



Newsletter

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Hormone Factors in Fertility

Fertility is an issue that occupies the attention of most women for a good portion of their lives. Whether a woman is trying NOT to get pregnant or trying TO get pregnant, an understanding of the menstrual cycle and the hormones involved is key.

The menstrual cycle is essentially divided into two halves; the follicular phase occurs from day 1 (the first day of bleeding) until ovulation, and the luteal phase occurs from ovulation until bleeding begins again. Each month follicle stimulating hormone (FSH) is produced by the pituitary gland and under its influence, a number of egg-containing follicles start to mature in the ovary. Each follicle produces estrogen (primarily estradiol). When estrogen levels reach a threshold, it triggers a surge of luteinizing hormone (LH) which causes the egg to be released from the ovary (ovulation). During the second half of the menstrual cycle, (once ovulation has occurred), the follicle morphs into the corpus luteum and begins to produce progesterone which has a number of effects including preventing the release of other eggs and causing the maturation and sustenance of the thickened endometrial lining to better support implantation of a fertilized egg. Progesterone also causes the cervix to open and change position and the cervical fluid to change to better nourish the sperm and facilitate their safe travel to the egg.

Unfortunately, nearly 11% of women ages 15-44 have an impaired ability to achieve pregnancy and/or carry a baby to term. Infertility can be caused by variety of factors including hormone dysregulation and anovulation, mechanical obstruction of the fallopian tubes, scarring or the presence of abnormal tissue in the uterus affecting implantation, alterations in the quality of the egg that may affect the permeability to sperm or other defects that prevent fertilization, and a failure of the corpus luteum to produce adequate progesterone to sustain an implanted egg. Some of the most common hormonal pictures that relate to fertility include PCOS, luteal phase failure and conditions associated with estrogen dominance:

- **PCOS** Elevated androgens (DHEA and/or testosterone) can cause suppression of LH and therefore result in anovulation. Women with this hormone picture typically have very low progesterone levels and elevated androgens. In addition, blood sugar regulation issues are often present.
- **Luteal phase failure** Low or low range progesterone levels are often indicative of luteal phase failure, which is the inability of the corpus luteum to produce ample amounts of progesterone. Underproduction of progesterone has been associated with stress, excessive exercise and

malnutrition, as well as thyroid and other hormone imbalances. Because the corpus luteum is the primary source of progesterone during early pregnancy (until the placenta takes over near the beginning of the second trimester) luteal phase failure is a common cause of early termination of pregnancy or miscarriage. Additionally, low progesterone levels may contribute to a difficulty achieving pregnancy, since progesterone plays an important role in opening the cervix and affecting the cervical fluid.

- **Estrogen dominance** This is a general term for an underlying hormonal imbalance where the influence of estrogen is greater than the balancing effects of progesterone, and typically results in growth and proliferation of tissue. This is often a part of the picture with conditions such as endometriosis and uterine fibroids, both of which make pregnancy more difficult due to interference with proper implantation of an embryo and, in some cases, contribute to obstruction and scarring in the fallopian tubes.

While a thorough medical workup of both partners to determine etiology of fertility issues is often required, salivary hormone analysis is an easy, non-invasive look at hormone levels that can reveal invaluable fertility information. In many cases, identification and correction of hormone imbalances is sufficient to aide in the achievement and maintenance of a successful pregnancy.

Important Update

The Labrix Advanced Workshop dates have been changed. The new dates are January 25-26, 2014 in Las Vegas, NV. For more information click here: www.labrix.com/law.

Resources

1. Livingstone C, Collison M. Sex steroids and insulin resistance. Clin Sci (Lond). 2002; 102: 151-66.
2. Practice committee of the American Society for Reproductive Medicine. The clinical relevance of luteal phase deficiency: a committee opinion. Fertil Steril. 2012 Nov;98(5): 1112-7.
3. CDC /National Center for Health Statistics
4. Speroff L. Clinical Gynecologic Endocrinology and Infertility. Philadelphia, PA: Lippincott Williams & Wilkins; 2005.
5. Weschler T. Taking Charge of Your Fertility. New York, NY: HarperCollins; 2002.

Upcoming events

Labrix Advanced Workshop
January 25-26, 2014
[Register Here](#)