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The Stages of a Woman's Life: Menstruation, Pregnancy, Nursing, Perimenopause, Menopause

In this article, the various hormonal stages in a woman's life will be discussed. Understanding these stages can help in identifying hormonal times of susceptibility for migraine headaches that will be discussed by other authors in this newsletter.

Menstruation: The menstrual cycle can be divided into 2 phases, the follicular phase and the luteal phase. The first day of bleeding (menses) is Day 1 of the follicular phase. During this phase, there is a steady increase in estrogen caused by FSH stimulation of the ovaries. FSH comes from the pituitary gland and stands for "follicle-stimulating hormone". Follicles mature into eggs. This whole process is preparing a woman for possible pregnancy. After about 12-14 days the production of estrogen reaches a critical peak, signaling the onset of ovulation.

At ovulation, the pituitary gland releases LH (luteinizing hormone) which stimulates the release of the egg; ovulation has now occurred. LH causes progesterone production. Following ovulation, estrogen and even greater amounts of progesterone are produced in preparation for fertilization. Progesterone becomes the dominant hormone in this 2nd half of menstrual cycle, known as the luteal phase. If no fertilization occurs, estrogen and progesterone levels plunge and menses occurs. The whole process has begun again. The typical cycle lasts 28 days although can vary from woman to woman.

Pregnancy: In pregnancy, estrogen and progesterone levels remain high after fertilization to create and maintain the extra lining of the uterus to protect the developing egg. In fact, estrogen levels steadily rise during the 1st trimester (1st 3 months of pregnancy). By the 2nd trimester there is more of a steady-state level of the high estrogen, which is maintained throughout the rest of the pregnancy until delivery. At delivery, both estrogen and progesterone levels plunge.

Nursing: Nursing women usually have low levels of estrogen and progesterone. Both levels plunged at delivery. There is a slow return to ovulation. Therefore, low and fluctuating levels of hormones are characteristic of nursing women.

Perimenopausal: During this stage, typically ages 45-52, hormonal levels of both estrogen and progesterone vary greatly. The menstrual cycle can be shorter or longer than the typical 28-day cycle. Ovulation and menstruation are not predictable. This time in a woman's life is often referred to as "the change before the change" and unpredictability is the hallmark. Hormonal blood levels are often

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difficult to interpret as the levels fluctuate greatly. Many women experience hot flashes, night sweats, insomnia, mood swings and exacerbation of headaches during this time of hormonal change.

Menopause: Typically defined as no menses for 1 year or FSH level >30 (depending on lab used), menopause is a time when the ovaries are no longer producing any substantial amount of estrogen or progesterone. Therefore, no menstruation occurs. It can be a sudden transition into menopause with surgery (complete hysterectomy with removal of ovaries) or a gradual process as a woman's ovaries slowly decline in production of estrogen and progesterone. The typical age of menopause is 51-55. Some women ease into this process easily; others are highly symptomatic and then must decide whether to go on HRT (hormone-replacing therapy).

Understanding a woman's hormonal issues at each stage in her life can help both the patient and health care provider as headache diaries are reviewed. Hormonal changes are often vulnerable times of headache exacerbation.

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