

NATURAL FEMALE HORMONE REPLACEMENT

What is Natural Hormone Replacement Therapy (HRT)?

Natural HRT is the replacement of hormones that are normally produced by the human body with hormones that are biologically identical (bio-identical) in chemical structure and function.

What is the importance of bio-identical chemical structures?

Only hormones whose molecular structure exactly match those produced by the body will reproduce the same effects. Synthetic hormones such as conjugated equine estrogens (Premarin®) and medroxyprogesterone (Provera®) have estrogen and progestin activity. *But because they are not bio-identical they may not produce the same desirable effects as the human bodies own hormones and have an increased risk for side effects and adverse reactions.*

Where do natural bio-identical hormones come from?

The sources of bio-identical hormones are soy plants or yams. Substances found in these plants are chemically processed in such a way as to produce hormones identical to those produced by the human body. Individuals "allergic" to soy can often use soy-derived products because the pharmaceutical grade hormones used are so pure.

What are the goals of natural HRT?

- Manage the symptoms associated with the natural reduction of hormones produced by the body
- Maintain the benefits originally provided by the body's own hormones
- Maintain a hormonal balance natural to the body
- Eliminate the side-effects and adverse reactions produced by the synthetic, non bio-identical substances

What are the bio-identical hormones?

The most common are the estrogens [estrone, estradiol, estriol], progesterone, testosterone, dehydroepiandrosterone (DHEA) and pregnenolone.

ESTROGENS

There is no one hormone called estrogen. Estrogen is actually the name of a class of hormones. The three major estrogens produced by women are estriol, estradiol and estrone. Estradiol is the most potent of the three and is the most stimulating to the breast tissue. Estrone is present in smaller amounts but appears to be the most cancer causing of the estrogens.

ESTRIOL (E3)

Estriol is the weakest of the three major estrogens. In fact it is 1000 times weaker in its effect on breast tissue. Estriol is the estrogen that is made in large quantities during pregnancy and has potential protective properties against the production of cancerous cells.

An important article in the 1966 Journal of the American Medical Association by H.M. Lemmon, M.D., reported a study showing that higher levels of estriol in the body correlate with remission of breast cancer. Dr. Lemmon demonstrated that women with breast cancer had reduced urinary excretion of estriol. He also observed that women without breast cancer have naturally higher estriol levels, compared with estrone and estradiol levels, than women with breast cancer. Vegetarian and Asian women have high levels of estriol, and these women are at much lower risk of breast cancer than are other women. Estriol's anticancer effect is probably related to its anti-estrone properties-it blocks the stimulatory effect of estrone by occupying the estrogen receptor sites on the breast cells.

Estriol is the estrogen most beneficial to the vagina, cervix and vulva. In cases of vaginal dryness and atrophy, which predisposes a woman to vaginitis and cystitis, topical estriol is the most effective and safest estrogen to use. Because of this estriol is better than estradiol for the treatment of chronic urinary tract infections.

None of the American drug products contain Estriol, so it is not available in most drug stores, although it has been used widely in Europe for over fifty years. Because estriol cannot be patented it does not hold much interest for the pharmaceutical industry. Its availability through compounding has caused its use to grow rapidly throughout the country.

ESTRADIOL (E2)

Estradiol, the principal estrogen found in a woman's body during the reproductive years, is produced by the ovaries. Estradiol is very effective for the symptomatic relief of hot flashes, genitourinary symptoms, osteoporosis prophylaxis, psychological well-being and reduction of coronary artery disease.

Because it is much more potent than estriol, it can be more effective for symptomatic relief than estriol. When Estradiol is replaced using a parenteral (sublingual or transdermal) route, it is not subject to first pass metabolism by the liver, and therefore does not produce high levels of estrone. Using these routes of administration a woman can mimic the physiologic release of estradiol from the ovaries, thus receiving natural hormone replacement.

ESTRONE (E1)

Estrone is the estrogen most commonly found in increased amounts in post menopausal women. The body derives it from the hormones that are stored in body fat. Estrone does the same work that estradiol does, but it is considered weaker in its effects. The horse urine estrogen Premarin® is converted primarily to estrone in the body, and estrone is the estrogen that feeds estrogen-dependent cancers of the breast and may play a role in their development.

PROGESTERONE

Progesterone is produced by the ovaries and the adrenal glands in women and, in smaller amounts, in the testes and the adrenal glands in men. One of its most important functions is in the female reproductive cycle. Progesterone prepares the lining of the uterus for implantation of a fertilized egg, then helps to maintain it during pregnancy. If pregnancy does not occur it signals the uterus to shed this lining.

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Progesterone also plays an important role in brain function and is often called the "feel good hormone" because of its mood enhancing and anti-anxiety effects. Optimum levels of progesterone can mean feelings of calm and well being, while low levels of progesterone can mean feelings of anxiety, irritability and even anger. Current research shows that progesterone may play a role in the maintenance of the nervous system, the sense of touch, and motor function.

TESTOSTERONE

Usually considered a male hormone or androgen, women also produce testosterone although in much smaller amounts than men do. Testosterone works differently in the bodies of men and women, but it plays a very important role in the overall health and well being of both sexes. Often called the "hormone of desire" because of its powerful effect on libido, testosterone is also important in building strong muscles, bones, and ligaments as well as increasing energy and easing depression. Low levels of testosterone have been known to cause fatigue, irritability, depression, aches and pain in the joints, thin and dry skin, osteoporosis, weight loss, and the loss of muscle development.

As with all of the hormones, testosterone must be dosed properly to be effective without causing unwanted side effects. The dose in women is generally one-tenth that used in men. Because testosterone is not effective when it is taken orally it is usually prescribed as a topical gel, cream or as a sublingual tablet. Although testosterone was discovered more than sixty years ago, only very recently have we begun to fully understand and appreciate the power of testosterone.

DHEA

Short for Dehydroepiandrosterone, DHEA is a steroid hormone distinguished from others by its unique chemical structure. DHEA is produced by the adrenal glands (located just above the kidneys) as well as by the brain and the skin, and is the most abundant steroid in the human body.

As newborns, we have an extremely high level of DHEA, but within a few days after birth, our DHEA level drops to nearly zero. Then between the ages of six and eight, we experience the event called "adrenarche" in which our adrenal glands begin to stir and gear up for puberty. At the same time our DHEA level begins to rise steadily and continues to rise until it peaks at around age twenty-five to thirty. From that point on it declines at a rate of about 2 percent a year, and we begin to feel the result of this decline in our forties. By eighty our DHEA level is only fifteen percent of what it was when we were twenty-five. This drop in DHEA levels correlates dramatically with the signs and "symptoms" associated with aging.

DHEA is currently the focus of some of the most exciting medical research of this century. Researchers at distinguished medical centers all over the country are studying the properties and promise of DHEA. It is proving to be a potent protector against cancer. It protects against heart disease by lowering blood cholesterol and preventing blood clots. Studies also demonstrate that DHEA improves memory, strengthens the immune system, prevents bone loss, and may even

protect us from diabetes and autoimmune disease. It has been shown to fight fatigue and depression; it enhances feelings of well being and increases strength. DHEA alleviates symptoms of menopause, reduces body fat, and is even known to enhance libido because the body can convert DHEA to testosterone.

PREGNENOLONE

Pregnenolone is a superhormone that is key to keeping our brains functioning at peak capacity. Some scientists believe it is the most potent memory enhancer of all time. Perhaps what is even more amazing are the studies that demonstrate pregnenolone enhances our ability to perform on the job while heightening feelings of well being. In other words, this superhormone appears to make us not only smarter but also happier.

Like the other steroid hormones pregnenolone is synthesized from cholesterol. In a complex series of steps, cholesterol is broken down into different steroid hormones as the body needs them. It is first synthesized into pregnenolone and used by the body in that form. What is not utilized undergoes a chemical change that "repackages" it into DHEA. DHEA in turn is used by the body as DHEA and is also broken down into estrogen and testosterone. This chain of hormones is known as the "steroid pathway." Because pregnenolone gives birth to the other hormones, it is sometimes referred to as the "parent hormone."

Pregnenolone was studied extensively in the 1940s. It was shown to be beneficial in elevating mood, improving concentration, fighting mental fatigue, improving memory and relieving severe joint pain and fatigue in arthritis. Pregnenolone has vast therapeutic potential and is currently undergoing further studies in these areas.

Can HRT have side effects?

Estrogen replacement therapy (ERT) remains controversial. One of the main considerations when reading data about hormonal replacement therapy is that the drug used primarily in some if not all of these studies was horse urine conjugated estrogens, and that many of the studies involved the use of estrogens by themselves. The estrogen was used unopposed (that is, not in combination with a progestogen or progesterone). Unfortunately, there is not a lot of long term data about natural hormonal therapy because no drug company can get a patent on a naturally occurring compound, which means that they can not charge millions of dollars for the drug and have an exclusive market on it. Please keep in mind that the following is about synthetic estrogens, not natural estrogens.

FDA-approved estrogen drugs have been documented to cause cancer. The recent Women's Health Initiative (WHI) showed that the oral administration of the synthetic hormone Prempro® increased the risks of stroke, heart disease, blood clots, and breast cancer while lowering the risk of colon cancer and fractures. The authors commented that other forms of HRT could produce different results.

Never take hormone replacement of any kind except under the supervision of a physician experienced in their use and appropriate monitoring!

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How are Natural Hormones supplied?

Because natural hormones cannot be patented, large drug companies have no interest in manufacturing them. They are available by prescription from Compounding Pharmacies, which specialize in the precise manufacture of bio-identical hormones.

Natural hormones can be made into pills, injections, rub-on gels, sublingual tablets, patches and suppositories. In general hormones should not be taken in pill form because of an effect called ‘first-pass phenomenon’ by the liver. When a medication is taken orally, it first goes through the liver where a significant portion of it is de-activated. It can also be transformed into other compounds, which may have harmful effects. These problems can be avoided by using rub-on gels or sublingual (under-the tongue) tablets.

Will my insurance pay for Natural HRT?

Most patients with prescription coverage, will have coverage for bio-identical HRT. The compounding pharmacist can check your insurance coverage for you once she knows what hormones you will need.

How do I get started?

The evaluation for Natural HRT includes a complete physical exam and measurement of current hormone levels. With this information, a precise HRT program can be designed around your body’s needs. After starting therapy, hormone levels will be measured periodically to ensure that your hormone levels remain in the ‘youthful’ range.

OTHER HORMONES OF IMPORTANCE

CORTISOL

Cortisol is an essential hormone that plays many vital roles, including helping the human body adapt to stress. Yet this naturally occurring hormone is one of the few whose levels in the body increase with age, with potentially damaging consequences that have been linked to depression, Alzheimer’s disease, and other maladies.

Cortisol is a hormone released in response to stress. While cortisol plays vital roles in the body, excessive prolonged secretions of this hormone can have serious health implications, including loss of mental function, depression, lowered immune response, fatigue, sugar cravings and binge eating, sleep disturbances and a reduction in lean tissue. Thus it is critical to maintain cortisol levels within a healthy range.

THYROID HORMONE

Thyroid hormone deficiency becomes quite common in women after the age of 40. The thyroid gland secretes hormones that control the body's metabolic rate in two primary ways: by stimulating tissue response in the body to produce specialized proteins and by increasing cell oxygenation. To produce these vital hormones, the thyroid needs the element iodine, which is ingested from food and water.

A thyroid deficiency (hypothyroidism) means that the thyroid gland is producing too little thyroid hormone. The symptoms of hypothyroidism are gradual and are sometimes mistaken for depression. Facial expressions become dull, the voice becomes hoarse, eyelids droop, and the face and eyes become puffy and swollen. Hypothyroidism can cause a number of other conditions, such as anemia, allergies, skin problems, fatigue, nervousness, gaining or losing weight, brittle nails, dry skin, gastrointestinal problems (constipation), infertility, mental sluggishness, low immune function, depression, and intolerance to cold. Carpal tunnel syndrome has also been associated with thyroid deficiency.

Overt hypothyroidism is easy to diagnose by a simple blood test. Low levels of T3 and T4 (the main active thyroid hormones) are signs that you do not have enough thyroid hormones. An elevated TSH is a sign of thyroid deficiency. When your TSH is high, it means the pituitary gland is trying to make the thyroid gland produce more hormones.

If, however, someone is suffering from the classic symptoms of thyroid deficiency but has normal test results, the thyroid slowdown could be slight or age-related and is not easily detected by a blood test. Thyroid deficiency often mimics many symptoms associated with old age. One way to determine a thyroid deficiency is to check your basal body temperature.

Barnes Basal Temperature Test

Place a thermometer at your bedside, and as soon as you wake up before you step out of bed, place the thermometer under your arm for at least 3 minutes. If you are T3 deficient, you will find your basal temperature to be below 97.8°F (normal throughout the day is 98.6°F). If your first-thing-in-the-morning temperature is consistently low, it likely means that your basal (resting) metabolic rate is also low. Record the time, date, and temperature every morning for 2 weeks to show your doctor.

MELATONIN

Melatonin sets your body's 24-hour clock. The pineal gland in your brain secretes melatonin in response to decreased sunlight to initiate sleep. Melatonin secretion is known to decline with menopause.

As people age, their sleep quality often undergoes significant deterioration, commonly characterized by frequent and longer-lasting nighttime awakenings. In many people over 40, sleep disturbance is correlated with a decline in melatonin secretion. A number of published studies also show that decreased melatonin production is also associated with the onset of a host of degenerative diseases. Other factors that can lower melatonin levels include caffeine, alcohol, tobacco, aspirin and ibuprofen, tranquilizers such as Valium and Xanax.

Low melatonin secretion has been associated with insomnia, heart disease, lowered testosterone levels and breast cancer.