

Hormones

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What are hormones?

Hormones are chemicals that **coordinate** different functions in your body by carrying messages through your blood to your organs, [skin](#), [muscles](#) and other tissues. These signals tell your body what to do and when to do it. Hormones are essential for life and your health.

Scientists have identified over 50 hormones in the human body so far.

Hormones and most of the tissues (mainly glands) that create and release them make up your [endocrine system](#). Hormones control many different bodily processes, including:

- [Metabolism](#).
- Homeostasis (constant internal balance), such as [blood pressure](#) and [blood](#)

sugar regulation, fluid (water) and electrolyte balance and body temperature.

- Growth and development
- Sleep-wake cycle.
- Mood.

What do hormones do?

Hormones are chemical messengers that affect and manage hundreds of bodily processes. Often, a bodily process involves a chain reaction of several different hormones.

A hormone will only act on a part of your body if it “fits” — if the cells in the target tissue have receptors that receive the message of the hormone. Think of a hormone as a key and the cells of its target tissue, such as an organ or fat tissue, as specially shaped locks. If the hormone fits the lock (receptor) on the cell wall, then it’ll work; the hormone will deliver a message that causes the target site to take a specific action.

Your body uses hormones for two types of communication. The first type is communication between two endocrine glands:

One gland releases a hormone, which stimulates another gland to change the levels of hormones that it's releasing. An example of this is the communication between your pituitary gland and thyroid. Your pituitary gland releases thyroid-stimulating hormone (TSH), which triggers your thyroid gland to release its hormones, which then affect various aspects of your body.

The second type of communication is between an endocrine gland and a target organ. An example of this is when your pancreas releases insulin, which then acts on your muscles and liver to help process glucose.

What conditions are caused by hormone issues? Some medical conditions are caused by hormone issues. For most hormones, having too much or too little of them causes symptoms and issues with your health. These imbalances often require treatment. Some of the most common hormone-related conditions include:

- Diabetes, including [Type 2 diabetes](#), [Type 1 diabetes](#) and [gestational diabetes](#).
- [Thyroid disease](#), including [hypothyroidism](#) (low thyroid hormone levels) and [hyperthyroidism](#) (high thyroid hormone levels).
- [Irregular menstruation \(periods\)](#), caused by [polycystic ovary syndrome \(PCOS\)](#), [amenorrhea](#) and [anovulation](#).
- [Female infertility](#).

- Male infertility — more specifically, low testosterone levels (hypogonadism).
- Obesity.