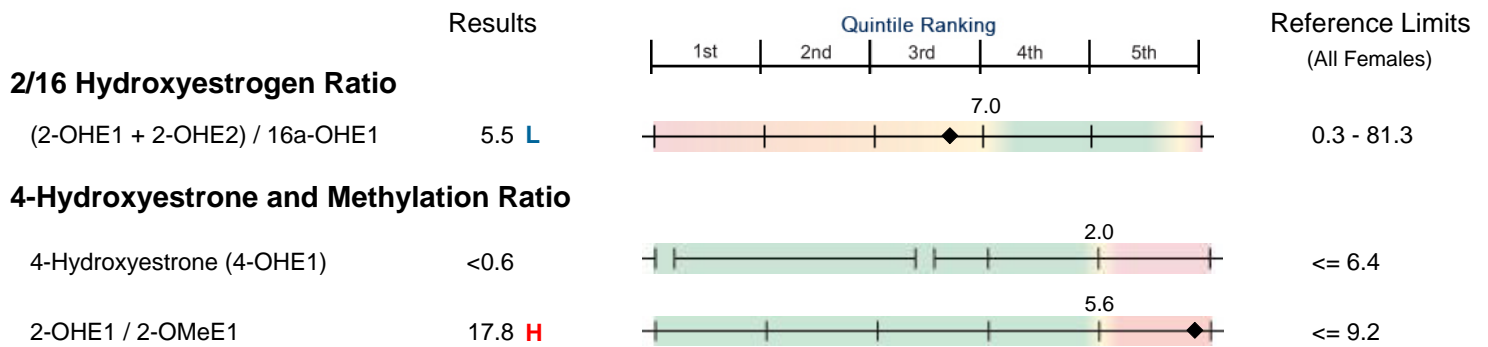
1. Sepkovic DW, Bradlow HL. Estrogen hydroxylation--the good and the bad. *Ann N Y Acad Sci.* Feb 2009;1155:57-67.
2. Falk RT, Xu X, Keefer L, Veenstra TD, Ziegler RG. A liquid chromatography-mass spectrometry method for the simultaneous measurement of 15 urinary estrogens and estrogen metabolites: assay reproducibility and interindividual variability. *Cancer Epidemiol Biomarkers Prev.* Dec 2008;17(12):3411-3418.

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**0142 Estronex™ Estrogen Metabolites - Urine**

Methodology: UPLC/MS/MS, Colorimetric Assay



	Results ng/mg creatinine	95% Reference Limits			
		Pre-Menopausal Females	Post-Menopausal Females (no hormone therapy)	Post-Menopausal Females (on hormone therapy)	Males
<b>Hydroxyestrogens</b>					
2-Hydroxyestrone (2-OHE1)	<b>8.9</b>	0.6 - 28.1	0.6 - 16.5	0.6 - 58.9	0.6 - 16.8
2-Hydroxyestradiol (2-OHE2)	<b>15.7</b>	0.9 - 27.5	0.9 - 33.9	0.9 - 26.3	0.9 - 18.9
2-OHE1 + 2-OHE2	<b>24.6</b>	0.6 - 47.0	0.3 - 43.4	0.9 - 84.7	0.2 - 24.3
4-Hydroxyestrone (4-OHE1)	<b>&lt;0.6</b>	< 6.7	< 2.6	< 7.8	< 4.1
16a-Hydroxyestrone (16a-OHE1)	<b>4.5</b>	0.2 - 14.8	0.2 - 3.4	0.2 - 43.0	0.2 - 4.9
<b>Methoxyestrogens</b>					
2-Methoxyestrone (2-OMeE1)	<b>0.5</b>	0.4 - 10.3	0.4 - 4.4	0.4 - 13.3	0.4 - 11.0
4-Methoxyestrone (4-OMeE1)	<b>&lt;0.7</b>	0.7 - 2.6	0.7 - 2.0	0.7 - 2.6	0.7 - 4.2

Creatinine = 188 mg/dL

**Comments:**

\*UC = Unable to calculate

Low 2/16 ratios may be raised by adding brassica vegetables or supplementing with I3C or DIM. Omega-3 fatty acids or flax seed (not oil) may also have favorable effects.

Methylation ratios may be improved (lowered) by adding cofactors (vitamin B12 or folate) and methyl donors (such as betaine or DMG). Testing functional need for vitamin B12 or folate is recommended.

- These guidelines are intended as a starting point for the clinician who requested the test and are based only on the laboratory results included in this report.
- Final recommendations should be implemented by the clinician with consideration of medical history and current clinical observations.
- These tests are not intended for the diagnosis of specific disorders.