



Ruthie Harper M.D.  
Nutritional Medicine Associates  
3901 Medical Parkway Suite 100  
Austin, TX 78756  
Phone: (512) 343-WELL  
Fax: (512) 346-0100

From conception, HORMONES, which are produced by the endocrine glands, serve as messengers from your brain, telling your internal organs how to function. A decrease in the production of hormones begins in middle age and continues to diminish in a linear fashion until old age. In the female, this is known as menopause. In males we refer to this as andropause.

The ultimate in preventive medicine technology has finally been realized:

**Insufficiency of hormones has been discovered to be a major element  
in the process of aging.**

Fortunately, the NIA (National Institute on Aging) has instructed several major U.S. universities to study this phenomenon. Research from around the world during the last five years has lead the NIA to realize the tremendous benefits of hormone replacement therapy.

The emphasis of allopathic medicine has always been to diagnose and treat a disease process. Unfortunately, many of the disease processes, including cardiovascular disease, stroke, cancer and Alzheimer's disease, have been blamed on the aging process. However, conventional medicine has never treated aging as a disease process nor has it tried to prevent this disease process. Now we can look at aging as a significant factor in disease formation and attempt to prevent the symptoms of aging by treating aging as a disease itself. We now have begun to change our thinking that it is normal to deteriorate with age and therefore acceptable. Fortunately, we now know that much of the deterioration of aging is preventable.

This new gestalt of treating aging as a disease process first started in 1991 by a famous endocrinologist at the Medical College of Wisconsin named Dr. Daniel Rudman. Dr. Rudman studied hormone replacement in older men, the results of which were published in the prestigious *New England Journal of Medicine*. Dr. Rudman stated in an interview, "We reversed 10-20 years of the aging process in older men. Fat diminished, muscle tissue and strength increased." There was also increased lean body mass, decreased body fat, increased vertebral bone density, increased skin thickness, increased exercise tolerance and exercise endurance, improved healing and immunity, and tremendous increase in over-all well-being. This was all accomplished by the simple administration of human growth hormone. Thus Dr. Rudman's study revealed solid research supporting the fact that hormonal decline itself is a major cause of our aging. He showed that providing the body with additional human growth hormone could reverse symptoms of the aging process.

Other scientists have realized the importance of supplementation of other hormones. Scientists at the Gerontology Research Center of the National Institute of Health in Baltimore, Maryland, are working with other researchers to examine the role that reduced plasma sex hormones play in age-related disturbances, including musculoskeletal function, body composition and metabolic function. Combined hormone replacement therapy, by returning growth hormone and sex hormone levels to levels typical for younger people, has shown additive or synergistic effects. Physical and psychological function is improved, including improvement in cardiovascular function, improved cholesterol levels, increased lean body mass, and improved muscle strength and fitness. Let's take a look at the various hormones and their roles.

Hormones are tiny, chemical messengers continuously secreted into the bloodstream by endocrine glands to regulate activities of vital organs. After being produced, they travel to their target cells where they attach in a lock and key fashion to allow the cell to function optimally. Hormones stimulate a multitude of life-giving processes throughout the body, which maintain health, harmony, growth, healing, and repair. Probably the best known hormone is insulin, which is secreted by the pancreas. Before the development of the production and administration of insulin, many people died as a result of diabetes or had severe debilitating illnesses. Once scientists were able to synthesize insulin, the severe changes associated with diabetes reversed.

Genetic engineering has now enabled scientists to synthesize all the natural hormones found in our bodies. This significant advancement in the ability to synthesize our hormones has led to endocrinology research which corrects the deficiency of hormones that contributes to our decline with aging. It is the operation of the endocrine system that is responsible for the regulation of the body's temperature, sexual desires, growth, healing, aging, and immune system. It is the endocrine system that allows the central nervous system to communicate with every cell in the body. Hormone deficiencies affect every cell in the body and result in degenerative changes and the aging process as well as symptoms of aging. However, bringing hormone levels back to a level we had when we were younger reverses many of the unfavorable effects that begin to appear as we age.

### **ESTROGEN**

Estrogen is secreted by the ovaries. Estrogen protects against heart disease, stroke, osteoporosis, Alzheimer's disease and memory disorders. It protects against vaginal atrophy, urinary incontinence, and prevents symptoms of menopause, including hot flashes and temperature dysregulation. It improves balance by improving the visual somatosensory system in the central nervous system. Estrogen deficiency results in urogenital atrophy, incontinence, sagging skin in the breasts, increased wrinkling of the skin, fatigue, depression, mood swings and decreased libido. It is of extreme importance that the estrogen prescribed be natural estrogen and not synthetic estrogen. The synthetic estrogens have been shown to have more side effects and potential risk. We prescribe only natural hormones and never synthetic hormones. For optimal protection, natural estrogen supplementation should be balanced with natural progesterone.

### **PROGESTERONE**

Progesterone is secreted by the ovaries and reduces symptoms of premenstrual syndrome (PMS). It protects against uterine and breast cancers, osteoporosis, fibrocystic disease and ovarian cysts. It dramatically decreases menopausal symptoms. Most U.S. physicians prescribe synthetic progestins which cause side effects such as bloating, headaches, fatigue, and weight gain. The natural progesterone which can be prescribed in place of the synthetic progestin will avoid these side effects and protect against cancer. We emphasize the use of natural hormones and not synthetic hormones, which have been proven time and again to cause significant side effects.

## **Estrogen and Progesterone For Post-Menopausal Women**

Female hormone levels of estrogen and progesterone drop drastically after menopause. It comes as no surprise that after menopause heart disease in women skyrockets, surpassing even the male population. In fact it is the leading cause of death in older women with over a half million deaths per year in the U.S., more than twice as many as all cancer deaths combined.

Estrogen has been prescribed for over 40 years to women at menopause to give them relief from sweating, fatigue, hot flashes, vaginal dryness, depression, and decreased libido. Replacing estrogen improves skin and muscle quality and greatly improves mental outlook. More importantly it decreases the risk of heart disease and osteoporosis. Although the research varies, the consensus of opinion is that estrogen replaced alone without progesterone can increase the incidence of uterine and breast cancer. Studies have shown that estrogen alone causes tissue growth in the uterus that can lead to cancer, however when replaced in conjunction with progesterone, the risk is diminished.

There are basically 3 forms of estrogen, estradiol, estrone, and estriol. Estradiol is the most frequently prescribed in its conjugated form as Premarin. This synthetic form of estrogen frequently causes side effects in women. Estradiol in its natural form is preferred in that it provides the same protection that synthetic estrogens do against heart disease and osteoporosis with less side effects. Estradiol can be delivered orally or in a form that does not pass through the liver (patch or cream).

Estrone, also in Premarin, relieves post menopausal symptoms but alone can promote cancer if not combined with progesterone replacement and frequently causes side effects as well.

Estriol is considered a weak estrogen. It therefore doesn't provide significant protection for heart and bone unless used in large doses. However, it should be noted that estriol is the only form of the three that actually has been shown to have an anti-cancer effects. In fact, in a recent study it inhibited the breast cancer promoting effect of estradiol in mice.

Estrogen protects against:

- Heart disease
- Stroke
- Decreases cholesterol
- Prevents and lowers incidence of Alzheimer's
- Improves memory
- Decreases symptoms of Menopause
- Prevent osteoporosis by slowing process

The risks of estrogen replacement include:

- Increase body fat
- Increase fluid retention
- May cause depression and headaches
- May impair blood sugar
- Increased risk of breast and uterine cancer

Progesterone, estrogen's counter part, is produced in the corpus luteum, the adrenal glands and in the placenta during pregnancy.

Progesterone:

- Is a precursor to estrogen and testosterone

- Increases the breakdown of fat
- Protects against cancer
- Maintains the endometrium of the uterus and protects against endometrial cancer
- Is a natural diuretic
- Restores libido
- Prevents osteoporosis, by stimulating osteoblasts to form new bone

Estrogen and progesterone replacement when combined provide many of the benefits of hormone replacement therapy without the risks. Together they protect against cardiovascular disease, improve and/or prevent osteoporosis, improve mood and mental status and improve sexual function or libido.

Estrogen and Progesterone can be administered by several different methods:

- 1) Progesterone alone (cycle or continuous)
- 2) Continuous estrogen plus continuous progesterone
- 3) Continuous estrogen plus cyclic progesterone
- 4) Cyclic estrogen plus cyclic progesterone

There are no contraindications for progesterone replacement, however estrogen replacement is not recommended for patients with the following conditions:

- History of breast/uterine cancer
- History of phlebitis and blood clots
- History of gall bladder disease
- Presence of uterine fibroma
- Presence of endometriosis
- Presence of liver disease

### **TESTOSTERONE**

Testosterone is a hormone secreted by the adrenal glands, testes, and ovaries. It contributes to muscle mass, strength and endurance, decreased fat, increased exercise tolerance, enhancement of well-being and psychological status. Testosterone protects against cardiovascular disease, hypertension, body fat and arthritis. It leads to improved lean muscle mass, increased bone density, decrease cholesterol, improved skin tone, improved healing capacity, and increased libido and sexual performance. It prolongs the quality of life by decreasing the diseases of aging, as does estrogen in the female. Testosterone is also present and extremely important in the female as well as the male, making supplementation absolutely recommended for men and women.

### **DHEA**

DHEA is a hormone secreted by the adrenal glands. This hormone is a precursor to other sex hormones. In addition to having its own hormone effect, it results in a shift to an anabolic or protein building state. It reduces cardiovascular risk by increasing lipolysis or the breakdown of fat. It also stimulates the immune system, restores sexual vitality, improves mood, and decreases cholesterol and body fat. Recent studies point to DHEA as an anti-stress hormone, reversing the effects of stress on the immune system.

### **PREGNENOLONE**

Pregnenolone is a precursor to other hormones. It functions as a memory enhancer and is a factor in cellular repair, particularly in the brain and nerve tissue. Pregnenolone protects cerebral function and protects against neuronal injury.

### **MELATONIN**

Melatonin is secreted by the pineal gland. It is a circadian rhythm hormone, thereby affecting the patterns of sleep. Research has shown that the cells of the body rejuvenate and repair during the deeper stages of sleep. It is during the deeper stages of sleep that the body produces natural killer cells or CD4 cells. Melatonin increases the deep stage of sleep and stage IV sleep, thereby increasing and enhancing immunity. Improved sleep patterns serve to energize the body and improve mood. Melatonin has powerful antioxidant effects which accounts for disease prevention qualities. Melatonin has tremendous cancer prevention effects due to its enhancement of the immune system. Melatonin deficiency results in poor sleep, jet lag, irritability, hypersensitivity and premature aging.

### **THYROID HORMONE**

Thyroid hormone is a metabolic hormone secreted by the thyroid gland that regulates temperature, metabolism and cerebral function. It contributes to energy levels, temperature regulation and body warmth. It increases fat breakdown, resulting in weight loss as well as lower cholesterol levels. It protects against cardiovascular disease and improves cerebral metabolism. It helps to prevent cognitive impairment. Thyroid hormone is probably the safest and most beneficial cholesterol lowering agent, yet it is infrequently used for this!

### **GROWTH HORMONE**

Growth hormone (hGH) is secreted by the pituitary gland and is taken into the liver and converted into a protein called somatomedin-C or IGF-1 (insulin-like growth factor-one). It is IGF-1 that is partially responsible for the growth hormone functions in the body. Growth hormone contributes to ongoing tissue repair, healing, cell rejuvenation, bone strength, brain function, enzyme production, and the integrity of hair, nails, and skin. The signs of growth hormone deficiency are the same as the signs of aging: Body composition shifts with an increase in fat and body weight and a decrease in muscle mass and energy. There is a decrease in bone mineralization, vitality ebbs, and there is increased cardiovascular disease and mortality. There are also psychosocial deficits and impaired physical performance, poor sleep, and decreased social interaction.

Research indicates that daily supplementation of growth hormone may reverse symptoms of the aging process and restore a more youthful physiology and condition. All major hGH studies have documented improved body composition and function. There is a consistent improvement in muscle/fat ratio. There is 10-20% decrease in fat and a 10% increase in muscle. There is also an increased lipolysis or breakdown of fat with the concomitant decrease in cholesterol and triglycerides. There is also an increase in exercise capacity, bone density, muscle mass and strength. There is increase in cardiac output, skin rejuvenation with an increase in collagen and elastin, and significant improvement in immunity which results in growth hormone's anticancer and longevity effect.

## **HGH- Somatotropenia or Somatotropedeficiency**

**Symptoms of deficiency:**

Decreased energy, fatigability, loss of concentration, sociability, activity, memory difficulties, irritability and mood disorder, poor response to stress, decreased ability and desire to exercise, decreased sense of well-being and diminished sleep, lack of drive and initiation.

**Signs of deficiency:**

Thin hair, hair loss, slow growth, increased wrinkles, sagging and loose skin, thin skin and nails, sagging muscles, pseudogynecomastia, bent over habitus, osteoporosis, centripetal fat deposition, decreased muscle strength and size, increased abdominal fat.

**Diseases of deficiency:**

Cardiovascular disease secondary to atherosclerosis, decreased renal function, increased hyperlipidemia and insulin resistance, decreased bone mass, decreased protein synthesis and healing, heart failure, decreased immune response, increase or decrease cancer.

**Growth Hormone Replacement results in:**

1. Improved lipolysis, decreased atherosclerotic plaque, increased fibrinolysis- clot dissolution.
2. Increased cardiovascular function, increased cardiac output.
3. Increased energy and increased exercise capacity.
4. Improved quality of life secondary to increased vitality.
5. Increased muscle size and strength, decreased fat.
6. Increased bone mass and growth- 3% per year bone growth.
7. Improved lung function and capacity.
8. Improved hair, skin, and nail growth and thickness.
9. Improved memory and cerebral function
10. Improved wound healing and protein synthesis.
11. Improved sleep, both REM and stage 4 sleep
12. Improved sense of well-being
13. Increased immunity with resultant decrease in disease and cancer regulation.
14. Increased life expectancy and quality of life by disease prevention.
15. Increased tightening of the skin, decreasing wrinkles secondary to increased collagen and elastin.

**SUMMARY**

The basics for optimal health and longevity are proper diet, exercise, nutritional supplementation and hormone replacement therapy. This stops cellular degeneration and allows regeneration of tissue and healing which slows the aging process.

Hormones are not drugs. They are natural substances that have existed in our bodies since conception. The doses of hormones taken on hormone replacement therapy should never exceed what your body has already been accustomed to in its younger years. They caused no harm in the body at that time and when restored to youthful levels continue to provide the health and vigor that one loses as they age. When hormones are taken as prescribed by physicians and monitored closely the risk of negative side effects decreases. When all the declining hormones are taken together in the correct doses, they work with each other to restore declining immunity which in turn helps protect the body against cancer.

Physical deterioration is not a requirement of growing older. It is now possible to stop many of the undesirable aspects of aging as well as the symptoms and diseases associated with aging. Hormone replacement therapy is an updated science which has been shown to not only prolong life but prolong the quality of one's life. We specialize in total hormone replacement regimens as well as exercise, diet and nutritional supplementation to achieve maximum benefits and deter the aging process. After a complete physical examine and laboratory evaluation, a personalized hormone supplementation program will be prescribed for you and monitored until optimal hormone levels have been achieved.

**Nutritional Medicine Associates  
3410 Far West Blvd #305  
Austin, TX 78731  
(512) 343-WELL  
Fax (512) 346-0100**

## **ESTROGEN & PROGESTERONE**

### **FREQUENTLY ASKED QUESTIONS**

#### **How are natural estrogen and progesterone produced?**

‘Natural’ means biochemically identical. In other words, the hormone you replace is identical to the hormone made naturally in your body. Many natural estrogens are now produced in the laboratory similar to how synthetic estrogens are made. In addition, natural estrogen and progesterone can be produced naturally in yams. These natural ingredients can then be extracted and processed by special compounding pharmacies into a capsule or tablet. These hormones are identical in molecular structure to our own natural hormones even though the natural base is from yams. Natural hormones should be prescribed by a physician and made by a reputable pharmacy. Over the counter products cannot be counted on for reliability.

#### **How do these differ from the synthetic estrogens and progestins?**

Hormones act as a key that must fit perfectly at the cell site lock opening doors and allowing beneficial things to happen inside the cell. Synthetic estrogen and progesterone are produced in a laboratory in an attempt to elicit the same response as your naturally produced hormones. They are chemically altered so they can be patented by pharmaceutical companies. Since these synthetics are not identical in chemical structure to our own natural hormones, the shape of the key has been changed, and therefore may adversely stimulate receptor sites that lead to side effects. The fit of a natural hormone is perfect- it acts as an identical hormone replacement. In other words, the key is made to fit the lock perfectly.

#### **What are the problems with synthetic estrogen replacement?**

When first developed, synthetic estrogens were well received because they offered the benefits of estrogen replacement- fighting osteoporosis and heart disease. They also helped to reduce the symptoms associated with menopause. However, the long-term results have shown that these synthetic hormones were also eliciting a metabolic response that was not obvious at the start. In some patients, synthetic estrogens contributed to the development of breast and uterine cancer.

#### **Why doesn't my gynecologist prescribe natural hormones?**

Any substance made naturally either in nature or your body (such as vitamins and hormones) is protected by federal regulation. These substances may not be patented and therefore their production is not focused on by major pharmaceutical manufacturers. Much of what physicians learn in medical school is from studies produced by pharmaceutical companies, who have conducted an expensive study to prove the effectiveness of a certain medication. More than likely, your physician was taught only about the synthetic products in medical school. Natural hormones do not come under specific brand names and require more self-education and experience in prescribing and monitoring.

#### **What are the signs of low Progesterone?**

Progesterone is responsible for balancing estrogen and the female reproductive cycle. Deficiency results in symptoms of PMS, water retention, bloating, tender breasts, headaches, cramping, irritability and mood swings.

### **What are the health benefits of Progesterone?**

Research shows natural progesterone stimulates bone building osteoblasts, thus providing protection against osteoporosis. Progesterone reduces the mitotic change in breast and uterine tissue, thereby protecting against cancer. Progesterone is responsible for the physiologic equilibrium with estrogen. It should be used for treating menopausal symptoms, PMS, and osteoporosis. At menopause, women lose both estrogen and progesterone. It only makes sense to replace them both together, building back what was once naturally perfectly balanced in the body.

### **How does one know whether they are receiving adequate amounts of replacement hormones?**

Blood tests determine deficiencies. Blood tests also determine whether adequate replacement has been prescribed. All people will absorb, assimilate, and respond to hormones differently from others. If the proper level is not achieved, then the full benefit of hormone replacement is not realized.

### **What if I've been taking synthetic hormones?**

There are now new types or methods of Hormone Replacement Therapy (HRT) offered because of new data from years of research. Synthetic estrogens have been associated with adverse effects which are unacceptable to many women. Natural or plant derived hormones avoid these problems. If your physician does not know how to prescribe this for you, read and become educated through a physician who prescribes natural hormones to see if these are right for you.

### **Should I take estrogen and progesterone or not?**

The risks of not taking hormone replacement therapy include elevated cholesterol, heart disease, strokes, osteoporosis, depression, menopausal symptoms, and Alzheimer's Disease. The adverse effects of swelling, weight gain, and breast cancer can be eliminated in almost all women by using the natural estrogen and progesterone. Overall health and well-being are improved, long term survival is greatly improved and the quality of life greatly enhanced. The medical community has long recognized the long-term benefits of Hormone Replacement Therapy particularly in preventing heart attacks, strokes, and osteoporosis fractures, all of which result in over 95% of the major cause of death in post-menopausal women.

### **What about Raloxifine?**

Raloxifine (Evista) is of a new class of drugs called estrogen blockers. These anti-estrogens were designed to block estrogen and at the same time stimulate receptors in bones and vessels. This has researchers trying to make estrogen blockers into estrogen replacements without the side effects. Studies show that these compounds are effective in increasing bone mass and preventing heart disease. However, there is little data and no long-term studies. In fact, these estrogen blockers are related to Tamoxifen, which has been shown to stimulate uterine cancer. Patients taking Evista must be especially careful because their chance of forming blood clots increases. Also, estrogen blockers do not relieve any of the side effects of menopause- only estrogen and progesterone relieve these side effects.