

Hormonal Chaos

Sometimes the pituitary gland does not function right, so the body gets upset and things go "berserk." Hypopituitarism (also called underactive pituitary gland) is a medical condition where the pituitary gland produces lower-than-normal levels of certain hormones. With hypopituitarism, one or more hormones controlling the different functions of the body are missing.

When a person has hypopituitarism, it means something is blocking hormones from being produced and released. Most often the cause is a pituitary **tumor**, also called an **adenoma**. Other causes may include damage to the hypothalamus (an area just above the gland), trauma to the head, a stroke, a brain tumor, a brain infection, or therapy such as brain surgery or radiation of the brain. Occasionally, the cause is a disease of the immune system or a metabolic disease.

No Simple Symptoms

Remember that the pituitary gland produces many different and important hormones. Some of these hormones are:

- Adrenocorticotrophic hormone (ACTH)
- Antidiuretic hormone (ADH)
- Follicle-stimulating hormone (FSH)
- Growth hormone
- Luteinizing hormone (LH)
- Prolactin
- Thyroid-stimulating hormone (TSH)

Symptoms of hypopituitarism vary depending on which hormones are not being produced and released. The symptoms can come on gradually over time or very suddenly overnight. Often the symptoms are like those of other medical conditions. It may take a few years to diagnose the problem because the symptoms may be varied and not very obvious.

For More Information

American Association of Clinical Endocrinologists
(www.aace.com)

Provides information about endocrine disorders and helps you locate an endocrinologist in your area.

The Hormone Foundation (www.hormone.org)

Answers general questions about various pituitary tumors, medical treatments, and hormone replacement therapy.

MEDLINEplus® Health Information
(www.medlineplus.gov)

Has a medical encyclopedia that contains facts about hypopituitarism and pituitary disorders in general.

National Institute of Child Health and Human Development (NICHD) (www.nichd.nih.gov)

Conducts research on the various processes that determine and maintain the health of individuals, families, and populations.

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) (www.niddk.nih.gov)

Provides links to national organizations serving patients concerned about endocrine and metabolic diseases.

Pituitary Network Association (www.pituitary.org)

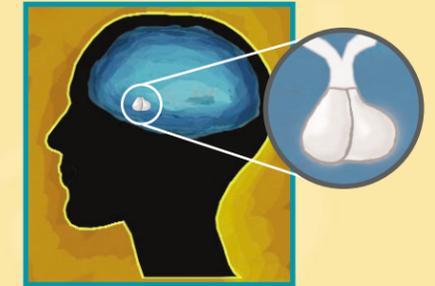
Provides information about ongoing clinical trials, medical resources and terminology, and links to other organizations.



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Living with HYPOPITUITARISM

Ease the Symptoms
Return to Living



A Pea That Packs a Punch

The pituitary is a **gland** found at the base of the brain. It is only the size of a large pea. It is made up of 2 parts: the front part (anterior) and the back part (posterior). Each part makes a number of different and important **hormones**. The pituitary gland is often called the "master gland" because it controls other glands and most body functions by keeping various hormones in the body in balance.

The pituitary gland is like the thermostat in your home. The thermostat where you live turns the heat on and off when it is cold. Just like that device, the pituitary gland sends out signals when things need to be changed. It sends out hormones through the bloodstream to other organs to help the body work right.

*"I'm tired of being sick.
I just want to be well again."*



What's in a Name?

In hypopituitarism, the name of the disorder can tell you something about the type of pituitary condition. For instance, patients with growth hormone deficiency lack growth hormone. Sometimes patients lack only 1 hormone. Other patients may lack all their pituitary hormones. This condition is called **panhypopituitarism**. But it is most common for patients with this pituitary disorder to be lacking 2 or more hormones. The following pituitary disorders are the most common hormone deficiencies.

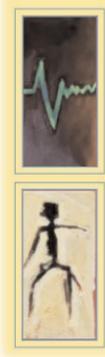
ACTH Deficiency

ACTH is made by the pituitary gland. It causes the adrenals (glands near the kidneys) to release cortisol. This hormone in turn helps maintain normal blood pressure, energy level, and metabolism. A shortage of cortisol is a serious problem and may become life-threatening. Symptoms of ACTH deficiency may include:

- Depression
- Fatigue
- Loss of pubic and armpit hair (women)
- Low blood pressure
- Nausea/vomiting
- Pale skin
- Weakness
- Weight loss

ADH Deficiency

ADH controls removal of water by the kidneys. Damage to the hypothalamus—an area just above the pituitary gland—can cause ADH deficiency. The deficiency can occur after surgery to remove a pituitary tumor and is usually temporary. When there is a shortage of ADH, patients have a condition called diabetes insipidus (not to be confused with diabetes mellitus or sugar diabetes). With diabetes insipidus, patients are thirsty and urinate a lot. Patients with hypopituitarism rarely have ADH deficiency.



Growth Hormone Deficiency

Growth hormone causes the growth of bones in children and teens. In adults it keeps the bones, muscle, and heart healthy, and it controls emotions. Untreated children who lack this hormone grow into very short adults. The harmful effects of growth hormone deficiency in adults were not fully known until the 1990s. Some of the symptoms may include weight gain, thin and dry skin, feeling weak and tired, trouble sleeping or exercising, depression, loneliness, anxiousness, and losing interest in sex and social activities.

Gonadotropin Deficiency

Gonadotropin deficiency is a condition where a person lacks the hormones that control the ovaries or testes and affect sexual function. A shortage of the hormones LH and FSH affect fertility in both men and women. Symptoms may include:

Men

- Anemia
- Decreased interest in sex
- Fatigue and weakness
- Impotence
- Loss of body hair
- Reduced sperm production
- Shriveled testes

Women

- Decreased interest in sex
- Fatigue and weakness
- Hot flashes
- Irregular or no menstrual periods
- Loss of body hair
- Osteoporosis
- Shriveled breasts
- Vaginal dryness, painful intercourse

Prolactin Deficiency

Prolactin causes the breasts to develop and breast milk to be produced. Prolactin deficiency is rare; it stops breast milk from being produced in women. It can occur in men, but there are no known symptoms.



TSH Deficiency

TSH causes the thyroid gland to release hormones that affect the body's metabolism. Lack of TSH can lead to an underactive thyroid gland and limited production of thyroid hormones. The condition is also called hypothyroidism. Symptoms of TSH deficiency may include not being able to tolerate the cold, as well as constipation, fatigue, weight gain, and pale, waxy, dry skin.

A Delicate Balancing Act

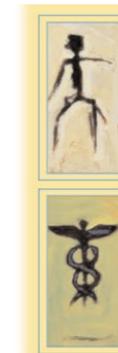
To diagnose hypopituitarism, your doctor has to find the cause of your symptoms. She may order a CT or MRI of your brain and do blood tests to measure your hormone levels. You may need to see an endocrinologist—a doctor specializing in diseases of the endocrine glands and their hormones—for proper diagnosis and treatment. You can find a list of endocrinologists on the Internet at www.pituitary.org.

Treatment is specific to the type of hormone(s) you are lacking. It may include hormone replacement therapy, surgery, radiotherapy, or all of these treatments. The goal is to help your pituitary gland function normally and to get your hormone levels back on track. You and your doctor can decide what's best.

Drugs commonly prescribed for hormone replacement therapy include:

- Desmopressin
- Estrogen
- Hydrocortisone
- Levothyroxine
- Prednisone
- Progesterone
- Somatotropin
- Testosterone
- Vasopressin

These drugs may have side effects. Your doctor should explain to you the side effects that may occur with your treatment. For some patients, extra precautions may be needed. For example, patients with ACTH deficiency may require additional doses of cortisone during times of major stress to prevent very low blood pressure (hypotension), severe shock, and death.



“Treatment has helped me get my life back on track.”

Follow-up Monitoring

Hypopituitarism is usually permanent and you will need lifelong treatment. By working with your doctor and other healthcare professionals you can ease the symptoms and return to living. Here is some advice from a treated patient with hypopituitarism:

- Keep regular appointments with your doctor
- Keep your family doctor aware of your condition and the return of any symptoms
- Have your hormone levels checked regularly
- Monitor how effective your treatment is, and keep track of any side effects
- Get screened regularly for diabetes
- Have your bone density checked regularly
- Have a Pap smear and mammogram every year

Glossary

adenoma - A noncancerous tumor made up of cells that form glands.

gland - An organ of the body that produces substances (hormones), which are released into the bloodstream. An example is the pituitary gland.

hormones - “Chemical messengers” that are made and released by endocrine glands and that target one or more parts of the body.

panhypopituitarism - A medical condition where there is little or no production of anterior pituitary hormones.

tumor - An abnormal growth that may be cancerous or noncancerous depending on the cell type. It may cause visual impairment or may be life-threatening depending on the location.