



## SCHWIETERMAN PHARMACIES' COMPOUNDING CENTER

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### Hormones 101

#### Did You Know?

- 7 out of 10 women who complain of low sex drive have a hormone imbalance
- 8 out of 10 women with hot flashes have a hormone imbalance
- 7 out of 10 women who complain of irritability have a hormone imbalance

Hormones regulate the activity of cells and tissues in various organs of the body. The balance of hormones produced by your body is essential to good health and a feeling of well-being.

In women, various sex hormones like estrogen, progesterone, testosterone, and other hormones like cortisol, and DHEA, exert powerful effects throughout life.

#### How do Hormones get out of Balance?

Hormones are incredible chemical messengers in our body that affect our brain, heart, bones, muscles, and reproductive organs and are an essential part of the workings of every cell in the human body. **Hormones work best when balanced.** However, hormones can become imbalanced.

Hormone imbalances are caused by:

- Higher than average levels of stress;
- Poor food choices;
- Inadequate sleep;
- Taking synthetic hormones; and
- Sedentary lifestyle – lack of movement or exercise.

#### Restoring Hormone Balance

Restoring Hormone Balance can be the key to feeling our best and alleviating health problems. To help you in your journey we've outlined some steps for you to consider for hormone balance.

**Assess your symptoms** - perimenopause and menopause hormone imbalance can be marked by a variety of symptoms. Do you have any of the following?

- Weight gain
- Hot flashes and night sweats
- Insomnia
- Mood swings, anxiety, or depression
- Changes in menstrual flow or frequency
- Headaches
- Foggy thinking
- Memory changes
- Vaginal dryness or libido changes

- Changes in the skin
- Fatigue

**Seek to balance your health and hormones through lifestyle changes.** Eat healthy. Reduce Stress. Exercise. Get Good Sleep – all of these choices can balance hormones. Why? Your lifestyle has a direct effect on your hormones. For example, high stress levels increase cortisol production – the stress hormone – and affect your other hormones and throw them off balance. [Learn how to naturally achieve hormone balance](#)

**Find a qualified health care professional knowledgeable about hormone balance** and the spectrum of health and treatment options you might consider.

**Get Tested.** Your health care professionals should evaluate your hormone balance through an analysis of symptoms and by testing and monitoring hormone levels. Talk to your health care provider about assessing your hormone levels.

**Work in partnership** with your health professional to come up with a treatment plan that will help you achieve hormone balance. Ask them about nutrition, non-hormone options, and vitamins and supplements. Ask them if you *need* to supplement hormones.

**Some women may need to supplement hormones.** Realize that what works for one woman may not work for you. Any type of hormone replacement therapy needs to be tailored to your needs. [Ask your health care provider about bioidentical hormone options.](#)

If your treatment plan calls for supplemental hormones, ask your health care provider if they have prescribed the most **appropriate physiological dose** for you to achieve the desired result, and what you should expect to experience when taking it.

**Chart your symptoms over time**, you will learn a lot about your health and hormone balance by keeping a daily log. Be patient. Share the information with your provider.

**Report any concerns or problems** right away to your health care provider.

## How to Test for a Hormone Imbalance

*This is an excerpt from "Awakening Athena," Kenna Stephenson, MD's recent book. We gratefully acknowledge Dr. Stephenson for sharing her wisdom and expertise with Women in Balance. In some instances, Women in Balance has added some information in italics.*

### Determining Hormone Levels

Hormone balance is essential to good health for women of all ages. Unfortunately, the accuracy of the tests used to determine hormone levels varies widely. The two most prevalent types of testing for hormone imbalance are saliva testing, in which a small sample of a woman's saliva is analyzed to determine the levels of specified hormones, and serum testing, which is based on the analysis of a blood sample from the woman. *Urine testing may also be an option.*

### Saliva Testing

Saliva testing has been used in clinical research, including studies conducted at the National Institutes of Health (NIH) for more than 30 years. Saliva testing has been available to physicians for over a decade, and Medicare and many insurance companies provide reimbursement. Over years of clinical practice, I have found that saliva testing is the most accurate measurement of the body's availability of the hormones Cortisol, DHEA, Estrogen, Progesterone, and Testosterone. Saliva testing is much more specific and correctly identifies the level of hormones at the cellular level, in contrast to a serum (blood) test, which measures the level of hormones circulating in the bloodstream.

*Saliva testing is not helpful, however, to monitor women who are taking hormones in a sublingual (drops or spray) or transmucosal (lozenge or troche) format. These forms of hormone delivery concentrate the hormones in the salivary glands and the resulting saliva levels are too high to be useful.*

## Serum or Blood Testing

Most serum tests define the normal range of hormones very broadly, which is a distinct disadvantage to their use. After a woman's blood has been drawn, a portion of the blood sample (the serum) is used to measure hormone levels. Most serum testing measures the level of "free" hormone (the hormone that can easily enter the cell), the level of the "total" hormone (the hormone attached to substances that carry hormones in the bloodstream), or a calculated combination of both free and total levels of hormone. It is not an accurate reflection of the bioavailable hormone (the amount of hormone that is active in organs and tissues). In addition, the results of the serum testing are often inconsistent, especially if the hormone value indicated is in the low-normal range.

*Serum testing is less helpful in monitoring women using transdermal (patch or cream) forms of hormones, as the hormone is bound to the red blood cell surface and does not register in the serum in very high amounts.*

Many women whose serum test results are normal cannot understand why they continue to experience the symptoms of hormone imbalance. Saliva testing, however, provides a more exact range of normal results.

Follicle-stimulating hormone (FSH) testing, which is a type of serum test, is another frequently used hormone evaluation. The FSH test is frequently used to determine the hormonal status of premenopausal women who may complain of hot flashes, mood changes, or other symptoms. The FSH test should not be used as an accurate measure of sex steroid hormone production or as an indication of reproductive status for most women, because the level of FSH fluctuates widely during the decade before menopause. A properly conducted FSH test requires that blood be drawn three times at 60-minute intervals beginning precisely at 8am. The FSH reference ranges are based on the average of those three levels, but I have found that the test is often performed improperly. In many cases, only one blood sample is drawn for evaluation, usually during the appointment with the woman's physician at a time other than 8 am. The vital clinical decisions about a woman's hormonal status and subsequent treatment are usually based on that single test.

## Alternatives to HRT: Testing Not Guessing

When hormone imbalance is detected early and steps are taken to correct it, symptoms can be relieved, and progression to disease states may be prevented. To correct a hormone imbalance, I use the "test-and-treat approach," which involves assessing the woman's hormone levels and then providing individualized treatment such as customized dosages of bioidentical hormones, if needed, and lifestyle and nutrition recommendations designed specifically for her.

The test-and-treat approach is far superior to the "guess and treat" approach that I was taught in medical school and residency and that is still used by many physicians. In the guess-and-treat approach, the woman reports her symptoms and the physician guesses which hormones might be out of balance before prescribing a standard dose of a hormone.

If, at the follow-up visit, the woman's symptoms have not improved or her condition has worsened, her treatment is changed to another standard dose of conventional hormone therapy. After several episodes of treatment with different hormones or changes in doses, a patient who reports no improvement is often treated with a drug to relieve anxiety or depression.

Unfortunately, the guess-and-treat approach is still far too common in clinical practice. Most physicians would never prescribe drugs such as a blood thinner or cholesterol-lowering medication without monitoring the patient appropriately. Many are, however, very willing to prescribe highly potent hormones that can induce harm, but they do not believe that monitoring the effect of treatment is important.

## Hormone Treatment Options

One of the most frequently asked question we get from women is "Should I take hormone replacement therapy?"

Answering that question is ultimately between you and your health care provider. but here are some essential things you should know about the range of hormone options.

There are four basic categories of hormones:

- **Bioidentical compounded hormones.** These are hormones made from a natural substance and are bio-chemically identical to human hormones (called bioidentical hormone

therapy or BHRT) and then compounded by a pharmacist as a customized dose and in a customized preparation.

Compounded bioidentical hormones can be customized for the individual and meet the unique needs of each woman with lower doses, special combinations, and unique delivery methods. Compounded bioidentical hormones are prescribed by a health care provider and made by a compounding pharmacy. Many women are better able to tolerate them because they are identical to her hormones and can be delivered in individualized doses.

Natural, or bioidentical progesterone creams sold over the counter also are available in unique low doses. Look for brands that contain USP progesterone, have supporting research, and are paraben free.

- **Bioidentical pharmaceutical hormones.** Hormones made from a natural substance and are bio-chemically identical to human hormones, as in bioidentical compounded hormones, but now these are made by a pharmaceutical company, in standard doses, not customized formulations, and may include the specific (patented) additive of a binder, filler, preservative, dye or adhesive.
- **Hormones that are not bioidentical.** These are hormones that include some that are *natural* - to a horse - but not bio-chemically identical to a woman's hormones. Many women experience side effects because the chemical structure does not match a woman's biological hormone receptors.
- **Hormones that are synthetic**—not derived from a natural substance and not bio-chemically identical. Synthetic hormones were created by pharmaceutical companies to *attempt* to mimic the effects of female natural hormones.

For example progestins are *not* the same as progesterone, which is the natural female hormone. The difference between **synthetic progestins and progesterone** is very significant. For instance, progestins are given to women to prevent pregnancy, whereas progesterone is used to assist fertility. Since progestins are foreign to a woman's body, sometimes they create adverse effects on a woman's brain, blood vessels, skin, heart and breast. In selected cases however, they may be a necessary option.

In most cases if a woman needs to supplement her hormones she should work with her health care provider, and only if hormone treatment is needed, **choose bioidentical hormones in appropriate physiological doses.**

## Hormone Treatment Options - Bioidentical hormones

### Bioidentical Hormones

Natural or bioidentical hormones commonly used for perimenopausal and menopausal women include progesterone and the natural estrogens (estradiol, estrone, and estriol), DHEA, and testosterone. They can be compounded in special unique doses and combinations, in unique delivery methods to meet the needs of each woman, and in consultation with her practitioner.

The bioidentical hormones from pharmaceutical companies come in limited doses and delivery method. Compounded bioidentical hormones are available from specialty compounding pharmacies with a prescription from your health care provider, and bioidentical progesterone creams are available over the counter.

Over the past decade, millions of women have used bioidentical hormones with great success and improvement in health. Research studies done in the U.S. and Europe on bioidentical hormones have confirmed this.

**Bioidentical hormones include the following hormones:**

### Estrogens

*Bi-estrogen* (Bi-Est), a combination of estriol and estradiol. From 50% to 80% of Bi-Est is estriol,

which has been shown to protect against breast cancer in animal studies. Estriol causes little or no stimulation to the uterine lining and is clinically effective for the treatment of symptoms caused by estrogen deficiency, such as vaginal dryness and atrophy, painful intercourse, and urinary tract disorders (incontinence, frequent urinary tract infections).

Estradiol relieves symptoms such as vaginal thinning and dryness. It decreases hot flashes and night sweats; improves mood, energy level, sleep patterns, memory, and cognitive function; and reduces bone loss and the risk of developing type 2 diabetes. It also helps to lower blood pressure. Tri-estrogen (Tri-Est), a combination of 80% estriol, 10% estradiol, and 10% estrone. Only a few women may need supplemental estrone, which is the primary estrogen produced after menopause. Estrone is produced from hormone precursors in peripheral fat tissue, so it is typically reserved for underweight women or those of low normal weight.

### **Progesterone**

Progesterone is a hormone commonly prescribed for women with too much estrogen relative to the level of progesterone produced by the body. Progesterone minimizes the stimulating effects of estrogen on coronary arteries, and when given alone or combined with estrogen, it may improve bone mineral density. Progesterone improves sleep, may increase libido, acts as a diuretic, lowers blood pressure, and improves the insulin-glucose balance to facilitate blood glucose control.

*Special note:* "Progestins" are sometimes erroneously referred to as "progesterone." A progestin is very different and is not a bioidentical hormone, it is a synthetic hormone made to mimic the effects of progesterone. Some practitioners do not make the distinction between progestin and progesterone, which has caused much confusion. For example **progestins** are given to women to prevent pregnancy, whereas progesterone is used to assist fertility. The two could not be more different. Since progestins are foreign to a woman's body, sometimes they create adverse effects on a woman's brain, blood vessels, skin, heart and breast.

**DHEA** is prescribed for women whose hormone profile as determined by saliva, blood or urine testing indicates a low level of DHEA. DHEA enhances libido, helps to build bone mass, lowers the levels of cholesterol and triglycerides, improves the sense of well-being, and increases alertness.

**Testosterone** is prescribed for women deficient in that hormone. It can help to improve libido, help to build bone mass, improve mood and the sense of well-being, increase muscle mass and strength, lower levels of cholesterol and triglycerides, normalize blood glucose levels, and decrease body fat.

\* this information is found at [www.womeninbalance.org](http://www.womeninbalance.org)

**For more information, visit:** <http://www.womeninbalance.org/solutions/hormones/index.html>



- A written or verbal prescription from a licensed physician, nurse practitioner, or veterinarian is required for compounded medications.
- Medications compounded for animals are not intended for use in food animals.
- Information provided by medical history form, consultation, or other materials is not intended to take the place of advice, supervision, and care from a medical professional. Clients should consult an appropriate medical or other healthcare professional before using or relying on any advice, information, comments, or content of medical history form, consultation, or handouts provided. Proper medical advice and supervision are important before making decisions about exercise, diet, nutrition, supplements, medication, testing, or other health issues.