



# THE SCIENCE OF AGE INTERVENTION MEDICINE

## HORMONES & HOW THEY AFFECT THE AGING PROCESS

Dr. Rosenstein may recommend a personalized regimen of hormone replacement therapies where clinically indicated, determined by the results of diagnostic testing. Hormonal levels required for optimal functioning will be carefully monitored on a regular basis for efficacy and safety. There are many hormone treatment options that are used to help you combat the effects of hormone deficiencies and premature aging. Here is information about the specific hormones that may possibly be used to help in your treatment plan.

### **ADRENAL STEROIDS**

The adrenal glands produce Cortisol and other Adrenal Hormones that are critical for life. These hormones play a key role in helping the body respond to physical and emotional stress. Unlike other hormones, Adrenal Steroids generally increase with age. Prolonged mental, physical or emotional stress can contribute to adrenal fatigue or insufficiency, a condition that appears as *lack of energy, mild depression, impaired memory and decreased focus, diminished libido and general lethargy.*

If your Cortisol levels are unbalanced, appropriate treatment can improve the cortisone response in women and men alike. Balancing Cortisol levels is vital in regaining and maintaining good health.

### **Benefits of Adrenal Support:**

- Improves energy
- Improves fatigue and quality of sleep
- Reduces cravings for salt or salty food
- Increases ability to perform daily tasks

- Improves sex drive
- Improves PMS symptoms
- Improves ability to handle stress
- Improves depression
- Improves memory and focus
- Improves muscle pain and spasm
- Improves self-worth and motivation
- Improves communication

## **DHEA (DEHYDROEPIANDROSTERONE)**

Dehydroepiandrosterone, or DHEA, is a steroid hormone produced by the adrenal glands and is the most abundant natural steroid found in the bloodstream. *Many research scientists consider high levels of DHEA in the body to be an excellent marker of health.* DHEA is a precursor of testosterone and estrogen. The source of almost all DHEA is the adrenal glands, though small amounts are synthesized in the testes, ovaries, skin and brain. After production, it circulates in the blood stream, where it can convert into Estrogen or Testosterone as needed.

DHEA production drops 50% by age 45, increasing the risk of heart disease and sexual dysfunction. *Studies indicate that DHEA has significant anti-aging, anti-cancer, and anti-obesity effects and that it enhances mental abilities.* By age 75, DHEA levels are only 10 to 20 percent of what they were at age 20. There are strong reasons to think that DHEA supplements may help us feel more youthful. Brain tissues contain, on average, six and a half times more DHEA than any other body tissue, and it is known to protect brain cells from Alzheimer's disease and other degenerative conditions. Boosting levels of this hormone have been found to improve mental function, increase bone density and muscle mass, decrease the risk of heart disease, improve insulin sensitivity and offer protection against cancer and Alzheimer's disease.

### **Benefits of DHEA:**

- Improves mental & physical function
- Elevates mood
- Improves sexual arousal
- Increases bone density

- Increases lean mass while decreasing fat
- Lowers Cortisol levels
- Increases IGF-1 (Growth Hormone)
- Protects brain from Alzheimer's
- Decreases cardiovascular disease
- Increases insulin sensitivity
- Increases testosterone levels

## **ESTROGEN**

Estrogen is responsible for developing the secondary sex characteristics in women. Estrogen is proven beneficial for libido, development of secondary sex characteristics, collagen production, vaginal/bladder tissue elasticity, heart-valve health, menses regulation, electrolyte metabolism, safeguarding pregnancy, reproductive organs and tissue, skin, breasts, cognitive health, arterial lining protection, and HDL (good cholesterol) production. Estrogen is a powerful antioxidant, helping combat free radicals and limits their effects on the aging process. Although estrogen is primarily thought of as a "female" hormone, men have levels of estrogen in their bodies as well.

A recent study (*The Fournier Study*) from France has shown a significant decrease in breast cancer in several thousand women treated with bio-identical HRT.

### **Benefits of Estrogen:**

- Reduces facial hair
- Improves vaginal lubrication
- Improves sex drive
- Prevents vaginal atrophy
- Increases the size of the vaginal lips and clitoris
- Increases the sensitivity of the clitoris
- Increases breast size
- Improves bladder control
- Improves sleep
- Reduces hot flashes
- Helps with depression
- Improves mental function
- Reduces aches, pains, and symptoms of fibromyalgia

## PROGESTERONE

Progesterone is a hormone produced in the ovaries, testes and adrenals. It has a wide range of effects on the body. Progesterone and Estrogen play an important role in menstruation and pregnancy. *Progesterone also works in both men and women to convert fat to energy, normalize blood sugar levels, restore libido, promote cell oxygenation and stimulate bone growth.* In addition, Progesterone aids thyroid hormone activity and has a natural diuretic. Normal levels of Progesterone produce feelings of calmness and balance, while low levels can contribute to irritability and anxiety.

### Benefits of Progesterone:

- Reduce mood disorders
- Reduces anxiety/depression
- Reduces osteoporosis
- Reduces menstrual bleeding
- Reduces the size of uterine fibroids
- Reduces symptoms of endometriosis
- Reduces symptoms of PMS
- Helps polycystic ovarian syndrome
- Improves sense of well being
- Reduces hair loss

## TESTOSTERONE

Testosterone is a hormone that signals the development of male secondary sex characteristics. But like Estrogen, Testosterone is found in both men and women. It helps maintain lean body mass, skin elasticity, sex drive and a healthy immune system, as well as a healthy heart. *Studies show that proper levels of Testosterone regulate mood, improve mental ability, control blood sugar, blood pressure and cholesterol. It may even prevent heart attacks and reduce the risk of prostate cancer.* On average, Testosterone levels in men are at their peak during the 20s and begin to decline by their early 30s.

Although women produce only 10% the amount of Testosterone of men, it is the “*hormone of desire*” for both men and women. Testosterone is essential for sexual function in both men and women, but it has many other uses as well. With

receptor sites in the brain, heart and throughout the entire body, this hormone plays a pivotal role in the health of men and women.

### **Benefits of Testosterone:**

- Enhances muscle mass and strength
- Enhances sex drive and function
- Improves cardiac health and blood pressure
- Improves memory, concentration and visual acuity
- Improves mood and overall sense of well-being
- Improves overall energy
- Increases bone strength
- Increases tolerance for stress
- Reduces cholesterol
- Reduces blood sugar

### **THYROID HORMONES**

Thyroid hormones are vital for cell growth. These hormones regulate protein, fat and carbohydrate metabolism. An underactive thyroid gland that produces too little hormone may cause fatigue, poor tolerance of cold, weight gain and dry skin. *Correcting hypothyroidism can restore your body heat, emotional resilience, endurance, energy, mental vigor, and sexuality.* It can protect you from heart disease and keep your hair and skin healthy and strong.

### **Benefits of Thyroid Replacement Therapy:**

- Eliminates cold hands and feet
- Improves weight loss
- Eases dry skin
- Improves energy levels
- Improves memory and mental acuity
- Reduces menstrual problems
- Improved hair growth
- Reduces arteriosclerosis
- Reduces depression
- Reduces the effects of diabetes

- Improves hypertension
- Improves hypoglycemia
- Reduces migraine headaches

## **MELATONIN**

Melatonin is naturally produced while we sleep. It is made from the amino acid Tryptophan, which is converted into Serotonin, then converted into Melatonin. Excreted by the pineal gland, Melatonin has many important functions. *It plays an important role in regulating sleep, acts as an antidepressant, is a potent antioxidant, helps jet lag and even helps improve alertness.* It has also been shown to slow the aging process in animals.

The pineal gland biologically senses that we are too old to reproduce around 45 years of age, and it begins to produce far lower levels of Melatonin. This signals all other systems that the Aging Process has begun. Some scientists believe that a woman's larger pineal gland is the reason why women age more slowly than men and why they live longer.

Restoring Melatonin levels also helps counter the immune-suppressing effect of the stress hormone Cortisol and restores our youthful ability to handle challenges with vitality and resilience. Melatonin also keeps the sex hormones at a youthful level and is a potent antioxidant.

### **Benefits of Melatonin:**

- Protects against cancer
- May slow the aging process
- Preserves circadian rhythm, jet lag
- Helps sleep disorders
- Broad-spectrum antioxidant
- Able to absorb free radicals many times its weight (mole per mole 8:1)
- Stabilizes cellular membranes increasing resistance to oxidative injury
- Increases efficiency of electron transport chain

## **HUMAN GROWTH HORMONE**

Human Growth Hormone is secreted by the pituitary gland, which is located in the center of the brain. It peaks during adolescence when growth is most rapid. *It is the primary hormone responsible for maintaining physical and mental health through tissue repair, healing, cell replacement, bone strength, brain function, enzyme production, and integrity of the hair, nails and skin.* By the age of 60, it is not uncommon to see declines in the order of 75% from more youthful levels.

At Southwest Age Intervention Institute, our goal is to increase the body's own production of Human Growth Hormone naturally, without the need for HGH injections, to give your body back the healing properties associated with this hormone.

### **Benefits of Human Growth Hormone**

- Improves virility and sex drive
- Improves sleep
- Decreases mood swings
- Improves memory
- Increases lean muscle mass and reduces body fat
- Promotes weight loss
- Improves skin tone
- Enhances self esteem and decreases anxiety
- Improves ability to handle stress
- Reduces fatigue
- Reduces aches and pains
- Improves blood sugar levels and metabolism