

Hormones & Neurotransmitters

Like hormones, brain chemicals, called neurotransmitters, also act as messengers in the body. Neurotransmitters relay signals between nerve cells, called “neurons.” They are present throughout the body and are required for proper brain and body functions, including hormone release. Since neurotransmitter imbalances can lead to or exacerbate hormone imbalances, maintaining healthy neurotransmitter levels may help maintain normal hormone levels. Ask your healthcare practitioner if neurotransmitter testing is right for you.

Prescription Therapies

Many prescription drugs used to alter hormone levels either imitate hormones in the body (synthetic) or are identical to human hormones (bio-identical). These medications provide relief by elevating hormone activity through substitution or replacement. Some prescriptions do not address the hormone levels at all, but merely treat specific symptoms of hormone imbalances. Often these medications have limited effectiveness as they fail to address the underlying cause of the symptoms.

Improving Treatment

Most of the drug-based methods used to treat depression include chemicals that either imitate a neurotransmitter or redistribute existing neurotransmitters. Many affect serotonin, and some affect other neurotransmitters like GABA, norepinephrine, or dopamine. It is generally believed that drugs supporting serotonin signaling will be beneficial when depression results from a lack of serotonin and that GABA supporting drugs will be effective when a person’s symptoms are caused by a lack of GABA. While the idea of matching a drug to a chemical imbalance is generally supported, the vast majority of healthcare providers prescribe psychological drugs based only on a patient’s symptoms and few try to match a drug to a biochemical imbalance. This may explain why some drugs are ineffective for some patients.

Neurotransmitter function can also be supported with nutrient-based programs. Neurotransmitters are made from various components of food in a normal, healthy diet. Increasing the amounts of these dietary constituents can help maintain normal neurotransmitter levels.

While no program can guarantee success for everyone, it is worthwhile to effectively match a drug-based and/or nutrient-based program to the specific needs of the individual.

TAKE CHARGE OF YOUR HEALTH

If you are struggling with a health concern, ask your healthcare provider to do a simple urinary lab test to measure your neurotransmitter levels.

If your neurotransmitters lack balance, ask about NeuroScience’s natural, non-prescription approach to restoring neurotransmitter balance and supporting health.

Hormones

What is the connection between hormones and your nervous system?



www.NeuroRelief.com

©2007 NeuroScience Inc. No part of this document may be reproduced without the expressed permission of the copyright holder. These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

070323-PT-Z1026



About Hormones

Hormones are one of the many ways our body's cells "talk" with each other. Hormones are substances produced by specialized glands (like the ovaries, testes, and adrenals) and carry messages to distant parts of the body. You have hundreds of different hormones. Some important ones include the estrogens, progesterone, testosterone, cortisol, DHEA, dihydrotestosterone (DHT), melatonin, and thyroid hormones.

Both women and men produce estrogens, progesterone, and testosterone, but in differing amounts. Women produce more estrogens and progesterone, while men make more testosterone. These hormones cause feminine and masculine characteristics as well as enable fertility. These hormones also have other important roles in human health.

"Estrogen" is a term used to describe the 3 members of the estrogen family: estradiol, estrone, and estriol. Estradiol, also known as "E2", is the primary estrogen in the body. Estrone, also known as "E1", is a weaker form of estradiol. Estriol, also known as "E3", is the weakest of the estrogens and is produced in significant amounts during pregnancy.

"Androgen" is a term used to describe the members of the androgen family that influence the development of masculine characteristics. The most widely recognized androgens are testosterone, DHEA, and

DHT. DHEA serves as the building block for the primary androgen, Testosterone. DHT is considered the most potent androgen.

"Thyroid Hormones" refers to a group of hormones produced by the thyroid gland, including triiodothyronine (T³) and thyroxine (T⁴). Another hormone, called thyroid-stimulating hormone (TSH), is signals the thyroid gland to produce T³ and T⁴. T³ is much more potent than T⁴, however present in smaller quantities. Together, the thyroid hormones are responsible for increasing metabolism.

Hormones need to be properly regulated or various health concerns can arise. There are times during a person's life when hormone levels normally shift and change; this includes puberty, during menopause and pregnancy for women, and andropause for men. Many hormone levels also decline as we age. Genetic, environmental, and lifestyle factors can all play a role in hormone production as well as determine how well our bodies respond to naturally changing hormonal levels.



Hormones need to be properly regulated or various health concerns can arise

Sex Hormones

Estrogens (estradiol, estrone, estriol)

- Estrogens help maintain healthy reproductive tissues, breasts, and skin.
- In women, high estrogen levels can cause weight gain, breast tenderness, heavy menstruation, and lead to increased risk of certain cancers. Low estrogen levels can lead to hot flashes, vaginal dryness, and bone loss.
- In men, high estrogen, may contribute to prostate problems and reduce testosterone activity.

Androgens (testosterone, DHEA, DHT)

- Androgens help with the regeneration of skin, bones, muscles, and other tissues.
- Low DHEA levels can lead to fatigue, depressed mood, and reduced mental function.
- Testosterone helps maintain lean muscle, sex drive, and cardiovascular health in men and women.
- Low levels of dihydrotestosterone (DHT) have been linked to low libido.



Progesterone

- Progesterone is involved in reproduction, nervous system health, and mood.
- Progesterone supports and balances the effects of other sex hormones, especially estrogen.
- Low progesterone levels have been linked to many of the symptoms of menopause including hot flashes, sleep disturbances, and irritability.

Other Hormones

Cortisol is produced by the adrenal glands.

- Cortisol levels vary during the day and disruption in this rhythm may be associated with sleep disturbances and fatigue.
- Cortisol levels increase in response to stressors, like illness and emotional stress.
- High cortisol can suppress immune function.
- Constant stress can lead to very low cortisol levels.

Melatonin is produced in the brain.

- Melatonin helps maintain a proper sleep-wake cycle.
- Low levels are associated with sleep disturbances, mood disorders, and certain cancers.
- High levels can contribute to reproductive problems in women.

Thyroid Hormones (T³, T⁴, TSH)

- T³ and T⁴ are the primary regulators of metabolism.
- Low T³, T⁴ and TSH have been linked to fatigue, sluggishness and weight gain.
- High T³ and T⁴ can be indicative of a condition known as Grave's Disease, characterized by an enlargement of the thyroid gland known as goiter.

