

Expanded Premenopause Hormone Profile: BHD #208

Overview

This test is used for mapping female cycles longer than 24 days or for data collection. This test uses 17 saliva samples to measure the rhythm of progesterone and one of the estrogens [namely, estradiol (E2)] over a complete menstrual cycle. The results provide a mapping of the menstrual cycle to aid in the evaluation of metabolic imbalances associated with sex hormones.

Physiology

The menstrual cycle involves the functional and structural uterine changes necessary for the development and fertilization of an ovum. The cycle is lunar in length, with 28 days usually listed as normal. Progesterone and estrogen act as leaders in the cycle, and the levels of other hormones--notably, the luteinizing and follicle-stimulating hormones--fluctuate in response to the changing levels of the first two.

Both the physiology and morphology of the associated tissues normally fluctuate in a correspondingly predictable pattern within the cycle. The rhythm of each hormone has established norms, and the divergence of any hormone from these values can result in a cascade of compensations involving several other hormones. The effects of such a divergence from normal values can result in adverse changes in the physiology and morphology of target tissues, in other hormone systems not considered part of the menstrual cycle, and in behavior.

Cholesterol forms pregnenolone in the adrenal glands. Pregnenolone then metabolizes into progesterone and DHEA. DHEA readily forms a sulfated metabolite, DHEA-S, which is the species usually measured because of its increased stability. Progesterone also forms cortisol, while DHEA forms testosterone and the three estrogens--estrone (E1), estradiol (E2), and estriol (E3). The progesterone-cortisol pathway acts as a metabolic balance for the DHEA-estrogen/testosterone pathway.

All these hormones are either adrenal products or metabolites of adrenal products, giving them a close functional relationship to one another. If the metabolic supply of pregnenolone is adequate, the cycle can nevertheless become disordered when just a single pregnenolone metabolite remains outside its normal range. Because of its prominent and ubiquitous use in tissue cells, cortisol (a direct progesterone metabolite) is often at the heart of menstrual hormone metabolism.

Balancing the menstrual hormones is important not only to normalize menstruation, but also to control many other physiological systems with anatomic and behavioral sequelae. Sites and processes seemingly distant and unrelated to menstrual function are involved. A very short list of factors strongly influenced by menstrual hormones includes maintaining the endometrium; promoting embryo and fetus survival; influencing the onset of breast, endometrial, and ovarian cancer; bone production; glycemia; cellular oxidation; blood clotting; psychological depression; phagocyte activity; serum cholesterol; and muscle mass.

Clinical Use

The task in reordering a disordered menstrual cycle lies not simply in restoring the levels of hormone output but in normalizing the timing and distribution of those levels as well. Notably,

adrenal function helps to rebalance progesterone with the DHEA-estrogen/testosterone pathway, which promotes menstrual cycle normalization.

Another intervention that is relatively mild yet highly effective is the measured administration of low doses of the immediate cortisol precursor, progesterone. Altering the daily dose of readily absorbable progesterone over the course of a cycle can result in the normalizing of estrogen levels, with subsequent normalization of the other menstrual hormones as well. Appropriate hormone levels generally lead to the normalization of menstrual physiology, anatomy, and behavior. This test maps the menstrual cycle to provide a basis for and to monitor hormone therapy.

Conditions Assessed

Conditions that may be assessed include suspected hormone imbalance, menstrual dysfunction, and possible causes of associated physiological, morphological, and psychological upset. Sequelae include emotional fragility, mood swings, anxiety, panic attacks, premenstrual syndrome (PMS), hot flashes, night sweats, bloating, excessive weight gain or loss, excessively high or low energy, chronic digestive upset, migraine headaches, repeated miscarriage, and infertility.