



Why Hormones Matter and Three Ways to Mess Them Up

By Janice Stanger, PhD
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Hormones direct such vital functions as growth, reproduction, and metabolism. While hormonal imbalances get blamed for health problems from mood swings to weight gain to depression, some people intentionally increase their levels of certain hormones using supplements, to build muscle strength and restore lost youthfulness, for example. But the facts are complex—you need to understand what hormones are and how they work to avoid the dangers associated with hormone imbalance.

Hormones Are Chemical Messengers That Carry Information Through Your Body

Your body is an awesome machine composed of 100 trillion cells. Hormones are chemical messengers that flow through your blood, carrying information from one group of cells to another. This coordinated process keeps your body functioning.

Hormones are chemical messengers



- Made by endocrine glands and released into the blood
- The gut, heart, fat, skin, kidneys and more also have endocrine functions
- Regulate growth, development, metabolism, reproduction, mood, homeostasis

Most people have heard of hormones like insulin, thyroid, estrogen, testosterone, human growth hormone, cortisol, and vitamin D. There are dozens of others with indispensable roles in maintaining health. Many are made by endocrine glands, such as the thyroid, whose only job is to produce and secrete hormones. Other organs, such as the stomach, intestines, heart, and skin, produce hormones, in addition to performing other critical biological functions.

The process of maintaining all your body's vital functions within the range needed for survival is called homeostasis, and hormones play a major role in making

sure these requirements are met—no easy feat.

How Hormones Work

Hormones circulate in your blood, but they don't act on all cells. A hormone can target only cells that have a receptor that "fits" that particular hormone. This is often compared to a lock-and-key system: the receptor is the lock, and the hormone is the key. Some hormones have target receptors on most cells, while others act far more selectively. Once a hormone binds to its receptor, the targeted cell responds by taking action, making some change indicated by the hormone.

A Little is Good, but More Can Be Toxic Excess

A common misconception in understanding how your body functions is that if a little is good, more is better. More frequently the truth is that a little is good, and more is toxic excess.

Hormones illustrate this principle perfectly. Because hormones have such a profound influence on physical function, your body typically secretes them only in tiny amounts—often so tiny that special methods are needed to measure them. Even these small quantities are active only for a short time, and most are soon destroyed naturally by the body. A hormone may also be carried in the blood in an inactivated form or bound to another chemical that keeps it from reaching target receptors.

High levels of some hormones can have dire consequences. Additionally, hormones sometimes team up to regulate crucial body functions and maintain homeostasis. If the level of one hormone is off, others may get disrupted, and unhealthy effects then cascade.

Three Ways to Mess Up Your Hormones

Experts have concluded that more than half the people in Western societies develop a hormone-related disease at some point in their lives. These include diabetes (both type 1 and type 2), polycystic ovarian syndrome, osteoporosis, and hypothyroidism.

(continued)

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Your body is designed to precisely regulate the exact amounts of hormones and receptors it needs. However, hormone-related disease occurs for many reasons, and sometimes cannot be avoided. Prevention of these diseases may be possible if you avoid the three most common ways of messing up your hormones. Here they are, in reverse order of destructiveness.

1. Enjoying the worst of modern lifestyles.

Examples include staying indoors all day, sitting for hours at a stretch, not getting enough exercise or being inactive, sleeping too little or erratically, and frequently skipping meals. Contact with fragrances, herbicides, pesticides, and thousands of other manmade chemicals can disrupt your hormones as well.

2. Second guessing your body by supplementing with hormones that are not for clinical treatment of a diagnosed disease.

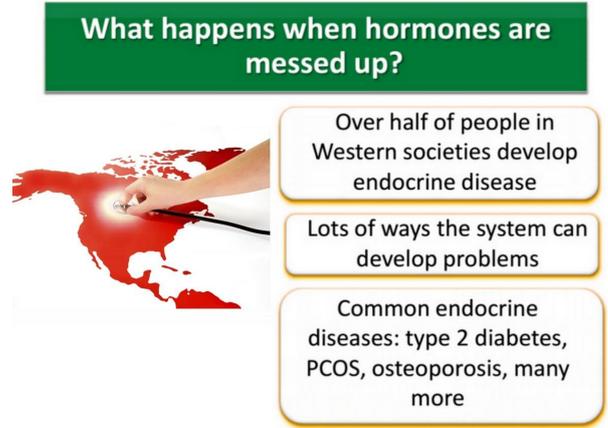
As you have learned, your body closely fine-tunes the hormones it produces and how it deploys them. Artificially high hormone levels as a result of supplementation can be profoundly dangerous. Use of hormones for general lifestyle goals such as “anti-aging,” building stronger muscles, losing weight, and enhancing sexuality can result in serious long-term consequences.

Supplementing with hormones should be a thoughtful decision made by a fully informed patient in partnership with a knowledgeable health team, and only after considering all options for treatment.

3. Eating animal foods.

All animal foods contain hormones (whether the animal was raised following organic practices or not). Animals, like humans, need hormones to maintain homeostasis and to reproduce, and animal hormones are often similar or identical to human hormones. In addition, your digestion and metabolism of animal foods can act to disrupt your own hormonal functioning in multiple direct and indirect ways.

Choosing to avoid these perils gives your body its best opportunity to maintain hormonal balance and healthy functioning.



What happens when hormones are messed up?

- Over half of people in Western societies develop endocrine disease
- Lots of ways the system can develop problems
- Common endocrine diseases: type 2 diabetes, PCOS, osteoporosis, many more

(Read the second article in this series, [3 Strategies to Keep Your Sex Hormones Balanced](#).)

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