Hormone Health NETWORK
Keep your body in balance

Cushing's Syndrome

WHAT IS CUSHING'S SYNDROME?

Cushing's syndrome consists of the physical and mental changes that result from having too much cortisol in the blood for a long period of time. Cortisol is a steroid hormone produced by the adrenal glands, located above the kidneys. In normal amounts, cortisol helps the body

- Respond to stress
- Maintain blood pressure and cardiovascular function
- Keep the immune system in check
- Convert fat, carbohydrates, and proteins into energy

DID YOU KNOW?

Cortisol is sometimes called "the stress hormone" because one of its most important functions is to help the body respond to stress.

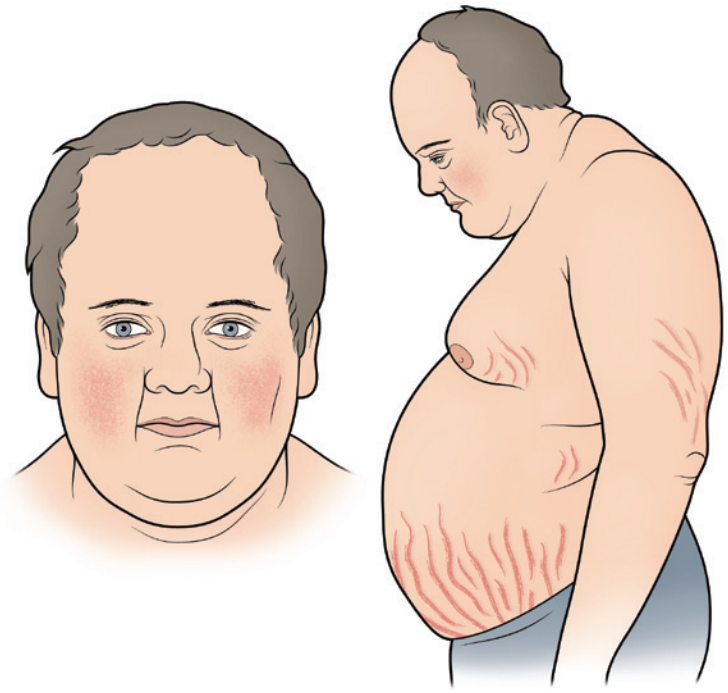
WHAT CAUSES CUSHING'S SYNDROME?

There are two types of Cushing's syndrome: exogenous (caused by factors outside the body) and endogenous (caused by factors within the body). The symptoms for both are the same. The only difference is how they are caused.

The most common is exogenous Cushing's syndrome and is found in people taking cortisol-like medications such as prednisone. These drugs are used to treat inflammatory disorders such as asthma and rheumatoid arthritis. They also suppress the immune system after an organ transplant. This type of Cushing's is temporary and goes away after the patient has finished taking the cortisol-like medications.

Endogenous Cushing's syndrome, in which the adrenal glands produce too much cortisol, is uncommon. It usually comes on slowly and can be difficult to diagnose. This type of Cushing's is most often caused by hormone-secreting tumors of the adrenal glands or the pituitary, a gland located at the base of the brain. In the adrenal glands, the tumor (usually non-cancerous) produces too much cortisol. In the pituitary, the tumor produces too much ACTH—the hormone that tells the adrenal glands to make cortisol. When the tumors form in the pituitary, the condition is often called Cushing's disease.

Most tumors that produce ACTH originate in the pituitary but sometimes non-pituitary tumors, usually in the lungs, can also produce too much ACTH and cause Cushing's syndrome.



SIGNS AND SYMPTOMS OF CUSHING'S SYNDROME

- Weight gain, especially in the upper body
- Rounded face and extra fat on the upper back and above the collarbones
- High blood sugar (diabetes)
- High blood pressure (hypertension)
- Thin bones (osteoporosis)
- Muscle loss and weakness
- Thin, fragile skin that bruises easily
- Purple-red stretch marks (usually over the abdomen and under the arms)
- Depression and difficulties thinking clearly
- Too much facial hair in women

HOW IS CUSHING'S SYNDROME DIAGNOSED?

Three tests are commonly used to diagnose Cushing's syndrome. One of the most sensitive tests measures cortisol levels in the saliva between 11:00 p.m. and midnight. A sample of saliva is collected in a small plastic container and sent to the laboratory for analysis. In healthy people, cortisol levels are very low during this period of time. In contrast, people with Cushing's syndrome have high levels.

Cortisol levels can also be measured in urine that has been collected over a 24-hour period.

In another screening test, people with suspected Cushing's syndrome have their cortisol levels measured the morning after taking a late-night dose of dexamethasone, a laboratory-made steroid. Normally, dexamethasone causes cortisol to drop to a very low level, but in people with Cushing's syndrome, this doesn't happen.

HOW IS CUSHING'S SYNDROME TREATED?

The treatment for Cushing's syndrome depends on the cause.

Exogenous Cushing's syndrome goes away after patients finish taking the cortisol-like medications they were using to treat another condition. Your doctor will determine when it is appropriate for you to slowly decrease and eventually stop using the medication.

For endogenous Cushing's syndrome, the initial approach is almost always surgery to remove the tumor that is causing high cortisol levels. Although surgery is usually successful, some people may also need medications that lower cortisol or radiation therapy to destroy remaining tumor cells. Some people must have both adrenal glands removed to control Cushing's syndrome.

Questions to ask your doctor

- **Which type of Cushing's syndrome do I have?**
- **What should I do if my Cushing's syndrome is caused by my medication?**
- **Will I need medicines to treat any of my symptoms?**
- **After treatment, how long will it take for my symptoms to go away?**
- **Should I see an endocrinologist for my care?**

RESOURCES

- Find-an Endocrinologist: *www.hormone.org* or call *1-800-HORMONE -(800-467-6663)*
- Cushing's Support and Research Foundation: *www.csrf.net*
- National Adrenal Diseases Foundation: *www.nadf.us/diseases/cushings.htm*
- National Endocrine and Metabolic Diseases Information Service: *http://endocrine.niddk.nih.gov*

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The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (*www.endo-society.org*). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at *www.hormone.org/Spanish*.