

Hormone Optimization

Thyroid Gland Function

The thyroid is a butterfly-shaped gland at the base of your neck. Normal thyroid gland function is essential for maintaining a normal metabolism, body temperature and energy level. Thyroid hormone dysfunction may be present without the diagnosis of “hypothyroidism.” This means that your thyroid may be making sufficient levels of hormone, but your body isn’t feeling the effects of it.. That may be due a problem in converting the T4 hormone to the more active T3 hormone or in decreased sensitivity of the receptors to T3. Symptoms of insufficient thyroid functioning include weight gain, fatigue, thinning hair, dry skin and constipation. Patient’s symptoms and several laboratory tests (free T3, free T4 and TSH) have to be considered in order to make a proper diagnosis. Benefits of optimizing thyroid hormones may include increase in energy, decrease in insulin resistance, weight loss, decrease in hair loss for women and improvement in body temperature. Studies have shown a potential increase in heart disease and LDL levels in “subclinical hypothyroidism.” Thyroid hormone has also been shown to improve symptoms of depression in studies when it was added to an anti-depressant.

DHEA

The scientific name for DHEA is dehydroepiandrosterone. It is a hormone made in the body and secreted by the adrenal gland. DHEA is a precursor to the female and male sex hormones estrogen and testosterone and also has effects all throughout the body. After age 30, DHEA levels begin to decrease. DHEA has drawn much attention for its possible benefits, among them slowing the aging process, and thus has become a popular nutritional supplement. However, scientific evidence supporting many of these claims is still unproven.

Benefits may include: reducing central fat, stimulating a healthy immune response, improving mood, lowering LDL cholesterol, lowering inflammation in arteries, slowing bone loss in older women, improving memory and mood, improvement in erectile dysfunction in men and sexual drive in women, and decreasing insulin resistance.

Estrogen / Progesterone

Estrogen and progesterone are the two main female hormones. Estrogen and progesterone can be out of balance for different reasons.

During menopause, levels of estrogen and progesterone decline. This change of hormonal status in the body causes a woman’s period to stop and is accompanied by a number of symptoms. Most frequently these include hot flashes and night sweats. With onset of menopause estrogen and progesterone levels frequently decline at a different rate. Progesterone level tends to decline first, and this decline can start as many as 10 years before your periods stop. This decrease of progesterone results in increased effects of estrogen, a condition frequently referred to as *estrogen dominance*. Prior to

menopause, symptoms of estrogen dominance can include heavy or irregular menstrual bleeding, fibrocystic breast disease (lumps in breast), PMS, anxiety and weight gain.

Progesterone: This is the main “sidekick” to estrogen and they complement each other well. Even women without a uterus still should use progesterone because progesterone also works at the bones, breasts, blood vessels and vagina. Progesterone is absolutely necessary in women to prevent a “thickened” lining in the uterus that can lead to vaginal bleeding and if untended, cancer of the uterus. Progesterone is also a calming hormone that leads to improved sleep which is an issue that many menopausal women encounter. Progesterone can be supplemented in the form of pills. Synthetic progestins such as Medroxyprogesterone or Provera®, which are frequent ingredients in birth control pills, do not have the same effects on the body and actually lead to weight gain and other unfavorable effects. There are also other synthetic progestins in hormone-replacements pills and patches that are also entirely different than natural progesterone.

Estrogen: Estrogen is a primarily female hormone that is produced by the ovaries and adrenal glands. The benefits of estrogen include protection against heart disease and stroke especially if initiated at menopause, a lower risk of Alzheimers, improvement in cholesterol, prevention of osteoporosis, decreased insulin resistance, prevention of vaginal dryness and treatment of menopausal symptoms. Men will also have higher levels of estrogen when their body is making testosterone. This is due to conversion of the testosterone into estrogen by the body. Higher levels of estrogen in men have the same benefits as those for women.

Testosterone

For men: Testosterone is the primary male hormone mainly produced by special cells in the testicles which is responsible for the growth of facial and pubic hair, proper development of muscle mass and strength, bone mass, as well as proper sexual functioning and maintaining a sex drive.

Low testosterone levels, also known as hypogonadism, can cause erectile dysfunction, fatigue, depression and osteoporosis. Clinical evidence also suggests that a low testosterone level leads to an increase in body fat, and chronic medical conditions such as type 2 diabetes and heart disease. Some research suggests that as many as 60% of overweight men have low testosterone level in their blood.

Testosterone replacement therapy can be considered in men with low testosterone levels and the presence of corresponding symptoms mentioned above. Testosterone therapy requires regular monitoring of testosterone levels and other laboratory data. Direct weight loss effect of testosterone hormone is minimal but proper replacement of low levels is necessary in order to improve energy, ability to exercise and ability to maintain proper muscle mass. Higher lean muscle mass increases amount of metabolically active tissue in the body and leads to improved metabolic rate and weight loss.

For women: Testosterone is also a naturally occurring hormone in women- made mostly by the ovaries, but also from the adrenal glands. It is an essential hormone for women as well and levels start to fall slowly after peaking in their 20's. After menopause, usually testosterone levels will be quite low. The most obvious symptom is lack of sexual desire. Benefits to supplementation can improve mood and energy, improve muscle mass, increase bone density and improve sexual functioning.

Melatonin:

Melatonin is a naturally occurring sleep aide that is released from the pineal gland in the brain. It is also a powerful antioxidant, immune booster and possible cancer inhibitor. It's production is influenced mostly by the night and day cycle- the circadian rhythm. Melatonin is different from other hormones given its small size. It doesn't need receptors to work, but can permeate almost every cell in the body. It is also important in maintaining the thymus gland which produces immune T-cells. It has also been found to be extremely safe and an excellent sleeping aide. Side effects can include grogginess or headaches with higher doses.

Vitamin D:

Vitamin D is one of many nutrients our bodies need to stay healthy. Among the vitamin's main functions, it helps the body:

- Absorb calcium and helps build bones and keep bones strong and healthy.
- Block the release of parathyroid hormone. This hormone reabsorbs bone tissue, which makes bones thin and brittle.

Vitamin D may also play a role in muscle function and the immune system. The immune system is your body's defense system. It helps protect it against infections and other illnesses. Taking vitamin D every day has been shown to reduce the risk of falling in older individuals.

Other ways vitamin D is thought to help us and how much we would need to take is an area of active research (and controversy). There have been studies to suggest that it might help prevent colon, prostate, and breast cancers. There is also some research that it might help prevent and treat diabetes, heart disease, high blood pressure, and multiple sclerosis. However, the results of many of these studies are either preliminary or under debate.

Most Americans are low in the Vitamin D and many are actually deficient.