



Addison's disease is a disorder in which the adrenal glands--which sit on top of the kidneys--do not produce enough of the hormones cortisol and aldosterone. (Hormones are chemicals that control the function of tissues or organs.) Cortisol helps the body respond to stress, including the stress of illness, injury, or surgery. It also helps maintain blood pressure, heart function, the immune system, and blood glucose (sugar) levels.

Aldosterone affects the balance of sodium and potassium in the blood, which in turn controls the amount of fluid the kidneys remove as urine, which affects blood volume and blood pressure.

Addison's disease is also called "primary adrenal insufficiency." A related disorder, "secondary adrenal insufficiency," occurs when the pituitary, a small gland at the base of the brain, does not secrete enough adrenocorticotropic hormone (ACTH), which activates the adrenal glands to produce cortisol.

What causes Addison's disease?

Addison's disease is caused by an autoimmune response, which occurs when the body's immune system (which protects it from infection) assaults its own organs and tissues. With Addison's disease, the immune system attacks the outer portion of the adrenal glands (the cortex), where cortisol and aldosterone are made.

Other causes of Addison's disease include:

- injury to the adrenal glands
- infection, including tuberculosis, HIV/AIDS-related infections, and fungal infections
- cancer cells from another part of the body that have invaded the adrenal glands
- bleeding into the adrenal glands
- surgical removal of the adrenal glands
- amyloidosis (abnormal buildup of certain proteins in the organs)
- genetic defects

How common is Addison's disease?

In the United States, Addison's disease affects 1 in 100,000 people. It occurs in both men and women equally and in all age groups, but is most common in the 30-50 year-old age range.

What are the symptoms of Addison's disease?

The damage to the adrenal glands happens slowly over time, and symptoms occur gradually. The most common symptoms include:

- abdominal pain
- abnormal menstrual periods
- craving for salty food
- dehydration
- depression
- diarrhea
- irritability
- lightheadedness or dizziness when standing up
- loss of appetite
- low blood glucose
- low blood pressure
- muscle weakness
- nausea
- patches of dark skin, especially around scars, skin folds, and joints
- sensitivity to cold
- unexplained weight loss
- vomiting
- worsening fatigue (extreme tiredness)

In some cases – such as an injury, illness, or time of intense stress – symptoms can come on quickly and cause a serious event called an Addisonian crisis, or acute adrenal insufficiency. An Addisonian crisis is a medical emergency. If it is not treated, it can lead to shock and death. Symptoms of an Addisonian crisis include:

- feeling restless, confused, or afraid, or other mental changes
- dehydration
- extreme weakness
- having trouble staying awake, or a total loss of consciousness
- high fever
- lightheadedness or feeling faint

- paleness
- severe vomiting and diarrhea
- sudden, deep pain in the lower back, belly, or legs

How is Addison's disease diagnosed?

To determine if you have Addison's disease, your doctor might use the following:

- History and physical – Your doctor will review your symptoms and perform a physical exam. Dark patches on your skin might be a clue for your doctor to consider testing for Addison's disease.
- Blood tests – to measure the levels of sodium, potassium, cortisol, and ACTH in your blood
- ACTH stimulation test – This tests the adrenal glands' response after you are given a shot of artificial ACTH. If the adrenal glands produce low levels of cortisol after the shot, they may not be functioning properly.
- X-rays – These may be done to look for calcium deposits on the adrenal glands.
- Computed tomography (CT scan) – Computed tomography uses computers to combine many X-ray images into cross-sectional views. A CT scan might be done to evaluate the adrenals and/or pituitary gland. For example, it can show if the immune system has damaged the adrenal glands or if the glands are infected.

How is Addison's disease treated?

To treat Addison's disease, your doctor may prescribe hormones similar to those made by the adrenal glands; for instance, hydrocortisone pills to replace cortisol. If you are also lacking aldosterone, you may receive fludrocortisone acetate pills. If you are taking fludrocortisone, your doctor might tell you to increase your salt intake, especially in hot and humid weather and after vigorous exercise. In emergencies and during surgery, the medicine is given intravenously (directly into a vein).

What is the outlook for people with Addison's disease?

People who have Addison's disease will need to take medicine for the rest of their lives and can live normal healthy lives.

If you have Addison's disease, you should carry an identification card and wear a bracelet at all times to let medical personnel know you have the disease.

Always have extra medicine on hand in case you become ill and need more. Ask your doctor about keeping a shot of cortisol for emergencies, and be sure someone with you knows how to give you the shot.

When should I call my health care provider?

Call your health care provider if you have a major stress – such as an injury, illness, or the death of a loved one – because you might need an adjustment to your medicine. Also, seek medical attention right away if you have any of the symptoms of an Addisonian crisis.