

ESTROGEN ESSENTIAL Dried Urine

The measure of estrogens and its metabolites is designed to assist in the prevention of estrogen and hormone related conditions. Estrogens, predominantly Estrone, Estradiol and Estrone are found in varying quantities with its own unique function. The estrogens are metabolised to its excretory by-products which have their own biological actions; some have the stimulatory properties of estradiol, whilst others are weak and protective estrogen molecules. An imbalance in estrogen metabolism has been associated with osteoporosis, high blood pressure, lupus and cancer (breast, endometrial, prostate, thyroid, head and neck). As the estrogen metabolites are modifiable by lifestyle and nutritional changes, this test is useful for not only establishing risk but monitoring therapies which can reduce the probability of these disorders.

*This test provides a focused overview of estrogens and its metabolites: **Estradiol (E2), Estrone (E1), Estriol (E3), 2OHE2, 2OHE1, 4OHE2, 4OHE1, 16 α OHE1, 2MeOE2, 2MeOE1, 4MeOE2, 4MeOE1.***

The Risks and Benefits of Estrogen

Estrogens are secreted from the ovaries pre-menopausally. They are aromatized from adrenal androgens postmenopausally. Deficient estrogens can stimulate bone resorption, collagen breakdown, cardiovascular dysfunction and menopausal symptoms.

Understanding the metabolism of estrogen is very important since this hormone is known to have benefits and risks associated with it. Estrogen has positive effects on the cardiovascular system, bone, brain, skin as well as reproductive organs. The issues experienced at menopause such as memory loss, osteoporosis and vaginal dryness validates the importance of maintaining optimal estrogen levels. The downside however of having too much estrogen is that it may increase the risk of hormone-related cancers such as endometrial, prostate and breast cancer.

Estrogen Metabolites are Important Molecules

The view that all estrogens are 'bad' and cause cancer however, is a simplistic one. Not all estrogen molecules have the same properties. E2 and E1 are metabolised into at least 14 different species. These breakdown products have their own specific biological actions; some have the stimulatory properties of estradiol (16 α -hydroxyestrone, 4-hydroxyestrone & 4-hydroxyestradiol) whilst others are weak and antagonistic to other estrogen molecules (2-hydroxyestrone, 2-hydroxyestradiol, 2-methoxyestrone, 2-methoxyestradiol, 4-methoxyestrone & 4-methoxyestradiol).

An imbalance of the stimulatory versus weak estrogen metabolites have been observed to be associated with many different health disorders. Whilst high levels of the 16 α -hydroxyestrone stimulatory estrogen raise cancer risk, lower levels are associated with osteoporosis. In contrast, if the weak estrogens are high they protect against cancer but inhibit bone growth. Therefore the estrogen metabolites are not inactive excretion products, but are powerful molecules in their own right and should be monitored.

CONDITIONS ASSOCIATED WITH LOW / HIGH ESTROGEN METABOLITE RATIO	
LOW 2OH:16OH	HIGH 2OH:16OH
Breast cancer	Osteoporosis
Endometrial cancers	
Hypertension	
Prostate cancer	
Autoimmune conditions eg. Lupus, RA	

Urinary Hormone Testing

Urine testing has the benefit over serum testing that it detects predominantly unbound, active hormones, which are biologically available to their receptors in target tissues. It has a convenient, painless collection procedure that can be performed in the privacy of the home. Urine testing is a stress free, no needles collection that measures metabolic breakdown of hormones. This comprehensive test identifies androgens, female hormones, adrenal hormones and thyroid hormones.

ADVANTAGES OF URINARY HORMONE TESTING
Measures the free, bioavailable fraction of hormones
Measures metabolites of hormones providing a detailed metabolism of hormones
Do-it-yourself at home collection offers ease of collection for patient
Dried urine test strips correlates with spot or 24 hour urine collection
Dried urine test strips can assess diurnal patterns

ESTROGEN ESSENTIAL DRIED URINE [Test code: 1506]

- ❖ Estradiol, Estrone, Estriol, 2OHE2, 2OHE1, 4OHE2, 4OHE1, 16 α OHE1, 2MeOE2, 2MeOE1, 4MeOE2, 4MeOE1.

Other estrogen metabolite tests available

- **Advanced Hormones Dried Urine [1501]:** Estradiol, Estrone, Estriol, 2OHE2, 2OHE1, 4OHE2, 4OHE1, 16 α OHE1, 2MeOE2, 2MeOE1, 4MeOE2, 4MeOE1; Pregnanediol, Allopregnanolone, Allopregnanediol, 3 α -Dihydroprogesterone, 20 α -Dihydroprogesterone, Dexocorticosterone, Corticosterone; Testosterone, Epi-Testosterone, 5 α -DHT, Androstenedione, DHEA, 5 α ,3 α -Androstanediol; Total Cortisol, Free Cortisol (x4), Total Cortisone, Free Cortisone (x4), Tetrahydrocortisol, Tetrahydrocortisone; Melatonin (x4)
- **Intermediate Hormones Dried Urine [1502]:** Estradiol, Estrone, Estriol, 2OHE1, 4OHE2, 4OHE1, 16 α OH E1, 2MeOE1, 4MeOE2; Pregnanediol, Allopregnanolone; Testosterone, Epi-Testosterone, 5 α -DHT, Androstenedione, DHEA; Total Cortisol, Free Cortisol (x4), Total Cortisone, Free Cortisone (x4), Tetrahydrocortisol, Tetrahydrocortisone; Melatonin
- **Estrogen Elite Dried Urine [1505]:** Estradiol, Estrone, Estriol, 2OHE2, 2OHE1, 4OHE2, 4OHE1, 16 α OHE1, 2MeOE2, 2MeOE1, 4MeOE2, 4MeOE1; Pregnanediol, Allopregnanolone; Testosterone, 5 α -DHT, Androstenedione, DHEA, 5 α ,3 α -Androstanediol
- **Estrogen Metabolites - Level 1 (spot or 24 hour urine):** 2OHE1, 16 α OHE1, 2:16 ratio
- **Estrogen Metabolites - Level 2 (spot or 24 hour urine):** 2OHE1, 16 α OHE1, 2:16 ratio; 4OHE1
- **Estrogen Metabolites - Level 3 (24 hour urine) [1209]:** 2OHE1, 16 α OHE1, 2:16 ratio, 4OHE1; 2OMeE1, 4MeOE1, 2OHE1:2OMeE1, 4OHE1:4OMeE1 ratios
- **Estrogens Profile (spot or 24 hour urine):** E1, E2, E3, 2OHE1, 16 α OHE1, 2:16 ratio; 4OHE1
- **Female Hormone Profile - Extensive (24 hour urine) [1213]:** T4, T3, T4/T3 ratios, Cortisol, DHEA, Testosterone, Progesterone, E1, E2, E3; 17-ketosteroids, Total OH corticoids, ratios, Allo-tetrahydrocortisol, Tetrahydrocortisol, Tetrahydrocortisone, Tetrahydrodeoxycortisol, Aldosterone, Androsterone, Etiocholanolone, 11OH-androsterone, 11OH-etiocholanolone, 11-ketoetiocholanone, 11-ketoandrosterone, Pregnanetriol (Pregnenolone), DHT, 2OHE1, 16 α OHE1, 2:16 ratio, 4OHE1, Melatonin, Growth hormone, Na, Ca, P, K, Mg, Cr

How to order a test kit:

To order a test kit simply request the test name and/or test code on a NutriPATH request form test code and have the patient phone NutriPATH Customer Service on 1300 688 522.



Phone 1300 688 522 for further details
www.nutripath.com.au

