Research has long shown that fluctuating levels of estradiol, progesterone, and testosterone play a key role in shaping the course of a woman’s menstrual cycle, as well as mood, sleep patterns, appetite, and sexual drive. Chronic imbalances of these hormones are implicated in disorders such as PMS, anovulation, infertility, amenorrhea, endometriosis, and polycystic ovary disease, osteoporosis and breast cancer.

Laboratory evaluation of hormone imbalances typically involves a single serum measurement of sex hormones. While this approach may reveal a glaring deficiency or excess, it has the clear disadvantage of demonstrating hormone levels at only one point in time. In contrast, Great Smokies’ Female Hormone Profile analyzes 11 saliva samples over a full 28-day period for levels of estradiol and progesterone. Testosterone is measured from the 28th day specimen. Levels of estradiol and progesterone, as well as the ratio between the two, are plotted on a graph, enabling the practitioner to observe levels throughout the month, as well as the relationship between the two hormones. Reference ranges are strictly based on women not using hormone supplements or oral contraceptives. Imbalances such as unopposed estrogen, high follicular progesterone, anovulation, and luteal phase defects are easily identified, providing clues about contributing factors to irregular cycles, infertility, PMS, and other chronic gynecologic disorders.

Salivary hormone analysis offers another distinct advantage. Unlike total serum measurements that typically reflect both bound and unbound fractions of hormones, salivary samples represent the free (unbound), bioavailable fraction of hormone. Because various factors such as obesity and thyroid function influence levels of sex-hormone binding globulin, salivary analysis may identify a functional deficiency or excess not apparent in a plasma measurement. Several research studies have demonstrated the reliability of saliva testing for the evaluation of steroid hormones.

The Female Hormone Profile is indicated for both premenopausal and perimenopausal women who are not currently supplementing with hormones. Perimenopause often spans a period of a year or more, during which time ovulatory cycles may be sporadic and hormone levels may fluctuate significantly before finally declining. An analysis of estrogen and progesterone over a 28-day period can reveal ovulatory function and trends in hormone production. The comprehensive version of the Female Hormone Profile includes a circadian analysis of cortisol and melatonin, and an assay of DHEA, providing valuable information about the interrelationships between the various hormones.
This test reveals important information about:

- **Bioavailable estradiol, progesterone, and testosterone**, imbalances of which are linked to reproductive disorders and menstrual cycle irregularities, as well as osteoporosis, cardiovascular disease, and cancers of the breast and endometrium.

- **Hormone balance through the complete menstrual cycle** with evaluation of eleven easily gathered saliva samples over 28 days.

- **Levels of cortisol, DHEA, and melatonin** (in the comprehensive version) for information relevant to the interrelationship of these hormones with female hormones.