

PITUITARY GLAND'S DISORDERS

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Annotation: *The pituitary gland is a small, pea-sized gland that sits at the base of the brain. A pituitary gland disorder occurs when the pituitary gland makes too much or too little of certain hormones. The pituitary gland manages multiple hormones in the body. These allow the typical function of other glands and regulate: growth, [metabolism](#), stress response, sex organ function.*

Key words: *Adrenocorticotrophic hormone (ACTH), Antidiuretic hormone (ADH), Growth hormone (GH), Follicle-stimulating hormone (FSH), Luteinizing hormone (LH), Thyroid stimulating hormone (TSH), Prolactin*

INTRODUCTION

The pituitary gland is a pea size organ that sits inside the sella, a bony structure located in the middle of the head, beneath the brain and behind the nose and sinuses. The pituitary gland is considered the “master endocrine gland” because it produces and releases a number of hormones that control other glands in the body to regulate many biological functions. These hormones include:

- Adrenocorticotrophic hormone (ACTH)-stimulates the adrenal gland to make the hormone cortisol that is required for response to stress
- Antidiuretic hormone (ADH)-regulates water balance in the body
- Growth hormone (GH)-regulates growth
- Follicle-stimulating hormone (FSH)-regulates production of egg and sperm
- Luteinizing hormone (LH)-stimulates release of estrogen in women and testosterone in men
- Prolactin-stimulates breast milk production after pregnancy
- Thyroid stimulating hormone (TSH)-stimulates the thyroid gland to make thyroid hormone that is essential for regulation of metabolism, temperature and other bodily functions

Because of its location and role in regulating hormones within the body, any abnormality of the pituitary gland can be associated with a wide range of symptoms and disorders. For example, if the pituitary gland grows in size, this can cause pressure on the optic chiasm, a bundle of nerve fibers that communicates information from the eyes to the brain, which can lead to vision issues or headaches. Pituitary tumors are one of the more common disorders involving the pituitary gland. While these tumors are nearly all benign (noncancerous), they can still lead to hormonal abnormalities, causing increased or decreased hormone production and impacting overall health. Not all tumors will have symptoms, but



once they are discovered it is important that the patient undergo a comprehensive evaluation by an expert team to prevent the condition from worsening. Patients with pituitary disorders can have variable symptoms depending on the cause of the disorder. Pituitary tumors, cysts or other growths can cause headaches or problems with vision or in severe cases nausea and vomiting. Low levels of pituitary hormones can cause many symptoms such as fatigue, sexual dysfunction and changes in body composition, appearance or weight.

Pituitary disorders can affect people of any age or sex.

Inherited disorders: If you have a family history of certain genetic conditions, you have a higher chance of developing a pituitary disorder. Genetic conditions include:

- Multiple endocrine neoplasia, type I (MEN I)
- Familial isolated pituitary adenoma (FIPA)

Rare disorders: Many pituitary disorders are uncommon. At the same time, estimates for the number of people with acromegaly or Cushing disease/syndrome may be too low. Estimates include:

- About six to 11 people in 100,000 live with acromegaly, a disorder caused by too much growth hormone.
- About 10 to 15 people per million are diagnosed with Cushing disease/syndrome, caused by too much cortisol, each year in the U.S.
- Craniopharyngiomas, noncancerous pituitary tumors, affect one or two people per million each year in the U.S.

What causes pituitary disorders?

Noncancerous pituitary tumors are the main cause of pituitary disorders. Tumors often cause your body to make too much or too little of a hormone, leading to a disorder such as acromegaly.

Other common causes of pituitary disorders include:

- Head injury
- Bleeding in or near the pituitary gland
- Some medications and cancer treatments

Doctors classify each pituitary tumor based on whether it produces hormones.

- Secretory tumors, also called functioning adenomas, affect hormone production. Some people produce too much of a hormone, called hypersecretion. Others experience hyposecretion, or not having enough of a hormone.
- Nonsecretory tumors, also called nonfunctioning adenomas, do not affect hormone production. However, when they grow too large, they can press on the pituitary gland and other brain structures, causing headaches and vision problems.

Learn more about these pituitary disorders:

- Acromegaly
- Craniopharyngioma
- Cushing disease/syndrome
- Growth hormone deficiency
- Nonfunctioning pituitary adenoma
- Prolactinoma
- Rathke's cleft cyst

Acromegaly and gigantism

Acromegaly and gigantism both result from too much growth hormone in your system. Gigantism affects children and causes increased height. Acromegaly affects adults and causes enlarged bones in the hands, feet, and face. These conditions are rare. Acromegaly affects 50 to 70 people out of



1 million. Gigantism is even more rare. Acromegaly and gigantism are typically treatable with surgery, hormonal injections, or radiation.

Cushing syndrome

Cushing syndrome happens when you have increased levels of the hormone cortisol in your system. It occurs in 40 to 70 people out of 1 million Trusted Source. The most common symptoms of this condition are unintentional weight gain, increased bruising, and fatigue. Treatment options for Cushing syndrome include medications that decrease cortisol levels and surgery.

Prolactinoma

Prolactinoma is a benign pituitary tumor that makes the hormone prolactin. Too much of this hormone causes a condition called hyperprolactinemia. Prolactinoma is rare. It affects less than 30 out of 100,000 Trusted Source people, mostly younger women. This condition can cause infertility and other conditions that affect the reproductive system. Small prolactinomas usually don't need treatment. Medications and surgery can effectively relieve symptoms for larger and more bothersome tumors.

Empty sella syndrome

Empty sella syndrome affects the part of your skull that holds the pituitary gland. Although experts typically consider it rare, a small 2021 research review found that up to 8% of people might have this condition. The main symptoms of empty sella syndrome are headaches and high blood pressure. Empty sella syndrome usually doesn't require treatment unless it causes symptoms. In this case, you might need pain relief medications or surgery.

Hypopituitarism

Hypopituitarism is a rare condition Trusted Source, also known as an underactive pituitary gland. It occurs when your pituitary gland doesn't produce enough hormones. Symptoms of hypopituitarism depend on which hormones the condition affects. For example, it can cause a short stature or fertility health concerns. Treatment usually involves taking medications to supplement insufficient hormone production.

Diabetes insipidus

Diabetes insipidus happens when your kidneys can't conserve water. Low levels of antidiuretic hormone causes it. Diabetes insipidus affects around 1 in 25,000 people Trusted Source. The main symptoms of this condition are excessive thirst and increased urine output. Treatment of diabetes insipidus depends on the severity. In mild cases, you may not need treatment. In other cases, your doctor may prescribe you hormonal therapy or other medications.

Sheehan syndrome

Sheehan syndrome occurs when there's damage to a birthing parent's pituitary gland during childbirth. Blood loss or extremely low blood pressure during or after labor causes it. It's rare in the United States, but it's more common Trusted Source in developing countries. Symptoms include difficulty breastfeeding and irregular menstrual periods, among others. Treatment typically includes medications, like corticosteroids, and hormonal therapies.

Pituitary apoplexy

Pituitary apoplexy happens when you have bleeding or blood loss in your pituitary gland from a benign tumor called a pituitary adenoma. It can affect up to 25% of people Trusted Source with these tumors. The most common symptoms are severe headaches and blurry vision. Treatments for pituitary apoplexy include medications, like corticosteroids, and surgery.

Rathke cleft cyst

This is a benign pituitary gland tumor. It's similar to pituitary adenoma but is congenital (present at birth). It's quite common but rarely causes any symptoms, so most people don't know that they have



this condition. Symptoms may include vision disturbances and frequent headaches. Only bothersome Rathke cleft cysts require treatment, which is usually endoscopic surgery.

Craniopharyngioma

Craniopharyngioma is a benign, slow-growing tumor. Each year, less than 2 people out of 1 million Trusted Source (usually children) receive the diagnosis of this condition. It can affect a child's growth and development. Vision difficulties can happen in both children and adults. Brain surgery is the most common way to treat this condition.

Pituitary cancer

Most pituitary gland tumors are benign. But in rare cases, pituitary cancer, can also occur. There are several types of this condition, each producing a specific hormone. Symptoms depend on the type but may include high blood pressure and excessive sweating. Treatment may include surgery, chemotherapy, or hormonal therapy.

Hypophysitis

This condition causes inflammation in your pituitary gland. It's extremely rare. Symptoms include vision changes and headaches. Not everyone needs treatment for hypophysitis. But if your symptoms are bothersome, a doctor may recommend immunosuppressant drugs or — in a particularly severe case — surgery.

Specific symptoms often depend on the disorder and hormone affected. A tumor's location and size play roles, too. Common symptoms include:

- Anxiety or depression
- Diabetes
- Hair loss
- High blood pressure
- Irregular menstrual periods
- Unexpected breast milk production
- Low energy or low sex drive
- Stunted growth or unusual growth spurts
- Unexplained weight gain
- Vision changes

All in all, conditions that affect your pituitary gland often occur due to noncancerous tumors. Although many people can have them, they rarely cause any health concerns and don't require treatment. If you experience frequent headaches, vision difficulties, and other worrisome symptoms, be sure to speak with a medical professional.

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