

# **Hormone Replacement Therapy For Women**

Consultation Information



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# Biological Aging and Hormones

As we age, a natural degeneration and aging of organs causes the levels of our hormones to diminish. Hormones control virtually all of the functions of the body including our reproductive, immune and metabolic systems. Hormones also control our overall physical and mental health. As the levels of hormones decline, so do we decline both physically and mentally. We lose our energy, vitality, and health, as well as our longevity.

Conventional medicine has always held the belief that aging is inevitable and that progressive deterioration cannot be altered. However, this is simply not true. The downward spiral of physical and mental decline is becoming recognized as somewhat controllable and preventable. One of the most important and successful treatments is optimal hormone supplementation.

## ***But what exactly are hormones?***

Hormones are molecules that are manufactured in endocrine glands, which include the adrenal glands, the testes, ovaries, pancreas, thyroid, pituitary gland and pineal gland. Hormones are released into the blood stream and...

- exert biochemical effects on distant organs and cells.
- affect every cell in the body by activating a receptor site on the cell and thereby causing activation of protein synthesis.
- are either proteins or derivatives of cholesterol.

One stereotyped view portrays all women as creatures at the mercy of their hormones. Granted, hormones undoubtedly have a huge influence on the body, but there's no reason why anyone has to become slaves to them! The more we understand how hormones can affect the female body, mind and emotions – the better we are able to minimize their negative effects and enhance their positive ones. Hormones are produced by both the Endocrine and Reproductive Systems, and affect the body throughout a woman's life.

## **Puberty**

At puberty, hormones will begin to make major, lasting changes to a girl's body. A part of the brain called the hypothalamus starts to release increasingly large and frequent pulses of a hormone called GnRH. This stimulates the pituitary gland to produce luteinising hormone and follicle-stimulating hormone, which in turn cause a girl's ovaries to start producing other hormones.

## **Female Sex Hormones**

The most important hormones made by the ovaries are known as female sex hormones (sex steroids) – and the two main ones are estrogen and progesterone. The ovaries also produce some of the male hormone, testosterone. From puberty onwards, hormones play a vital part in regulating a woman's menstrual cycle. Each month, one egg becomes mature and is released. If that egg isn't fertilized, the levels of estrogen and progesterone produced by the ovary begin to fall resulting in a period.

## **Pregnancy**

If the egg released from the ovary is fertilized, a woman's hormones change dramatically. A new hormone, HCG, produced by the developing placenta, stimulates the ovaries to produce higher levels of estrogen and progesterone that are needed to sustain a pregnancy. Around the time of delivery, other hormones come into play that help the womb to contract during and after labour, as well as stimulate the production and release of breast milk. After childbirth, levels of estrogen, progesterone and other hormones fall sharply, causing a number of physical changes.

## Menopause

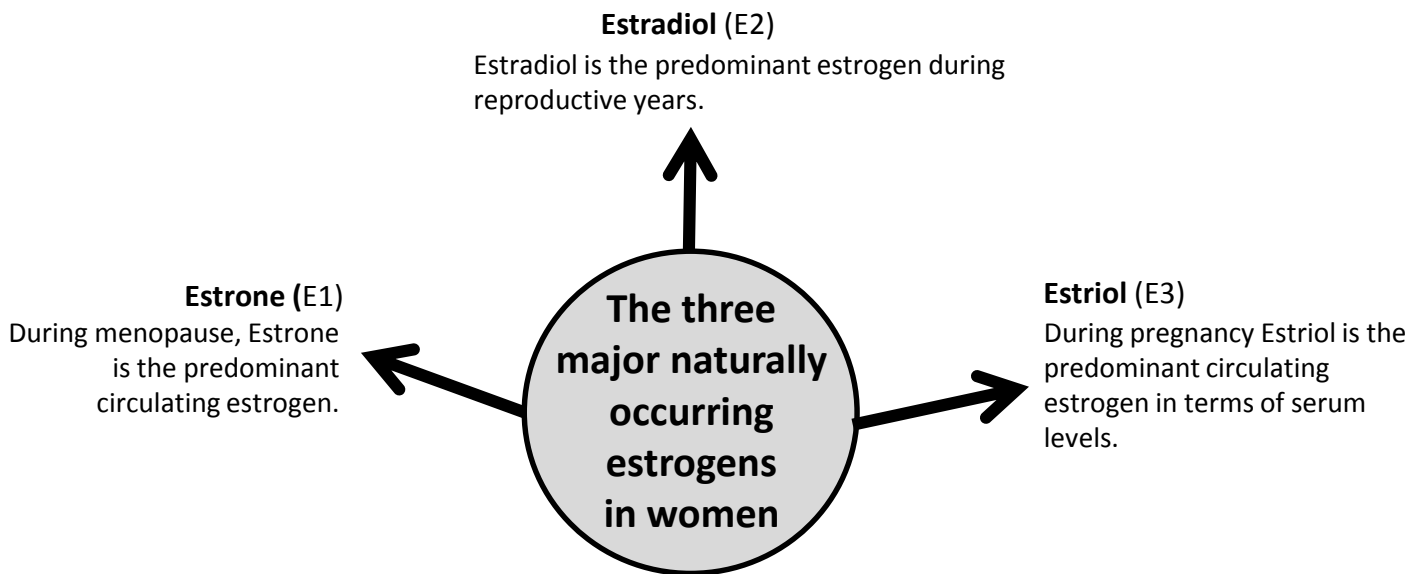
The next significant hormonal change for most women occurs around the time of the last period. Over five to ten years leading up to a woman's last period, the normal functioning of her ovaries begins to deteriorate. Eventually, the ovaries produce so little estrogen that the lining of the womb fails to thicken up and so periods stop altogether. A woman is said to have reached the menopause when she has not had a period for one year. For most of a woman's life, estrogen helps to protect the heart and bones, as well as maintaining the breasts, womb, vagina and bladder in their healthy state. The loss of estrogen can increase the risk of heart disease and osteoporosis. Other problems include vaginal dryness, discomfort during sex, recurrent urine infections and incontinence. It may also contribute to the depression, irritability and poor concentration which some menopausal women experience.

## Understanding Estrogens

Estrogens, in females, are produced in the ovaries and adrenal glands, and are the primary female sex hormones.

### Estrogen deficiency can result in:

- Urogenital atrophy
- Urinary incontinence
- Sagging skin and breasts
- Increased wrinkles
- Fatigue
- Depression
- Mood swings
- Decreased libido



Another type of estrogen called Estetrol(E4) is produced only during pregnancy.

# Understanding Progesterone

Progesterone is another female hormone of equal importance although it is commonly overlooked. It is produced by the ovaries and is used in nature to balance estrogen. Progesterone is a very beneficial treatment for premenstrual syndrome (PMS), which includes moodiness, irritability, bloating and headache. These symptoms are due to falling progesterone levels. For those women who are unable to take estrogen, progesterone can be prescribed to treat many of the common symptoms of menopause and prevent the diseases associated with menopause.

Progesterone protects against: Breast cancer, Osteoporosis, and Cardiovascular disease.

## Other effects:

- Is a natural tranquilizer, and promotes feelings of well-being.
- Enhances beneficial actions of estrogens, and relieves menopausal symptoms.
- Stimulates new bone formation, and increases core during ovulation.
- It reduces spasm and relaxes smooth muscle. Bronchi are widened and mucus regulated.
- It acts as an anti-inflammatory agent and regulates the immune response.
- It normalizes blood clotting and vascular tone, zinc and copper levels, cell oxygen levels, and use of fat stores for energy.
- It may affect gum health, increasing risk of gingivitis (gum inflammation) and tooth decay
- It appears to prevent endometrial cancer (involving the uterine lining) by regulating the effects of estrogen.
- Progesterone plays an important role in the signaling of insulin release and pancreatic function, and may affect the susceptibility to diabetes or gestational diabetes.

# Understanding Testosterone

Testosterone is also a female sex hormone, and is secreted by the ovaries and adrenal glands. Even though testosterone is widely known as a sex hormone, it is also critically important for women's physical and emotional health. Testosterone production is substantially lower in women than it is in men. After puberty, a woman begins to produce an adult level of testosterone. The production is split between the ovaries and the adrenal glands. Women produce just a fraction of the amount of testosterone each day that men do.

Low testosterone levels in pre- and postmenopausal women can diminish motivation, induce fatigue, and contribute to low libido. Besides its psychological and sexual effects, adequate levels of testosterone play an important role in helping women maintain a healthy body composition. Besides helping women maintain lean muscle mass and an enjoyable sex life well into their forties, fifties, and sixties, new evidence points to additional positive effects of testosterone on a woman's health as she ages. Additional benefits include: relief of menopausal symptoms, restores energy, strengthens bones, prevents Osteoporosis, decreases cholesterol, increases HDL (good cholesterol), improves sense of well-being, skin tone, muscles, bones, tendons and joints. Testosterone is the best hormone for the skin to prevent thinning and wrinkles while increasing collagen.

# Hormone Replacement Therapy for Women

**Hormone replacement therapy**, or **HRT** is a system of medical treatment given to some women whose hormone levels drop significantly due to perimenopause and menopause. Essentially, HRT will top up a woman's level of essential hormones to prevent discomfort caused by progressively diminished amounts of these hormones in the body. The main types of hormones involved are estrogens, progesterone or progestins, and testosterone. While Hormone Replacement Therapy offers many benefits to women, it is not a cure-all, it will not reverse aging, nor will it keep a woman permanently at one age.

Over the years, there have been many questions regarding Hormone Replacement Therapy. On July 17, 2002, the news media reported that hormone replacement has been shown to increase the risk of heart disease and breast cancer. The reality is that medical studies have reported for some time that **synthetic** estrogen and **synthetic** progesterone cause an increased risk of heart disease and cancer, but only when supplemented in the **synthetic** form. **Natural** hormone replacement does not pose the same risk.

## Synthetic hormones

You might ask, "If there are hormones available that are **natural** to the body, why do doctor's prescribe synthetic hormones?" The explanation involves the powerful pharmaceutical industry in the United States, along with politics and economics. Unfortunately, Much of what some physicians know about drugs comes directly from pharmaceutical companies promoting a product. Because pharmaceutical companies don't manufacture natural hormones, most physicians do not learn about them unless they do personal research.

## Natural (Bio-identical) Hormones

Where do natural hormones come from? The pure biologically identical (human identical) hormone is either extracted from plants (such as soy or yams), or synthetically manufactured. What is most important is that the end product is a molecule identical to the hormone molecule found *naturally in the body*.

A compounding pharmacist is able to acquire pure pharmaceutical grade hormone and compound it into the dose and form ordered by a physician. They also use ingredients that are micronized – which means that the product is fine grain and well absorbed by the body. They can also be prescribed as long-acting or time release. In addition, some hormones can be purchased at regular pharmacies and health food stores. However, hormone supplements found at health food stores are most often a dose that is so low that it does not require a prescription. Usually the dose is so small that it is insufficient to produce a measurable difference in the body.

There are many factors to consider when deciding whether to take hormone replacement therapy, including your current health status and medical history. Discuss your risk factors and medical history with your doctor. While postmenopausal hormone replacement therapy (HRT) is an effective way to treat menopausal hot flashes, it is not recommended for everyone. The following quiz may help you determine whether or not HRT is right for you.

1. Do you have abnormal vaginal bleeding, such as extremely heavy periods or spotting between periods?
2. Is there a history of breast cancer in your family?
3. Do you have a history of endometrial or uterine cancer?
4. Do you currently have, or have you in the past had, venous thrombosis (blood clots in the veins)? This includes thrombosis or blood clots during pregnancy or when taking birth control pills.
5. Do you have chronic liver disease?
6. Do you smoke?
7. Do you have gallbladder disease?

If you answered yes to any of the above questions, HRT may not be for you. Please check with your doctor to see if you can take HRT and learn about other treatment options.

# Hormone Replacement Options

## Estrogen

Estrogen replacement options include oral pills or tablets, a transdermal patch, vaginal ring, vaginal cream, skin cream or skin gel. When given through an estrogen patch, vaginal ring, or skin cream or gel (transdermal estrogen), estrogen enters the bloodstream directly, without passing through the liver. The estrogen in pills must be processed by the liver before entering the bloodstream, which puts stress on an impaired liver. Low-dose vaginal estrogen affects only the urinary and genital area.

## Progesterone

Progesterone comes in many forms, most commonly topical creams, the oral capsule and the sublingual tablet. Bioidentical progesterone has a calming, mood-stabilizing effect. Synthetic progestins, on the other hand, tend to be associated with a set of net unpleasant effects.

## Dehydroepiandrosterone (DHEA)

DHEA is a hormone produced by the adrenal glands and is derived from cholesterol. It is the most abundant steroid hormone in the body. DHEA has many beneficial effects. It is the building block that is necessary to make estrogen, progesterone and testosterone.

It has been shown that DHEA:

- Improves the function of the immune system
- Improves brain function, relieves stress, increases energy
- Has been shown to be a very potent anti-cancer supplement
- Reduces body fat and cholesterol
- Is an antioxidant as it appears to prevent the formation of free radicals.

## Melatonin

Melatonin is a hormone secreted by the pineal gland, which is located in the center of the brain. It regulates our circadian rhythm as well as regulates the deep stages of sleep. It is in these deep stages of sleep that our immune system is stimulated. The pineal gland uses Melatonin to maintain the body's balance, equilibrium and homeostasis. It has also been shown to:

- Have a role in the biologic regulation of circadian rhythms
- Improve sleep, improve mood
- Benefit reproduction, slow tumor growth, function as an antioxidant

## Steps for Diagnosing Low Testosterone

The number of symptoms and signs of low testosterone may not always be obvious. An added source of confusion is that many of the symptoms overlap with symptoms of depression or with what we consider "normal aging". In spite of amazing medical advances, one of the most important diagnostic tools is the information a patient provides a doctor in the form of a medical history. At the first visit, a doctor will ask many questions about general health as well as specific questions about sexual interest and activity that relate to low testosterone. Some of the specific topics asked about may include:

# Diagnosing Low Testosterone continued...

## *Personal History:*

- Date of birth
- Allergies
- All prescription and non-prescription drugs currently being taken
- Previous and existing conditions and major illnesses
- Names of current and previous doctors
- Dates/reasons for previous medical visits
- Dates and kinds of surgeries
- Copies of past test results
- Lifestyle habits – smoking, alcohol consumption, drug use
- Family and relationship problems, including any sexual ones
- Major life events or changes that have occurred

## *Family History:*

- Alcoholism
- Blood diseases (hemophilia or sickle cell)
- Cancer (all types)
- Diabetes
- Heart disease, hypertension or stroke
- Kidney disease
- Mental illness
- Other illnesses and disorders

Your doctor will also ask you questions about your sexual history and development. These may include:

- Any genital abnormalities present from birth
- When and how quickly puberty took place
- Frequency of sexual intercourse

Once the doctor has a general idea about your past and current situation, he or she will conduct a thorough physical examination. Once you begin testosterone replacement therapy, these tests should be repeated at 6 weeks, 6 months and annually thereafter. Monitoring your health while on treatment is very important.

## Testosterone Pellets for Women

Testosterone Pellets, or implants are made up of hormones that are pressed or fused into very small solid cylinders. These pellets are slightly larger than a grain of rice and are created by compounding pharmacists and delivered in sterile glass vials.

Pellets are a unique hormone replacement therapy that deliver consistent, levels of hormones for 3-5 months depending on the person. After using a mild, local anesthetic, the small pellets are inserted under the skin, typically in the hip, which is then closed with a skin tape (steri-strip).

In studies, when compared to conventional hormone replacement therapy, pellets have been shown to be superior for relief of menopausal symptoms, maintenance of bone density, restoration of sleep patterns, and improvement in sex drive, libido, sexual response and performance. Additionally, pellets do *not* increase the risk of blood clots like conventional or synthetic hormone replacement therapy.

Testosterone delivered by a pellet implant, has been used to treat migraine and menstrual headaches. It also helps with vaginal dryness, incontinence, urinary urgency and frequency. Testosterone has also been shown to increase energy, relieve depression, increase sense of well being, relieve anxiety and improve memory and concentration. Even patients who have failed other types of hormone therapy have a very high success rate with pellets.

Minor complications from the insertion of pellets include: minor bleeding or bruising, discoloration of the skin, infection, and the possible extrusion of the pellet. Other than slight bruising, or discoloration of the skin, these complications are rare.

Testosterone may cause a slight increase in facial hair or acne in some women. Testosterone stimulates the bone marrow and increases the production of red blood cells. Testosterone, delivered by implants or other methods, can cause an elevation in the red blood cells. If the hemoglobin and hematocrit (blood count) get too high, a unit of blood may be donated.

After the insertion of the implants, vigorous physical activity should be avoided for 48 hours in women. Early physical activity is a cause of 'extrusion', which is a pellet working it's way out. Antibiotics may be prescribed if a patient is diabetic or has had a joint replaced. However, this is a 'clean procedure' and antibiotics may not be needed.

Women who are breast cancer survivors, or have a history of breast cancer in their family, may still be a candidate for this therapy. A consultation with your physician, prior to this treatment, will determine if you are able to receive Testosterone pellets. The doctor will also determine if this therapy appropriate for those already using creams, patches, hormone replacement pills, prescription medication or birth control pills.

## Let's Recap...

Hormone deficiency is responsible for many of the symptoms that occur as we get older. However, hormone deficiency is simple to treat. Severe deficiency, over prolonged periods of time result in illness, physical impairment, disability and increased morbidity.

Deficiency of hormones leads to symptoms and illness that are improved and prevented by hormones replacement therapy. Improvements seen are:

- Increased breakdown of fat, weight loss and reduced body fat
- Decreased incidence of heart disease and atherosclerotic plaque
- Increased energy and exercise capacity
- Improved vitality and quality of life
- Increased strength, endurance and muscle tone
- Improvement in hair, skin and nails
- Improved sleep and well-being
- Reduced levels of cholesterol and triglycerides
- Less incidence of heart disease and diabetes
- Progesterone decreases the incidence of breast cancer

Hormone Replacement Therapy slows cellular degeneration and allows improved function and healing. This results in less disease and illness, a slowing of the aging process and a better quality of life.