



Why are some women susceptible, but not others?

Researchers at Rockefeller University have found that the body metabolizes estrogens into several different forms that can impact cancer development. One form, 2-hydroxyestrone (2-OHE1), tends to inhibit cancer growth. Another, 16- α -hydroxyestrone (16- α -OHE1), actually encourages tumor development. A woman's "biochemical individuality" determines how much of each form is produced. Studies have shown that measuring the ratio of these two forms of estrogen provides an important indication of risk for future development of breast cancer. *The studies also show that this risk can be modified!*

What is the Estronex™ 2/16 Test?

The **Estronex 2/16** Test is a measurement of these two important forms of estrogen: 2-OHE1 (the "good" estrogen) and 16- α -OHE1 (the "bad" estrogen). The ratio of "good to bad estrogen" is determined from a single urine specimen. Studies have shown that women with low **Estronex 2/16** ratios have much higher rates of breast cancer. Low **Estronex 2/16** ratios also indicate increased long-term risk for other estrogen-sensitive cancers, including uterine, ovarian, cervical, and even head and neck cancers.

What can I do if my ratio is low?

Consuming more foods containing indole-3-carbinol (I3C) can raise the **Estronex 2/16** ratio. I3C is found in cruciferous vegetables, like broccoli, cauliflower, cabbage, and Brussels sprouts. Nutritional supplements containing I3C or diindolylmethane (DIM), a supplement closely related to I3C, have also been shown to raise the **Estronex 2/16** ratio. Follow-up testing is strongly recommended to ensure that your treatment plan is effective over time.

What else can I do to raise my ratio?

- ❖ Consume more ground flax seed or soy isoflavones, which favorably benefit the Estronex 2/16 ratio.
- ❖ Increase the amount of omega-3 oils from fish in your diet, which have been shown to exert anti-cancer effects and improve the Estronex 2/16 ratio.
- ❖ Exercise



Estronex™

**Now You Can With a
Simple Urine Test!**

**A test to determine if
you might be at risk...**

**and a plan to
reduce that risk.**

EStrONE[™]

**Breast Cancer will strike more
than 210,000 women this year
and claim more than 40,000
lives in 2005.**

American Cancer Society, Breast Cancer Facts, 2005

*The following may contribute to your risk
of developing estrogen-sensitive cancers,
including breast, cervical, and head and
neck cancers.*

- ❖ Prolonged use of oral contraceptives
- ❖ Synthetic hormone replacement therapy
- ❖ Family history of breast cancer
- ❖ Obesity or sedentary lifestyle
- ❖ Consumption of 2 or more alcoholic
drinks per day

This information is provided by your health practitioner:

**Every Woman Should
Know Her Risk for
Breast Cancer...**



EStrONE[™]

Metamatrix[®]
Clinical Laboratory

www.metamatrix.com

Shipping Instructions

1. **WRITE** your name, address, and telephone number in the "From" section of the **right-hand side** of the FedEx® Billable Stamp (shipping label). Do not make any other changes to the stamp or sign the "Release Signature" area.
2. **PEEL** off the adhesive backing on the FedEx Billable Stamp. **Important:** Retain the shaded, left-hand side of the **Billable Stamp**. This is your customer receipt for tracking purposes.
3. **ADHERE** FedEx Billable Stamp onto the FedEx Express Clinical Lab Pak envelope.
4. **PLACE** the specimen collection kit box into the FedEx Express Clinical Lab Pak envelope and seal the envelope closed.
5. **CALL** FedEx at 1-800-238-5355 to schedule a pickup, Monday through Thursday only.
6. **WHEN** the FedEx automated operator asks, "*If you know the service you'd like, please say it now,*" say "Rep" or "Representative".
7. **WHEN** the FedEx automated operator connects you to a representative, tell them you have a "Billable Stamp" to return ship. The FedEx representative will then ask you questions to schedule your pickup.

DO NOT SHIP SPECIMEN ON FRIDAY.

Please Note

- Prepaid airbills are for use only in contiguous 48 states.
- If shipping from AK, HI, US territories, or internationally, you must arrange for your own shipping. Ship to:

METAMETRIX CLINICAL LABORATORY

4855 PEACHTREE INDUSTRIAL BLVD., SUITE 201

NORCROSS, GA 30092

- There is a \$15 charge for re-submittal due to an improper specimen.
- All tests must be ordered by healthcare professionals only.
- Please contact your healthcare professional for lab results.

Estronex™

SPECIMEN COLLECTION INSTRUCTIONS

This specimen collection kit can be used for the following tests:

- 0142 ESTRONEX™ 2/16 OH ESTROGEN RATIO - Urine**
- 0145 ESTRONEX™ 2/16 WITH BONE RESORPTION**
(Combined tests 0018 & 0142) - Urine

Please Note: Date of collection must be recorded on either the Test Requisition Form or specimen tube(s) or test cannot be processed.

Specimen

First morning urine, 10 ml, frozen

Collection Materials

- Disposable pipette
- Yellow-cap plastic vial

Shipping Materials

- Orange absorbent pad
- Biohazard bag with side pocket
- Ice pack
- Test Requisition Form
- Specimen collection kit box
- FedEx® Express Clinical Lab Pak envelope and Billable Stamp

Metamatrix
Clinical Laboratory

800.221.4640 • www.metamatrix.com

©2005 Metamatrix, Inc. All rights reserved. 16820 rev 1005

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE BEGINNING.

Patient Preparation

- **COLLECTION** is preferred on days 18-25 after the start of the menstrual cycle. Do not collect urine during menstruation.
- **FOLLOW-UP** testing should be done on corresponding days (from initial collection) of the menstrual cycle.
- **TIMING** is not important for post-menopausal women.
- **TESTING** not recommended during pregnancy.
- **IT IS NOT** necessary to discontinue nutritional supplements or oral hormones prior to this test. Abnormalities that may be found will reveal special needs that have not been met by recent dietary and supplemental intake.

THE EVENING BEFORE:

- **DO NOT EAT** anything for at least 8 hours prior to morning urine collection.
- **DECREASE** liquid intake to avoid excessive dilution of the urine. Drink only enough to quench thirst on the evening prior to the collection.

Urine Collection

1. **WRITE** patient name, date, and time of collection on the yellow-cap plastic vial using a permanent marker. Fill in “date specimen collected” on the Test Requisition form under section #4.
2. **EMPTY** bladder before going to bed at night (do not collect this urine).

3. **COLLECT** your morning urine using a midstream collection method:

- **START** urinating
- **STOP** after a few seconds
- **COLLECT** the remaining urine sample into a clean container (such as a clean cup or jar)

4. **TRANSFER** urine into the yellow-cap plastic vial (to the 10 ml mark or until 3/4 full) using disposable pipette. (You may notice a substance inside the vial, this is a preservative that should remain in the vial. **Do NOT** rinse vial out).
5. **SCREW** cap tightly onto the yellow-cap plastic vial.
6. **DISPOSE** of remaining urine.
7. **FREEZE** the yellow-cap plastic vial and ice pack.

Specimen Preparation for Shipping

1. **PLACE** frozen vial, frozen ice pack, and orange absorbent pad into biohazard bag.
2. **FOLD** completed Test Requisition Form and payment; place in side pocket of biohazard bag.
3. **SEAL** biohazard bag; place into specimen collection kit box and close box.



Metamatrix

3425 Corporate Way
Duluth, GA 30096

Accession Number: **A0910280151**

Reference Number:

Patient: Sample Report

Age: 47 *Sex:* Female

Date of Birth: 02/05/1962

Date Collected: 10/27/09

Date Received: 10/28/09

Report Date: 11/23/09

Telephone: (770) 446-4583

Fax: (770) 441-2237

Reprinted: 12/3/09

Comment:

0142 Estronex™ Estrogen Metabolites - Urine

A new tandem mass spectrometer method is now being used for the Estronex profile. Consequently, there has been a shift in reference range. In addition, new analytes have been added that reflect further estrogen metabolism, including 4-hydroxyestrone and methylated estrones.

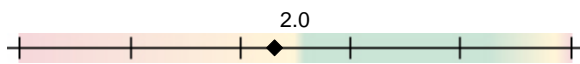

Ordering Physician:

Metamatrix

3425 Corporate Way
 Duluth, GA 30096

0142 Estronex™ Estrogen Metabolites - Urine

Methodology: UPLC/MS/MS, Colorimetric Assay

	Results		95% Reference Limits
2-OHE1:16a-OHE1 Ratio	1.6 L		0.1 - 20.5
2-OHE1:2-MeOE1 Ratio	3.5		<= 9.7

ng/mg creatinine	95% Reference Limits			
	Pre-Menopausal Females	Post-Menopausal Females (no hormone therapy)	Post-Menopausal Females (on hormone therapy)	Males
2-Hydroxyestrone (2-OHE1)	0.6 - 44.2	0.6 - 18.7	0.6 - 121.4	0.6 - 4.8
2-Methoxyestrone (2-MeOE1)	>= 0.41	>= 0.41	>= 0.41	>= 0.41
4-Hydroxyestrone (4-OHE1)	<= 5.7	<= 0.62	<= 10.4	<= 0.62
4-Methoxyestrone (4-MeOE1)	>= 0.66	>= 0.66	>= 0.66	>= 0.66
16a-Hydroxyestrone (16a-OHE1)	0.2 - 20.4	0.2 - 6.2	0.2 - 73.9	0.3 - 2.2

Creatinine = 100 mg/dl

The ideal value for the 2/16 ratio is above 2.0. Such imbalances, particularly a higher 16a-OHE1, may be associated with increased risk of prostate cancer in some men.

The following have been shown to raise the ratio:

- Cruciferous vegetables (e.g., broccoli, brussel sprouts, cabbage, cauliflower).
- Supplementation of indole-3-carbinol (I-3-C) or diindolylmethane (DIM)
- Soy isoflavones*
- Flax seeds (not oil)
- Omega-3-fatty acids (DHA & EPA) found in fish (e.g. mackerel, lake trout, herring, sardines, salmon) and marine algae also may help to lower cancer risk. Assure antioxidant adequacy when adding polyunsaturated oils.

*Soy isoflavones are considered mildly estrogenic and may not be ideally suited for patients with hormone-sensitive cancers.

• 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.