



NutriPATH

TEST PATIENT

Date of Birth : 28-Oct-1968
 Sex : F
 Collected : 13-Aug-2010
 111 TEST ROAD
 TEST SUBURB VIC 3000
 Lab id : **3289665**

Dr TEST DOCTOR

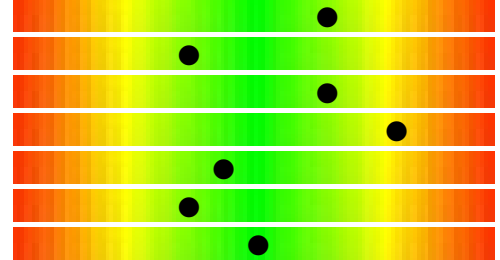
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ENDOCRINOLOGY URINE

URINE, 24 HOUR

24 Hr ESTRONE METABOLITES

	Result	Range	Units
Total Volume	2900	693 - 3741	mL
2-OH E1 (Protective Metabolite)	4.37	2.20 - 10.90	ug/24h
16-OH E1 (Proliferative Metabolite)	1.79	1.50 - 1.90	ug/24h
2/16-OH E1 Ratio (Anti-Prolif'tive Index)	2.44 *H	1.01 - 2.43	RATIO
4-OH E1 (Mutagenic Metabolite)	2.46	2.30 - 2.71	ug/24h
2 Methoxy Estrone	7.59	5.00 - 16.00	ug/24h
4 Methoxy Estrone	1.88	1.00 - 2.80	ug/24h
2(OH)E1/2MethoxyE1 RATIO	0.58		RATIO
4(OH)E1/4MethoxyE1 RATIO	1.31		RATIO



(*) Result outside normal reference range

(H) Result is above upper limit of reference rang



Estrone Metabolites Comments

URINE 2(OH) METABOLITES:

These estrogens have been named "good estrogen" and by some authors are thought to be cancer protective estrogens.

Their role and impact in males has not been adequately researched or published. Most of the research has been done relative to women's breast cancer.

URINE 16a(OH) METABOLITES:

A high level of 16aOHE1 has been associated with an increase risk in breast cancer. 16aOHE1 is the immediate precursor to the weak estrogen, estriol (E3).

Lowering levels of 16aOHE1 have been achieved via indole-3-carbinol or one of its metabolites, diindolmethane (DIM). Soy and flax meal have also been shown to lower 16aOHE1 levels.

Postmenopausal women with high levels of 16aOHE1 may want to forego estradiol and estrone therapy in favour of E3 and progesterone.

A final note, 16aOHE1 is important for maintaining bone mineral density.

URINE E1 METABOLITE RATIO 2(OH):16a(OH)

A ratio of 2-OH Estrone to 16aOH Estrone greater than 2.0 is desirable.

A ratio less than 2.0 may increase the risk of cancer.

Patients with a ratio less than 2.0 may benefit from a modification in diet and lifestyle.

The supplementation of the diet with phytoestrogens may further improve the ratio.

A high protein, low fat diet rich in dietary sources of indole-3-carbinol may also improve the 2/16 ratio. Diindolylmethane (DIM) has also been shown to improve the 2/16 ratio.

URINE 4 (OH)E1 along with 2 (OH)E1 comprises what are called the catechol estrogens. Unlike 2-hydroxyestrone, this estrone has been shown to be a free radical generator and a very powerful estrogen. High levels occur in the urine following severe exercise and may indicate a relative lack of the enzyme, catecholamine methyl transferase. Increases of dietary folic acid may help rectify this situation. This metabolite may eventually be one of the more important metabolites related to increased risk in female cancers.

NOTES:

Protective: 2-OH E2, 2-OH E1, 2-Methoxy E1.

Anti-Proliferative: 2-Methoxy E2.

Carcinogen & Active Estrogen: 16 alpha OH E1, 4-OH E1.

Active Estrogens: E2, E1, E3.

DIM/Indole-3-Carbinol action is to shift estrogen metabolism to increase levels of 2 OH & 2 Methoxy metabolites:

E1 conversion to 2-OH E1 & 2-methoxy E1.

E2 conversion to 2-OH E2 & 2-methoxy E2.

URINE Hydroxy & Methoxy E1

After hydroxylation, both 2-OH and 4-OH can undergo another step called methylation. Methylation turns both of these metabolites into substances that are even more water-soluble. 2-OH becomes 2-methoxyestrone, which may support women's breast health, and 4-OH becomes 4-methoxyestrone, which is a very weak estrogen. Literature indicates that the Methoxy's are apoptotic.

4(OH)E1 along with 2(OH)E1 comprises what are called the catechol estrogens and unlike 2(OH)E1, this estrone has been shown to be a free radical generator and a very powerful estrogen. High levels occur in the urine following severe exercise and may indicate a relative lack of the enzyme, catecholamine methyl transferase. Increases of dietary folic acid may help rectify this situation. This metabolite may eventually be one of the more important metabolites related to increased risk in female cancers.



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