

# Hormone Balancing

Chronic stress, environmental toxins, oxidative damage, poor dietary choices and inadequate nutrients all contribute to eventual hormonal decline in many people. Symptoms often present as fatigue, loss of joy, insomnia, mood changes, a mid-life crisis, hair loss, low libido, weight gain, loss of muscle mass, mental "fogginess", hot flashes and night sweats, heat intolerance, premenstrual syndrome, infertility, and altered gastrointestinal functions. The effects are varied in the individual and are often best evaluated in a comprehensive manner. This includes a thorough history, physical examination, and hormone testing.

Once a base-line is established we provide transdermal herbal or prescription (N.M. license) creams to restore hormonal balance, in addition to other recommendations.

People tend to think of women's "hormone problems" as starting in midlife with the onset of menopause. In fact, a dysfunctional pattern can begin during adolescent years or even before birth. The severity of hormonal problems may increase with age, but it is not aging per se that is the root of declining health. It is most often the cumulative physiological effects of stress that cause disruption of the natural rhythms and balancing mechanisms of women's hormones, thereby eventually compromising overall health as well as sexual and reproductive health.

**Sex and stress hormones are chemical messengers formed in endocrine organs and certain body tissues and then carried in the blood to other areas of the body. Depending on how specific their effects, hormones can alter either the functional activity or the structure of one or more organs. Synthetic hormones are different from naturally occurring hormones; they are structurally altered (so as to be patentable).**

Allopathic (conventional) medical thinking fails to look for or treat the root causes of women's hormonal imbalances. For example, more young women today are experiencing infertility because they are not ovulating, yet they are being given fertility drugs like Clomid without comprehensive hormonal evaluations. Though these women often succeed in conceiving, they generally end up paying a price for shortsighted symptom management. The future health consequence is that other symptoms will appear and hormonal imbalance will progress.

Similarly, women are led to believe that it is normal to experience distressing menopausal symptoms. They anticipate having to accept the conventional treatment choice of hormone replacement therapy (HRT) with synthetic hormones. Women are encouraged to do this in spite of the fact that estrogen supplementation places them at risk for breast cancer and other serious health problems. HRT, fertility drugs, birth control pills and other hormonal therapies were all designed to treat only specific symptoms with no regard for the effects they have on the entire body. Because of this non-holistic approach, we are seeing an increase in the incidence of not only breast cancer and sexual reproductive organ dysfunctions, but also uterine and ovarian cancer.

**What everyone will hopefully soon realize is that menopausal and sexual reproductive problems are actually symptoms of overall hormonal imbalances.**

Another problem with conventional HRT is that it generally employs the wrong forms of estrogen and progesterone. Synthetic estrogens or the estrogens that are excreted in pregnant mare urine are often used. And of the three estrogen hormones (estradiol, estriol and estrone) found in women's bodies, most conventional pharmaceutical products use only estradiol. Many HRT formulas also contain synthetic progestin (as opposed to natural progesterone), which is included to help balance the effects of synthetic estrogen. Yet an artificial hormone cannot function in concert with another artificial hormone to create balance in the body. Worse, these HRT formulas ignore the increasingly common wisdom that it is progesterone deficiency, not estrogen deficiency that leads to early or difficult menopause and many other health problems affecting women.

Millions of women continue to experience dysfunctions such as PMS, depression, decreased libido, fibrocystic breasts, food and sugar cravings, uterine fibroids, irregular or excessive uterine bleeding and endometriosis (see Quick Definition below). Those whose dysfunctions are extremely painful or debilitating are told that their "health is more important than their reproductive organs" and that "a hysterectomy would be the best thing." Unbelievably, an estimated trillion-plus dollars was spent during the twentieth century to remove women's reproductive organs. Hysterectomy now out-numbers almost all types of surgery performed in the U.S.

### **The Endocrine Interplay**

What needs to be understood is that if a woman's thyroid or adrenal glands are depleted or functioning inadequately (a fairly common occurrence in our stressful culture) she will likely experience problems with her sexual reproductive organs. The connection between these organs, the thyroid, the adrenals and other endocrine glands, is that endocrine hormones govern them all. This is an important interrelationship, which is why what disrupts one gland can disrupt another, causing a kind of domino effect or vicious cycle. The immune system and the thymus are involved too, because abnormal hormone levels inhibit immune response.

The endocrine system (see below) is responsible for homeostasis (the body's ability to maintain stable internal conditions), including body temperature, regardless of changing external conditions. Balance is crucial to all life processes. The body functions within very specific margins, and being forced to function outside of those margins can cause a whole series of negative events, even death. The endocrine system also controls the processes of reproduction, metabolism, growth and development.

Common Endocrine Hormones: DHEA, Pregnenolone, Progesterone, Estrogen, Cortisol

One of the biggest reasons why hormonal imbalances are misunderstood is because "modern" medicine disregards the way the human body deals with its environment. Consider that the body's responses basically have not changed for 50,000 years. We still respond to our environment with the most primal of mechanisms: the "fight-or-flight" mechanism, which is the release of adrenaline and other stress hormones. The stress response, initiated in the hypothalamus and pituitary, and regulated by the adrenal glands, is responsible for redirecting energy and resources away from the reproductive organs when we are under severe or chronic stress, directing it instead to the muscles and organs that are necessary for survival. This redirection is allowed to take place because on the body's list of priorities, survival comes first and reproduction comes last.

The reproductive system is the only body system whose functions are biologically expendable. With this in mind, we see how the ability to reproduce becomes a privilege in the body, not a right. Fertility, or the ability to ovulate, is therefore a good indicator of the overall health of a woman.

The fight-or-flight response can be a detriment as well as a lifesaving response. In a modern

environment, many things (ranging from allergic reactions to being cut off while driving) can evoke this mechanism. Throughout daily life, there are many hidden as well as overt sources of stress. Most of the time, our response to stress ends without a literal "fight" or some form of physical activity, as our ancestors would have engaged in. One of the problems with this is that adrenaline, unlike most hormones, has no enzyme "switch" to turn it off, once released it must be used or it remains active. As a result, we remain in a state of hyper-stimulation, with abnormal levels of adrenaline and cortisol, the primary fight-or-flight hormones. Other hormone levels, such as the pancreatic hormone glucagon, also become disregulated. If hyper-stimulation persists, we have difficulty inducing a relaxation response, and we do not return to a normal state.

Over a period of time, if chronic stress continues, the body adapts to adrenal hyper-stimulation, continuing in a perpetual fight-or-flight mode. This is called maladaptation (a process in which endocrine system organs begin to break down). This process eventually reaches the point where the adrenals become exhausted and cortisol levels drop. One example of what can result from adrenal exhaustion is fibromyalgia, a condition that can arise when the protective benefits of normal cortisol levels are lost. The adrenals are usually first in the order of endocrine function breakdown, followed by the insulin-producing portion of the pancreas, thyroid, ovaries, parathyroid, pineal, pituitary and finally, the link to the autonomic nervous system, the hypothalamus. The thymus gland, which produces immune defense cells, is also affected in the endocrine breakdown process. Each of these glands controls specific functions, and as each breaks down, new symptoms appear. Symptoms are subtle at first. Then over the years, as the body goes further into deficit, the symptoms will increase and worsen.

Women are rarely cautioned about this kind of fetal stress before or during their pregnancies. Nor are they told how the developing baby's adrenal glands will enlarge to meet the mother's demand for additional stress hormones. A baby born in this state of secondary hyper-stimulation produces too much stress hormone. While the baby's adrenal glands can eventually decrease their output, the glands will tend to reinflate more easily (like a balloon) every time extreme demands are made upon them. If severe or chronic stress persists however, hyper-stimulation continues. As the baby grows and matures into an adult, this maladaptive cycle will be perpetuated, causing her sex hormones to be routed from her reproductive system and used for her own stress purposes.

## **Breaking the Stress Cycle**

Once a maladaptive stress cycle has been established, it will continue until appropriate intervention takes place to restore hormonal balance. This can be done at any age, and functional hormonal testing is the first step. The best type of stress and sex hormone testing is known as a circadian test, which is performed over a 24-hour period.

Sampling is easily accomplished at home, and the test results will determine the exact levels of accumulated stress and sex hormones. Using a collection kit, a woman can obtain a saliva sample every four hours for 24 hours by chewing on a salivette (a small dacron roll). The results will show specific hormonal changes that occur every four hours, demonstrating a 24-hour graphic representation of the body's stress reactions.

Salivary testing is the best test method because saliva contains free fractions of stress and sex hormones. Free fractions are the utilizable hormones, those that the body actually has access to. Many studies have been conducted showing the validity of assaying these steroid hormones in saliva. The usual hormone tests, conducted with blood samples, measure total hormone production, a value that includes bound (not free) hormones that are unavailable for the body's use. It is important to measure free

fractions to get an accurate picture of how sex and stress hormone levels are varying by body function and activity.

Also, conventional hormone panels usually test only the blood plasma levels of the sex hormones and only at the moment of sampling (when the blood was drawn). A Female Circadian Panel evaluates fluctuations of the salivary hormone levels of estrogen (estradiol), progesterone, testosterone, cortisol, DHEA and melatonin over a 24-hour period. Important clues about endocrine health are revealed by circadian fluctuations. For example, we know that because human skin regenerates mostly at night, high nighttime cortisol values mean that less skin regeneration is taking place.

### **Steps to Restore Hormonal Health**

- **First, support the endocrine system and allow it time to repair.**
- **Support immune function, thereby reducing stress on the endocrine system.**
- **Make dietary and nutritional changes according to genetic predisposition, allergies, personal weight and exercise objectives.**
- **Support proper digestive function; eliminate any malabsorption problems.**
- **Exercise: establish your level of capacity and personal training objectives.**
- **Relax: walk in nature, swim, pursue creative activities, change routines.**

### **Establishing a Baseline**

Comprehensive hormonal testing should be performed to establish a baseline before a woman chooses any kind of hormonal treatment, and then should be repeated periodically thereafter. Baseline test results are also needed to order custom-made transdermal hormonal creams from various compounding pharmacies around the country. Women should also consider additional testing, such as a comprehensive, 5-hour glucose tolerance test and a lipid panel (cholesterol, triglycerides and HDL). An abnormal (especially high) level of cholesterol, the basic building block of sex and stress hormones, indicates that the body is attempting to provide more stress hormones. In some cases, testing for gastrointestinal problems, allergies or even parasites is advised.

Note, however, that "normal" (negative) results from conventional laboratory diagnostic tests do not always mean normal function. Some tests do not reveal serious existing conditions; others are not able to detect borderline conditions. One example is thyroid testing, which cannot indicate how well thyroid hormone (T<sub>3</sub>) is able to bind to target cells, a thyroid condition that can be caused by high levels of estrogen. Woman suspecting hormonal imbalances or experiencing distressing symptoms should discuss testing with a healthcare practitioner.

### **Effective Treatment**

By evaluating hormonal changes over a 24-hour period, a pattern can be determined and a treatment protocol designed. An effective plan involving natural hormones, nutritional support and various stress-relief therapies can be successfully implemented to reestablish the proper menstrual dynamics, hormonal balance and well-being.

It should be mentioned that in many scientific circles, the 28-day menstrual cycle is believed to be a result of the impact of the modern world. Up until the last hundred years, the menstrual cycle is said to have reacted to seasonal changes. Fertility was at its peak during the fall months, thus helping guarantee the survival of the newborn during the much more hospitable spring and summer environment. The menstrual/fertility cycle could last as long as 90 days, and was absent during times of serious stress.

When evaluating the "modern" 28-day cycle and hormonal balance it is important to understand that approximately the first 14 days of the cycle are estrogen dominant and the second 14 days are progesterone dominant. This is an over-simplification but it helps to establish an understanding of the healthy dynamics of the menstrual cycle.

The first treatment consideration is that the maladaptive stress response must be interrupted so that sex hormones will no longer be converted for stress purposes. Women must know that, until these conversion pathways are closed, supplementation with the sex hormones estrogen and progesterone is of little value because they will easily be converted. First, therefore, proper levels of the adrenal hormones cortisol and dehydroepiandrosterone (DHEA) need to be reestablished. DHEA is a much talked about hormone these days because of its importance in maintaining youthfulness; a healthy DHEA level is considered an indicator of longevity.

## **Transdermal Hormone Creams**

In addition to individual needs, an important factor regarding the correct levels of any kind of supplement is how quickly it is metabolized and eliminated from the body. This is called metabolic clearance. A supplement, especially a hormone, should not accumulate or remain in the body too long, or it will interfere with the changes that must occur --in this case, the necessary shift from estrogen to progesterone--for supplementation to be effective.

A transdermal hormonal cream supplement works best. It is easily applied and delivered, bypassing the obstacle of breakdown in the digestive system or liver. Most of the available hormonal creams claim to be transdermal, but are actually topical. A big problem with topical creams is that most of them use an inexpensive oil cosmetic base. They are absorbed into fat cells, and months after discontinuance they can still be found in body tissues. Also, a topical relies on the small size of the hormone molecule (progesterone being very small, estrogen very large) to transverse the layers of the skin and makes its way into the bloodstream. A true transdermal does not rely on the size of the molecule; instead it has a vehicle to carry it to the target. This is called a liposomal delivery system, which employs a molecular coating to control absorption.

Hormone Tests:

<u>Adrenal Stress Test 24 hour: (DT):</u> 24 hour salivary test	\$175
<u>Female or Male 24 hour Circadian</u> Good initial test for endocrine dysfunction in Menstruating females or in males of all ages	\$240
<u>Female 28 cycling hormone panel (SS)</u> Fertility issues, or issues related to specific times in female cycle (premenstrual headaches)	\$330
<u>HPA Comprehensive Panel (SS):</u> For anxiety, fatigue, sleeplessness, depression	\$275
<u>HPA Comp Panel 3 (SS):</u> Hormonal and emotional symptoms, severe hot flashes, low libido, anxiety, insomnia, mood swings, long term menopausal symptoms	\$335
<u>Neuro Panel 2 (SS)</u> Anxiety, panic, mood swings, insomnia, person on anti-depressants, severe hot flashes	\$205
<u>Female or Male Comprehensive: (Neuro + Comp.)</u> The most complete neuro-endocrine testing available	\$445
<u>Child Comprehensive Panel (SS)</u> Behavioral issues, ADD/ADHD	\$235