

Patient Details

Ms Sample Report
Parkgate House
356 West Barnes Lane
New Malden
Surrey
KT3 6NB

Client ID No: IWX500220

Accession No:

Patients DOB: 02/03/1965

Sample Date: 12/05/2008

Date Of Report: 12/05/2008

Practitioner Details

Genova Diagnostics (Europe)
Parkgate House
356 West Barnes Lane
New Malden
Surrey
KT3 6NB

Progesterone : Phase No Cycle

	Low	Typical	Elevated	
Luteal Phase : Unsupplemented Reference Range:	65.0 <100			pg/mL
Post Menopause : Unsupplemented Reference Range:		65.0 20 - 70		pg/mL
Oral : Supplemented Reference Range:	65.0 <100			pg/mL
Cream / Gel : Supplemented Reference Range:	65.0 <500			pg/mL

Oestradiol : Phase No Cycle

	Low	Typical	Elevated	
Luteal Phase : Unsupplemented Reference Range:	3.5 <4.0			pg/mL
Post Menopause : Unsupplemented Reference Range:		3.5 1.0 - 4.0		pg/mL
Oral / Patch : Supplemented Reference Range:	3.5 <5.0			pg/mL
Cream / Gel : Supplemented Reference Range:	3.5 <10.0			pg/mL

Progesterone / Oestrogen Balance

	Low	Typical	Elevated	
Ratio : Progesterone / Oestradiol Reference Range:		18.6 10.0 - 100		Ratio

Current Hormone Therapies: None

* Supplemented ranges represent hormone levels 10 hours after last dose.

Commentary

Progesterone levels are consistent with those typically seen post menopause.

Oestradiol level consistent with that typically seen post menopause.

The Progesterone to Oestradiol ratio (P/O) is within normal limits.



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Testosterone (Female)

Analyte	Result	Normal Range	Units
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Results & Ranges

Analyte	Result	Reference Range (pg/mL)
Testosterone (Female)	30.5	20 - 70

Commentary



Estrogen Metabolism Assessment (Urine)

Menopausal

Patient: **Sample Report**

Order Number: **A0040420**

Genova Diagnostics

Completed: April 14, 2008

Received: April 04, 2008

Collected: March 29, 2008

Route Number: A085015

DOB: May 03, 1954

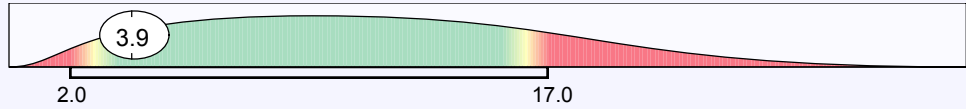
Sex: F

MRN: 0001166651

Estrogen Metabolism

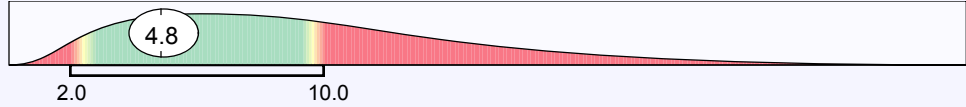
2-Hydroxyestrogen (2-OHE)

Ref Range
ng/mg creat



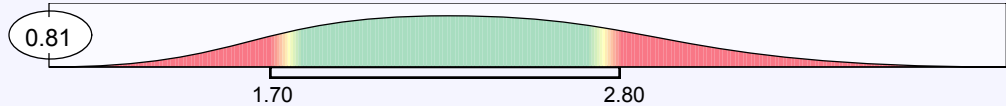
16-alpha-Hydroxyestrone (16-alpha-OHE1)

Ref Range
ng/mg creat



2-OHE:16-alpha-OHE1 Ratio

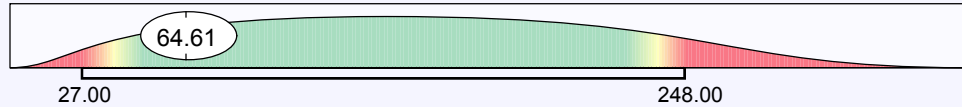
Ref Range



Creatinine

Creatinine

Ref Range
mg/dL



Reference Range Information

Reference ranges for 2-Hydroxyestrogen and 16alpha-Hydroxyestrone were determined with urine samples from menopausal women who were not using hormone-replacement therapy. The reference range for the 2-OHE: 16-alpha-OHE1 ratio was derived from the literature. The reference range for creatinine was derived from a population of pre- and post-menopausal women.

Reference Intervals for Menopausal Women

Analyte	Reproductive Range (Luteal)	Unsupplemented Menopausal Range	Patient Result
2-Hydroxyestrogen	3.0 - 33.0	2.0 - 17.0	3.9
16-alpha-hydroxyestrone	4.0 - 24.0	2.0 - 10.0	4.8

Commentary

Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

Estrogen Metabolism

Estrogen metabolism is an important measure of hormonal balance. While literature refers to the involvement of hydroxyestrogens in a number of conditions, levels shown in this test are not diagnostic of any specific medical condition. High or low levels of the hydroxyestrogens, or an elevated or depressed ratio should be evaluated in relation to the patient's total history, physical, and clinical presentation.

2-hydroxyestrogen (2-OHE) levels are within the reference range. These urinary metabolites of estrogen (about 80% from estrone, and 20% from estradiol and estriol) appear to represent a beneficial direction in estrogen metabolism. Normal levels of 2-OHE imply a balanced metabolism and a decreased likelihood of breast cancer, cervical dysplasia and osteopenia. Urine levels of 2-OHE are responsive to dietary changes and other factors that modify estrogen metabolism, including a high-fiber diet, exercise, and reasonable intake of cruciferous vegetables, soy products, and omega-3 oils, with limited intake of saturated fat. Changes in 2-OHE may be particularly important for women to monitor as their hormone status changes due to contraceptives, estrogen replacement therapies, diet, or exercise regimen.

16alpha-hydroxyestrone (16alpha-OHE1) is within the reference range. Normal or low levels are generally viewed as a beneficial finding since high levels of this metabolite of estrone may be linked to conditions such as lupus, breast cancer, and obesity. Exercise and dietary intake of cruciferous vegetables, soy, and fish oil (EPA) all appear to be of potential benefit increasing levels of 2-OHE and thereby keeping the levels of 16alpha-OHE1 normal or low.

The **2-OHE: 16alpha-OHE1 ratio** appears from the literature to be a useful gauge of estrogen metabolism. A low ratio may be associated with increased likelihood of estrogen-dependent diseases such as breast cancer and lupus. Ratios of greater than 2.0 are generally thought to reflect healthy estrogen metabolism. There are numerous modifiers of this ratio, which primarily function to alter the levels of 2-OHE. These include intake of indole-3-carbinols from cruciferous vegetables, flaxseed, soy, omega-3 fatty acids, and exercise. It is to be emphasized that some individuals appear to have a paradoxical response to treatments that typically would raise the 2-OHE; therefore, follow-up testing is strongly suggested.

On the other hand, an elevated 2-OHE: 16alpha-OHE1 ratio may be associated with an increased likelihood of osteopenia. Attention to bone loss processes in the urine is perhaps warranted in individuals with a very high 2-OHE: 16alpha-OHE1 ratio.

Urine creatinine concentration is within the reference range. Under certain conditions such as dehydration, excessive fluid intake, diuretic use, or abnormal metabolic states, the "spot" urine creatinine value from this sample may not be representative of average renal flow.



Bone Resorption Assessment



Patient: **SAMPLE**
REPORT
DOB: June 10, 1965
Sex: F

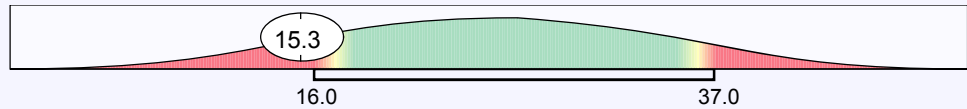
Order Number: 93081234
Completed: September 10, 2007
Received: September 08, 2007
Collected: September 05, 2007
Route Number: A071234

Genova Diagnostics
Parkgate House
356 West Barnes Lane
New Malden, Surrey
KT3 6NB

Chemistry Parameters

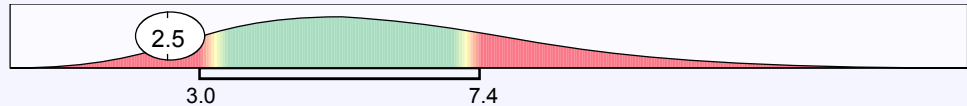
Pyridinium Crosslinks/Creatinine

Ref Range
nmol/mmol



Deoxypyridinoline/Creatinine

Ref Range
nmol/mmol



Commentary

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Pyridinium crosslinks consist of both pyridinoline and deoxypyridinoline. Deoxypyridinoline is found predominantly in bone tissue, whereas pyridinoline is found in both bone and cartilage. Pyridinium crosslinks are released when bone is broken down (or resorbed). While not diagnostic of osteoporosis, these markers may be used to monitor bone resorption status and therefore are a useful gauge of treatment efficacy.

Pyridinium Crosslinks are low, suggesting an unusually slow rate of collagen turnover, including bone and connective tissue. The remodeling process allows for repair. Although some animal research suggests compromised bone quality with excessive suppression of resorption, there is currently no established clinical significance on reduced rates of bone turnover in humans.

Low levels of pyridinium crosslinks have been reported in fibromyalgia, severe burns, and acute lymphoblastic leukemia in children.

Deoxypyridinoline (DPD) is low, suggesting an unusually slow rate of bone turnover. Bone remodeling is a natural process of resorption and formation that allows for repair. Although some animal studies have demonstrated accumulation of microdamage and impaired bone quality with excessive amounts of bone-suppressive medication, there is currently no established clinical significance on reduced rates of bone turnover in humans. There may be extraordinary cases of growth hormone deficiency, which could lead to a very low deoxypyridinoline.