

by Dalal Akoury, MD

When you think of hormones do you think estrogen, progesterone and testosterone? The real story is much more complex. Health and balance—when hormones are functioning perfectly—involve many other lesser-known hormones and/or neurotransmitters. The human body is affected by a delicate, harmonious dance between sex hormones, neurotransmitters, thyroid and adrenal hormones. And these players are involved in almost every biological process: immune function, reproduction, growth, even controlling other hormones. They can work at astonishingly small concentrations—in parts per billion or trillion. Now, imagine chemicals in the environment that can interfere with this delicate process, chemicals called endocrine disruptors and neurotoxins.

Endocrine disruptors and neurotoxins are everywhere in the environment—a byproduct of chemical manufacturing, petrochemical use and combustion. Levels of neurotoxins have even been measured in blood, human breast milk and the tissue of unborn fetuses, demonstrating how pervasive many environmental toxins have become. Endocrine disruptors and neurotoxins can both interfere with and mimic hormones, causing havoc and disease in our bodies.

What Are Hormones?

Hormones are chemicals released from glands that travel via the bloodstream to specific target organs, which in turn respond to the presence of the hormones. Next to the nervous and immune systems, this is one of the human body's largest and most intricate communication networks. Each hormone molecule released by a gland that travels through the blood until reaching a cell, functions much like a highly specialized key to a lock that fits only certain target receptor cells (see figure 1). This process acts to turn on or off the genes for special functions. Height, weight, growth, maturation, adaptation to stress, sexual response, reproduction and aging are determined by this brilliant “lock and key” system (see figure 2).

Types of Hormones

There are two types of hormones, steroids and peptides. Steroids, which are sex hormones related to sexual maturation and fertility, are made from fatty material

called cholesterol by our adrenal gland or our testes or ovaries. Cortisol, a steroid hormone, breaks down damaged tissue so it can be replaced. Steroids determine physical development from puberty to old age, as well as fertility cycles. Peptide hormones, such as insulin and human growth hormone, regulate other functions such as sleep, neurotransmitters and sugar concentration. They are made from long strings of amino acids, so are sometimes referred to as “protein” hormones.

Women's Sex Hormones

The estrogen family of hormones directs uterus, ovary and womb lining cells to grow and multiply to keep them strong, healthy and well functioning, but also carry messages to almost every cell in the body, including bone cells and brain cells, affecting mood and cognition. Estradiol, the strongest human-made estrogen, is responsible for most of the estrogen function.

Some members of the estrogen family not produced by the body include the beneficial phytoestrogens, which are derived from plant sources and can protect the body from some of the harmful effects of stronger estrogens; and xenoestrogens, estrogen-like neurotoxins that are powerful and dangerous. These cancer-producing, estrogen-mimicking chemicals are common byproducts of potent pesticides, organic solvents, cleaners and other pollutants.

Then there is the once commonly prescribed pharmaceutical estrogen-like substance Premarin, made from

pregnant mares' urine (PREgnant MAREs' urINe) containing a family of horse estrogens that have not yet been completely identified. Premarin was studied in the notorious 15-year-long Women's Health Initiative that addressed the most common causes of death, disability and poor quality of life in postmenopausal

women: cardiovascular disease, cancer and osteoporosis. Premarin use was associated with increased risk for heart

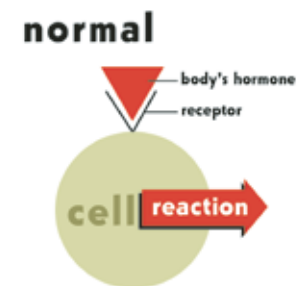


figure 1

attack, stroke and blood clots.

Estrogens naturally produced by the body include estriol, which is the weakest estrogen. Like phytoestrogen, estriol protects women from developing breast cancer by blocking the estrogen receptors in the cells, which in turn makes the estrogen receptors unavailable for the stronger or more dangerous estrogens that increase the risk of cancer.

Estrone, a moderately strong estrogen, is usually made in a woman's body as a byproduct of testosterone. The level of estrone is higher in obese women, and is associated with increased risk of breast cancer in women.

Symptoms of high levels of estrogen are numerous: migraines, mood swings, short temper, cramping, depression, weight gain, fatigue, memory loss, hot flashes, irregular periods, breast tenderness, premenstrual syndrome, high blood pressure and inflammation. Conditions may also include osteoporosis, uterine fibroids, insomnia, allergies, breast and uterine cancer, acne, psoriasis, flushing, low sex drive, facial hair growth, thinning hair or miscarriage.

Symptoms of low estrogen may include fatigue, hot flashes, night sweats, memory lapses, difficulty concentrating, joint pain, dry skin, loss of libido, atherosclerosis, headaches/migraines, vaginal dryness or infection, arthritis, depression, panic attacks and low self-esteem.

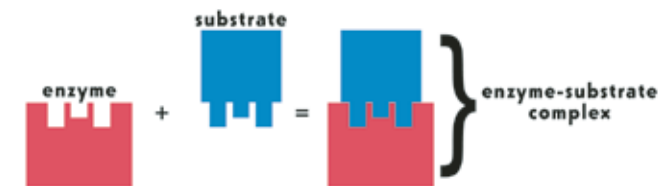


figure 2

Progesterone, produced by the corpus luteum after ovulation, is the precursor, or the building block, for estrogen, testosterone and cortisol production. The progesterone message to cells is to slow down growth and to mature, putting the brakes on the estrogen command to multiply and grow.

Progesterone promotes and maintains pregnancy, improves thyroid function, increases libido, decreases uterine and menstrual cramping, and decreases water retention. Because it promotes cell maturation and decreases the estrogen-fueled cell multiplication, it helps protect against cancer.

An additional benefit is that it acts as a natural antidepressant and anti-anxiety agent, while improving cognitive brain function.

Progestin, another environmental toxin, acts like progesterone, but in a defective or incomplete manner by not binding properly to the natural progesterone receptors, giving incomplete instructions to cells, causing a hormonal chaos to ensue which creates a roadblock in the production of estrogen, testosterone and cortisol.



What: Green Happy Hour
When: Thurs., May 6th, Green Business Support - 4:30 pm, Social - 5:30 pm
Where: Renaissance Bistro
 207 Chartwell Ct, Myrtle Beach
 (Just off 544, west of Bypass 17 behind the BB&T Bank.)
www.GreenDrinks.org

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Hormones have a critical function in managing our health, and work with extremely sensitive checks and balances. Each hormone has its counterpart that regulates its function with signal and feedback regulation, and if this process is disrupted through natural or environmental factors, health and comfort are affected.

Let us rejoice, celebrate and become aware that the natural hormonal symphony is divinely and beautifully composed, directed and orchestrated to create the human masterpiece.

Dr. Dalal Akoury, known by friends as Dr. Dolly, is the founder of AWAREmed, a wholistic medical practice located at North Beach Plantation, 719 North Beach Blvd, Suite 6. Shares the building with Cinzia the Spa and Beach Fit. North Beach Boulevard meets Route 17 across from Barefoot Landing in North Myrtle Beach. For more info, call 843-361-2772 or visit AWAREmed.com. See ad page 11.