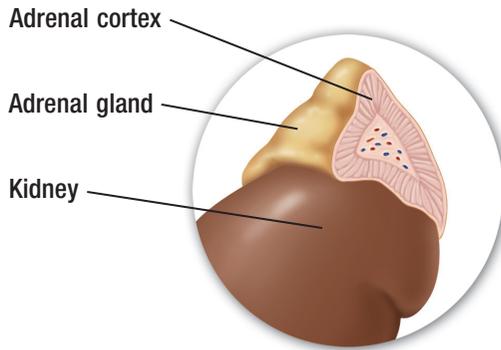


# Addison's Disease



Hyperpigmentation



## Chronic Adrenal Insufficiency

Addison's disease, a disorder of the adrenal glands, is characterized by a deficiency of hormones the body needs to regulate most bodily systems. One of the adrenal hormones affected by Addison's disease is cortisol.

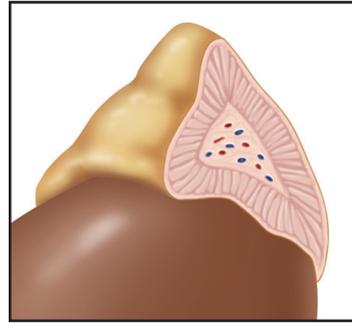
Cortisol regulates the body's ability to respond to stress, change food into usable energy, and mount an inflammatory response when needed. Another adrenal hormone that may be lacking in patients with Addison's disease is aldosterone, which regulates the balance of sodium, potassium, water, and blood pressure.

When the adrenal glands do not function properly, the result is a lack of adrenal hormones and a condition known as adrenal insufficiency. The problem may be caused by damage to the adrenal glands, usually from autoimmune disease, infection, or cancer. The condition also may result from damage to the pituitary gland, an endocrine gland that produces the hormone ACTH. ACTH stimulates the adrenal gland to produce its hormones correctly; if the pituitary gland fails to produce enough ACTH, the adrenal glands fail to produce enough of their own hormones.

Symptoms of Addison's disease include fatigue, muscle weakness, low blood pressure, low blood sugar, nausea and vomiting, salt craving, loss of appetite, weight loss, and darkening of the skin. Symptoms develop over a period of months; often, Addison's disease is not diagnosed until it has progressed far beyond the early stage. During a stressful period, symptoms can worsen quickly. This situation, known as Addisonian crisis, can rapidly cause more serious symptoms and may be fatal if not recognized and treated promptly.

After laboratory tests have confirmed the diagnosis, Addison's disease is treated with replacement hormones. Hydrocortisone oral tablets replace the body's natural cortisol, and, if needed, fludrocortisone oral tablets replace the body's natural aldosterone. Daily oral hormone supplements are necessary throughout the patient's lifetime. An injectable form of hydrocortisone may be carried for emergency use during periods of stress.

## Daily Lifelong Therapy With Oral Replacement Hormones Is Necessary



*In this disorder, the adrenal glands fail to produce enough hormones to control the systems of the body.*

Addison's disease is a disorder of the adrenal glands that results in a deficiency of important hormones necessary for regulating almost all bodily systems. The adrenal glands are small endocrine glands located above the kidneys that produce a wide variety of hormones. Most commonly, Addison's disease develops slowly over a period of months during a person's middle age. The causes of Addison's disease are varied, and it is not always clear what triggers the destruction of the adrenal glands or the pituitary gland, which also may be involved. People with certain medical conditions have a greater risk of developing the autoimmune type of adrenal gland destruction. These conditions include type 1 diabetes, thyroiditis, hypopituitarism, hypoparathyroidism, pernicious anemia, and Graves' disease, among others.

### Diagnosis

Most patients with Addison's disease gradually become aware of symptoms that warn them that something is wrong, see a physician, receive a diagnosis, and begin therapy before serious symptoms occur. The diagnosis of Addison's disease is difficult during its early stage because symptoms can mimic other conditions. The most unique symptom is darkening of the skin, even skin that is not exposed to the sun. A definitive diagnosis is made based on laboratory test results, which reveal the amount of cortisol (hormone produced by the adrenal glands), ACTH (hormone produced by the pituitary gland), sodium, and potassium in the blood, as well as the presence of an autoimmune disease. A CT scan of the abdomen may be ordered to determine whether the adrenal glands or the pituitary gland is damaged.

Some patients are unaware that they have Addison's disease until an *addisonian crisis* (worsening of symptoms) occurs. Crisis symptoms include sharp pains in the lower half of the body, severe vomiting, diarrhea, dehydration, problems breathing, low blood pressure, and fainting. These symptoms are serious, and may be fatal if hormone injections, salt, and fluids are not administered immediately.

### Treatment

Oral replacement hormones are maintenance therapy for patients with Addison's disease, and they must be taken daily for life. Depending on the hormone deficiency, a cortisol replacement medication such as hydrocortisone is prescribed, with or without an aldosterone replacement medication such as fludrocortisone. The dose of these medications must be adjusted during times of increased stress, such as infection, surgery, trauma, or emotional strain. Some patients carry injectable hydrocortisone to self-administer in an emergency.

### Emergency Situations

Patients with Addison's disease are frequently advised by their doctor to carry identification or wear a bracelet alerting medical personnel to their condition. Patients should carry instructions and an injectable corticosteroid for administration in an emergency. Additionally, patients with Addison's disease should receive education regarding the steps to take when vomiting, diarrhea, or infection occurs. Patients should see their doctor regularly, as well as between visits during periods of stress, in case their medication needs adjustment.

Your pharmacist can answer your questions about the medications that are used to treat Addison's disease.