



Accession Number: **A1001130349**

Reference Number:

Patient: Sample Report

Age: 47 Sex: Female

Date of Birth: 02/05/1962

Date Collected: 1/12/10

Date Received: 1/13/10

Report Date: 1/13/10

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Reprinted: 1/18/10

Comment:

Metametrix

3425 Corporate Way  
Duluth, GA 30096

## 0142 Estronex™ Estrogen Metabolites - Urine

The method used for this assay has been changed from immunoassay to liquid chromatography with tandem mass spectrographic detection (LC-MS/MS). These changes lead to the following alterations in analytes and interpretations:

### Regarding the 2/16 ratio

- 2-Hydroxyestrone (2-OHE1) and 2-hydroxyestradiol (2-OHE2) are now independently determined.
- Relative contributions of each of these 2-hydroxylated estrogens may now be evaluated.
- The sum of 2-OHE1 & 2-OHE2 is calculated from the two independent measurements.
  - o This sum is equivalent to the 2/16 ratio numerator generated by the previous immunoassay method.
- Accurate readings can be now made at very low and very high concentrations that were previously truncated by the immunoassay method.
- These methodological changes result in the new reference ranges shown.

### Regarding other metabolites

- Other metabolites with potential relevance to cancer risk are added to the profile.
  - o Elevated 4-hydroxyestrone (4-OHE1) may be associated with increased risk, especially when hydroxyestrogen methylation is poor.
  - o Hydroxyestrogen methylation is evaluated by the ratio of 2-OHE1 to 2-methoxyestrone (2-OHE1 / 2-OMeE1).
    - Poor ability to methylate (and detoxify) 4-OHE1 is indicated when this ratio is high.
    - The methylated form of 4-OHE1 (4-OMeE1) is also assayed, but frequently the values are below the limit of detection, so the ratio cannot be calculated.

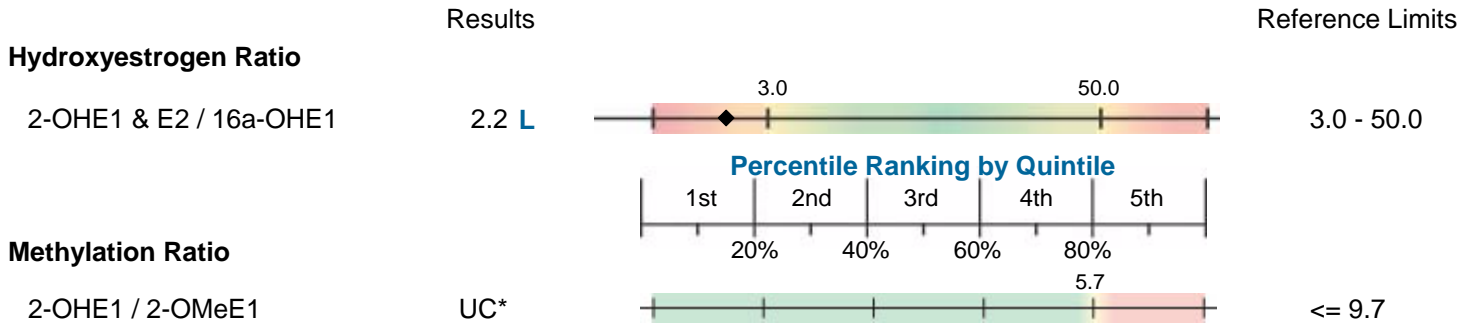
Ordering Physician:

Metametrix

3425 Corporate Way  
 Duluth, GA 30096

**0142 Estronex™ Estrogen Metabolites - Urine**

Methodology: UPLC/MS/MS, Colorimetric Assay



\*UC = Unable to calculate

	ng/mg creatinine	95% Reference Limits			
		Pre-Menopausal Females	Post-Menopausal Females (no hormone therapy)	Post-Menopausal Females (on hormone therapy)	Males
<b>2/16 Ratio factors</b>					
2-Hydroxyestrone (2-OHE1)	<b>1.9</b>	0.6 - 44.2	0.6 - 18.7	0.6 - 121.4	0.6 - 4.8
2-Hydroxyestradiol (2-OHE2)	<b>2.3</b>	0.3 - 71.6	0.3 - 87.4	0.3 - 73.9	0.3 - 26.8
2-OHE1 + 2-OHE2	<b>4.2</b>	0.6 - 89.9	0.6 - 89.1	0.6 - 194.7	0.6 - 29.3
16a-Hydroxyestrone (16a-OHE1)	<b>1.9</b>	0.2 - 20.4	0.2 - 6.2	0.2 - 73.9	0.3 - 2.2
<b>4-Hydroxyestrone and estrogen methylation factors</b>					
4-Hydroxyestrone (4-OHE1)	<b>&lt;0.6</b>	<= 5.7	<= 2.0	<= 10.4	<= 2.0
4-Methoxyestrone (4-OMeE1)	<b>&lt;0.66</b>	>= 0.66	>= 0.66	>= 0.66	>= 0.66
2-Methoxyestrone (2-OMeE1)	<b>&lt;0.41</b>	>= 0.41	>= 0.41	>= 0.41	>= 0.41

Creatinine = 100 mg/dl

- Low 2/16 ratios may be raised 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. However, soy isoflavones are considered mildly estrogenic and may not be suited for patients with hormone sensitive cancers.

- High 2/16 ratios caused by very low 16a-OHE1 may contribute to bone loss due to poor osteoblastic activity. This situation usually occurs when total estrogen is low.

- Methylation ratios may be improved by adding cofactors (vit. B12 or folate) or methyl donors (betaine or DMG).

· 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.