

## **Hormones of Relativity: The Pg/E2 ratio and Estrogen Dominance**

"Susan," a slightly overweight, postmenopausal woman in her early 60's, presents to your office with daily hot flashes, gradual onset of insomnia, foggy thinking and mood swings. During the interview, she breaks down in tears with the desire to enjoy the life she has cultivated and complains of not feeling like herself. When reviewing her medications, it's brought to your attention that Susan has been on unopposed estrogen at increasing doses for the last 12 years after undergoing a complete hysterectomy.

"Jennifer" is a pleasant woman in her early 30's who initially presents to your office after experiencing difficulty conceiving over the past year. Further discussion reveals Jennifer has irregular periods, premenstrual bloating and irritability, and breast tenderness. She is not taking any medications or supplements.

Though very different clinical scenarios, saliva testing reveals both patients are experiencing the same hormone imbalance - estrogen dominance.

Estrogen dominance is a term coined by the late John Lee, M.D. and refers to a relative deficiency of progesterone levels in relation to estrogen levels. Symptomatically, estrogen dominance may manifest as irregular periods, water retention, breast tenderness, forgetfulness, foggy thinking, mood swings and depressed mood. Without progesterone supplementation women will likely experience estrogen dominance at some point in their lifetime, the extent of which will vary based on genetics, nutrition, emotional stressors and exposure to environmental toxins.

Beginning in her mid-30's, a woman's ovarian function begins to decline causing decreased levels of estrogen and progesterone. Even while women are still menstruating relatively regularly, anovulatory cycles become more common with age and without ovulation, there is no corpus luteum and therefore very little progesterone produced. As a woman reaches menopause and ovulation ceases completely, the production of progesterone will typically have decreased by over 90%. Estrogen however, continues to be produced in the peripheral adipose tissue from the conversion of testosterone resulting in estrogen dominance. Unopposed estrogen therapy, as in Susan's story, perpetuates this picture and exacerbates the symptoms of estrogen dominance. In younger women, like Jennifer, estrogen dominance is likely a result of a luteal phase defect or an anovulatory cycle. Xenoestrogens in the environment also compound the problem as they add to the overall estrogenic influence on tissue, an effect noted clinically, though these compounds are not tested by the hormone assay as they differ molecularly.

When testing your patients' salivary hormone levels, estrogen dominance is illustrated by a low Pg/E2 ratio. Monitoring the Pg/E2 ratio yearly to confirm it is in the optimal range will not only address your patients' symptom concerns but also help decrease her risk of estrogen dependent cancer, osteoporosis, cardiovascular disease and Alzheimer's disease.

## References

1. Mead, M.D. and Lommen, N.D.; *Slim Sane & Sexy*
2. Lee, M.D.; *What Your Doctor May Not Tell You About Premenopause*