Menopause

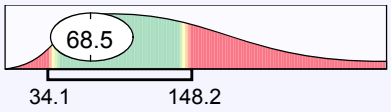
63 Zillicoa Street
Asheville, NC 28801

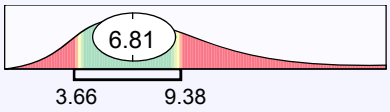
Patient: **SAMPLE PATIENT**
Age: 40
Sex: F
MRN:

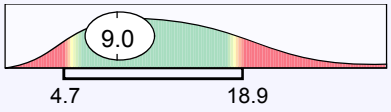
Order Number:
Completed: January 11, 2006
Received: January 11, 2006
Collected: January 11, 2006

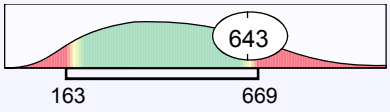
Salivary Hormone Results

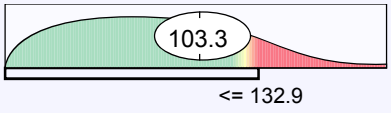
Sample #	Estrone (E1) (pmol/L)	Estradiol (E2) (pmol/L)	Estriol (E3) (pmol/L)	Progesterone (pmol/L)
1	8.6	6.30	112.0	722
2	12.2	4.80	109.0	588
3	6.1	9.32	89.0	618
Reference Range	4.7-18.9	3.66-9.38	<=132.9	163-669

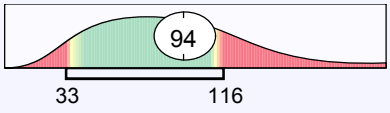
Testosterone
Ref Range pmol/L


Average Estradiol
Ref Range pmol/L


Average Estrone
Ref Range pmol/L


Average Progesterone
Ref Range pmol/L


Average Estriol
Ref Range pmol/L


P/E2 Ratio
Ref Range Ratio


Histograms on this report are not based on data from reference populations and should be used for illustrative purposes only.

This test has been developed and its performance characteristics determined by GSDL, Inc. It has not been cleared or approved by the U.S. Food and Drug Administration.

Commentary

Introduction

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.

Commentary

This profile measures the levels of progesterone, testosterone, and the three forms of estrogen in your body, estradiol, estrone, and estriol. All of these measurements reflect the amount of hormone directly available to the body, that is the fraction of hormone not bound to binding globulin.

Estrogen, in general, is vital for healthy reproductive and menstrual cycle function. It is also responsible for maintaining secondary sexual characteristics, is required for endometrial (uterine) gland development, and the production of cervical and vaginal mucus. In addition, estrogen positively influences cardiovascular health, bone density, brain function and mood, and libido. Estrogen also reduces bowel motility and stimulates the synthesis of many enzymes in the body. Because of estrogen's stimulatory effect upon the endometrium, levels should be balanced by progesterone.

Estradiol is the most potent estrogen, with a potency 12 times that of estrone and 80 times that of estriol. The bulk of estradiol pre-menopausally derives from the ovary, so it is the predominant estrogen during the pre-menopausal years. Although it remains the most potent estrogen among the three, its levels typically decline in menopause, as ovarian function declines.

Estrone becomes the primary estrogen as the ovary loses its ovulatory function in menopause. Most of estrone's biosynthesis is dependent upon the production of androstenedione (an androgen) in the adrenal glands and the conversion of androstenedione to estrone (aromatization) in various peripheral tissues, particularly adipose, or fat tissue.

Estriol is the least potent estrogen in the body, and is considered to be a mild and brief-acting hormone. Estriol is thought to primarily originate from estrone, via 16-alpha-hydroxyestrone, although some estriol may come directly from androstenedione. Estriol has a much lower affinity for sex-hormone binding globulin (SHBG), so a greater percent is typically available for biological activity. It is thought that estriol may protect against estrogen-associated cancers, although further research is needed to confirm this.

Progesterone is also important for normal reproductive and menstrual function, and influences the health of bone, blood vessels, heart, brain, skin, and many other tissues and organs. As a precursor, progesterone is used by the body to make other steroid hormones, including DHEA, cortisol, estrogen, and testosterone. In addition, progesterone plays an important role in mood, blood sugar balance, libido, and thyroid function, as well as adrenal gland health.

Testosterone is an important hormone for women, helping to maintain lean body mass, bone density, skin elasticity, blood cell production, and libido.

All three forms of estrogen, progesterone and testosterone must be in proper balance with each other for optimal health.

Laboratory Results

The averages for estradiol and estrone are both within the reference range, suggesting ample estrogen protection in the body. Any individual estradiol or estrone measurement above or below the reference range is still considered clinically significant.

The average estriol is within the reference range. *In-vitro* studies have demonstrated estriol's ability to compete with estradiol in terms of receptor binding, suggesting some antagonistic estrogen activity. At the same time, estriol administration has demonstrated an estrogenic effect when given by itself. Thus, estriol's estrogenic influence in this case should probably be evaluated in light of the levels of estradiol and estrone. Positive reports regarding estriol's influence on bone and the cardiovascular system are mixed, as well as studies focusing on possible cancer-preventive properties, although observations have suggested higher estriol levels in association with lower incidence of breast cancer. Estriol is metabolized irreversibly from estradiol as well as from estrone via 16 alpha-hydroxyestrone.

Commentary

The average for progesterone is within the reference range, suggesting ample progesterone protection in the body. Any individual progesterone measurement above or below the reference range is still considered clinically significant.

Testosterone is within the reference range.