



[cancer.org](http://cancer.org) | 1.800.227.2345

---

## About Adrenal Cancer

Get an overview of adrenal cancer and the latest key statistics in the US.

### Overview

If you have been diagnosed with adrenal cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Adrenal Cancer?](#)

### Research and Statistics

See the latest estimates for new cases of adrenal cancer and deaths in the US and what research is currently being done.

- [Key Statistics for Adrenal Cancer](#)
- [What's New in Adrenal Cancer Research?](#)

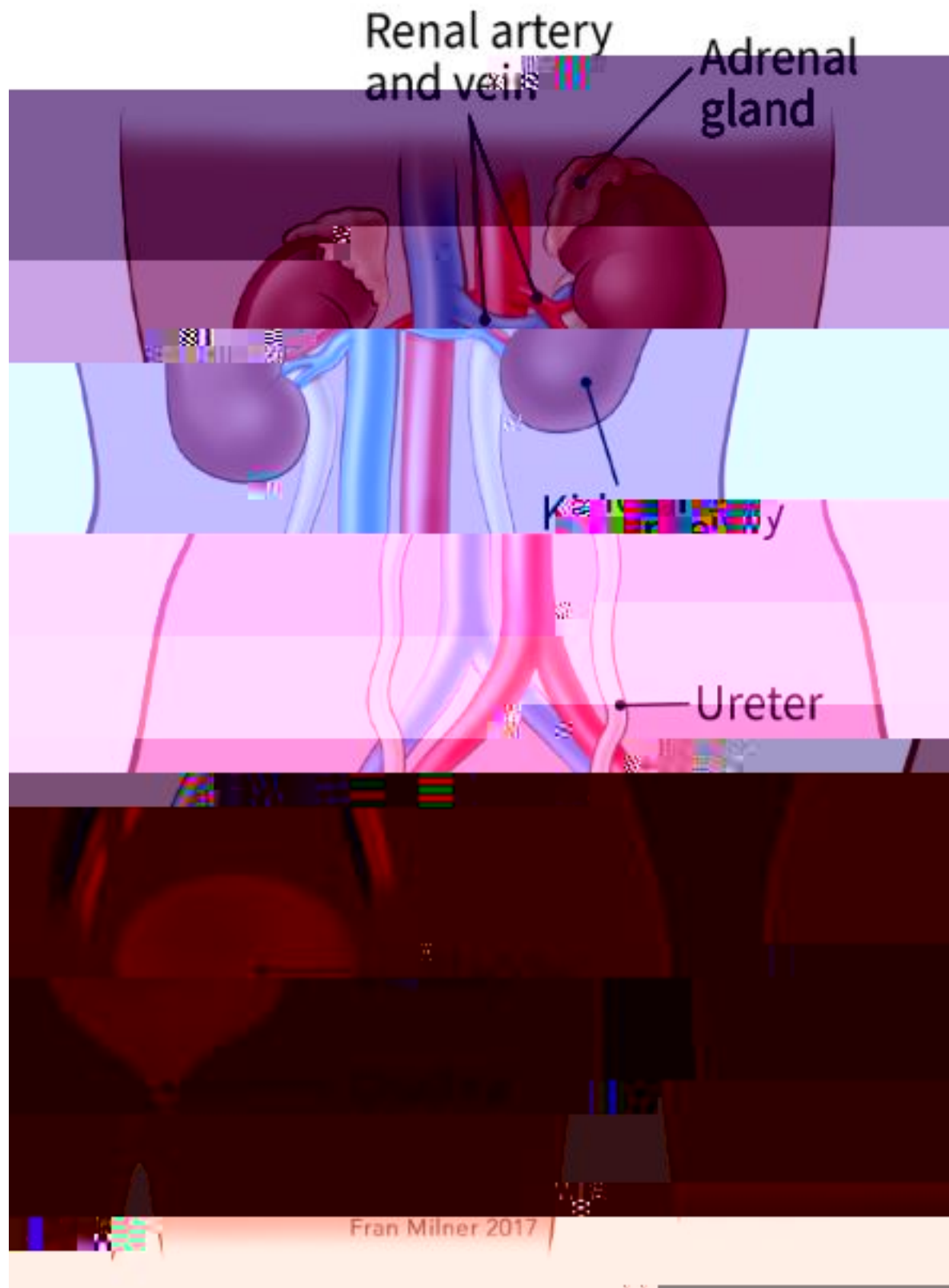
---

## What Is Adrenal Cancer?

The adrenals are small glands that sit on top of each of the kidneys. The kidneys are located deep inside the upper part of the abdomen.

- [About the adrenal glands](#)
- [Adrenocortical tumors](#)

- Adrenocortical adenomas
- Adrenocortical carcinomas (adrenal cancer)
- Metastatic cancer in the adrenal gland



## [What Is Cancer?](#) <sup>1</sup>

Cancer starts when cells in the body begin to grow out of control. Cells in nearly any part of the body can become cancer cells. Learn more here.

## [Anatomy Gallery: Endocrine System](#) <sup>2</sup>

Explore our 3D interactive tour of the endocrine system.

## About the adrenal glands

Each adrenal gland has 2 parts. The outer part, the cortex, is where most tumors develop. The cortex makes certain hormones for the body. These hormones all have a similar chemical structure and are called **steroids**:

- **Cortisol** causes changes in metabolism to help the body to handle stress.
- **Aldosterone** helps the kidneys regulate the amount of salt in the blood and helps regulate blood pressure.
- **Adrenal androgens**, also called dehydroepiandrosterone or DHEA, can be converted to the sex hormones, estrogen and testosterone in other parts of the body. The amount of these hormones, however, that results from conversion of adrenal androgens is small compared to what is made in the other places in the body. In men, the testicles produce most of the androgens (male hormones). The ovaries produce most of the estrogens (female hormones) in women.

The inner part of the adrenal gland, the medulla, is really an extension of the nervous system. Nervous system hormones such as norepinephrine, epinephrine, and dopamine are made in the medulla. Tumors and cancers that start in the adrenal medulla include **pheochromocytomas** (which most often are benign) and **neuroblastomas**.

Tumors and cancers of the adrenal

---

either:

- **Adrenocortical adenomas** (Benign or non-cancerous tumors that don't spread beyond the adrenal gland.)
- **Adrenocortical carcinomas** (Malignant or cancerous tumors that can spread beyond the adrenal gland.)

In general, the findings on imaging scans can help doctors understand if the tumor is an adenoma or carcinoma, based on the tumor's size and how it looks (smooth vs. irregular, the lack or presence of fat, etc.).

## Adrenocortical adenomas

Most adrenal cortex tumors are benign adenomas. These tumors are usually small (less than 4 cm) and occur in only one adrenal gland. Most people with adrenal adenomas have no symptoms and don't know that they have an adrenal tumor.

Adrenocortical adenomas are categorized by whether they make hormones (functional) or not (non-functional). Most adenomas are non-functional. However, the small percentage of adrenocortical adenomas that do make hormones can cause certain medical conditions, such as:

- Cushing's syndrome (high levels of cortisol)
- Primary aldosteronism (high levels of aldosterone)
- Androgen and estrogen-secreting tumors

The excess hormones can cause the same symptoms as those from adrenocortical carcinomas (cancers). To learn more, see [Signs and Symptoms of Adrenal Cancers](#)<sup>5</sup>.

**Treatment:** How an adrenocortical adenoma is treated depends on:

- If it is causing symptoms, and
- If there are concerning findings on imaging scans

If an0 g ET BT 1 0 0 1 95.35 366u0 g ET BT 1 0 0 1 d.35 366u0 g ET BT 1 0 0 1 d.35 366u0 g E

Surgery is considered if the imaging scan shows an adenoma has concerning features, such as:

- Size greater than 4 cm (almost 1 ½ inches)
- Relatively low percentage of fat (called **lipid-poor**)
- Irregular borders and appearance

If an adenoma is not causing any symptoms, is smaller than 4 cm, and has no concerning features on scans, it is generally just watched. Based on the way it looks when the scan is repeated 3 months to 24 months after diagnosis, if the adenoma has gotten larger or is larger than 4 cm, surgery would be considered. If the tumor is unchanged and the patient does not have any symptoms from it, it might not need to be treated at all.

## **Adrenocortical carcinomas (adrenal cancer)**

Tumors that form from the adrenal cortex and can spread to other parts of the body are called **adrenocortical carcinomas**. They are also called **adrenal cancers**. Some of the adrenal cancers make excess hormones (functional) and can cause the same symptoms as functional adrenocortical adenomas.

To learn more, see [Signs and Symptoms of Adrenal Cancers](#)<sup>6</sup>.

Adrenal cancers that do not make hormones (non-functional) may start causing symptoms when they grow to a certain size and press on nearby structures, causing abdominal pain.

**Treatment:** How an adrenal cancer is treated depends on:

- If it has spread to other parts of the body
- If the tumor can safely be removed
- If the patient can tolerate surgery

If the cancer has not spread to other parts of the body, the tumor can be removed. If the tumor can safely be removed and the patient can tolerate such a procedure, then removal of the adrenal gland is commonly advised. This procedure is called an [adrenalectomy](#)<sup>7</sup>.

However, if the cancer does not meet all the above criteria, then an adrenalectomy is generally not advised. Sometimes, an adrenal tumor may be removed surgically to treat

symptoms such as pain or high hormone levels.

If surgery is not an option for you, your doctor may discuss other options such as close observation with no intervention, localized therapy such as radiation or ablation, or enrolling in a clinical trial.

## Metastatic cancer in the adrenal gland

Most cancers found in the adrenal gland did not start there and are not primary adrenal cancers. Instead, they started in other organs or tissues and then spread (metastasized) through the bloodstream to the adrenal glands. For example, lung cancers, melanomas, and breast cancers may spread to the adrenals. When other cancers spread to the adrenals, they are not considered adrenal cancer. They are named and treated based on the place where they started.

## Hyperlinks

1. [www.cancer.org/cancer/understanding-cancer/what-is-cancer.html](http://www.cancer.org/cancer/understanding-cancer/what-is-cancer.html)
2. [www.cancer.org/cancer/understanding-cancer/anatomy-gallery/endocrine-system.html](http://www.cancer.org/cancer/understanding-cancer/anatomy-gallery/endocrine-system.html)
3. [www.cancer.org/cancer/types/neuroblastoma.html](http://www.cancer.org/cancer/types/neuroblastoma.html)
4. [www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/imaging-radiology-tests-for-cancer.html](http://www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/imaging-radiology-tests-for-cancer.html)
5. [www.cancer.org/cancer/types/adrenal-cancer/detection-diagnosis-staging/signs-symptoms.html](http://www.cancer.org/cancer/types/adrenal-cancer/detection-diagnosis-staging/signs-symptoms.html)
6. [www.cancer.org/cancer/types/adrenal-cancer/detection-diagnosis-staging/signs-symptoms.html](http://www.cancer.org/cancer/types/adrenal-cancer/detection-diagnosis-staging/signs-symptoms.html)
7. [www.cancer.org/cancer/types/adrenal-cancer/treating/surgery.html](http://www.cancer.org/cancer/types/adrenal-cancer/treating/surgery.html)

## References

Lirov R, Tobias E, Lerario AM, Hammer GD. Adrenal tumors In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins 2015: Chapter 84.

Schneider DF, Mazeh H, Lubner SJ, Jaume JC, Chen H. Cancer of the endocrine system In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds.

---

## **Key Statistics for Adrenal Cancer**





- [Chemotherapy](#)
- [Targeted therapy](#)
- [Genetics](#)

## Chemotherapy

Although adrenal cancer can be hard to study, experts are looking for new drugs that may help, as well as looking at the value of current treatments.

Ongoing studies are looking at which chemotherapy combinations would allow for the best treatment outcomes, but the lowest risk for side effects.

## Targeted therapy

Researchers are working to understand the genetic changes that cause adrenal cancers so that newer treatments to target these changes can be found.

[Targeted therapy](#)<sup>1</sup> uses drugs to attack the programming that makes cancer cells different from normal, healthy cells. Each type of targeted therapy works differently, but all alter the way a cancer cell grows, divides, repairs itself, or interacts with other cells.

Researchers are continuing to study targeted drugs, such as IGF1R inhibitors, VEGFR inhibitors, and EGFR inhibitors. So far, they have not found a way to make them very effective.

**effective. Researchers are conti5 72 3vC 0.g /scer can 2 1n244 hothwer treainitsrt**

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/treatment-types/targeted-therapy.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/targeted-therapy.html)
2. [www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes/lynch-syndrome.html](http://www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes/lynch-syndrome.html)
3. [www.cancer.org/cancer/types/adrenal-cancer/causes-risks-prevention/risk-factors.html](http://www.cancer.org/cancer/types/adrenal-cancer/causes-risks-prevention/risk-factors.html)

## References

Bancos I, Prete A. Approach to the Patient With Adrenal Incidentaloma. *J Clin Endocrinol Metab.* 2021 Oct 21;106(11):3331-3353.

Corssmit EPM, Dekkers OM. Screening in adrenal tumors. *Curr Opin Oncol.* 2019 May;31(3):243-246.

Ghosh C, Hu J, Kebebew E. Advances in translational research of the rare cancer type adrenocortical carcinoma. *Nat Rev Cancer.* 2023 Dec;23(12):805-824. Epub 2023 Oct 19. PMID: 37857840.

Zheng S, Cherniack AD, Dewal N, Moffitt RA, Danilova L, et al. Cancer Genome Atlas Research Network; Hammer GD, Giordano TJ, Verhaak RGW. Comprehensive Pan-Genomic Characterization of Adrenocortical Carcinoma. *Cancer Cell.* 2016 May 9;29(5):723-736. doi: 10.1016/j.ccell.2016.04.002. Erratum in: *Cancer Cell.* 2016 Aug 8;30(2):363.

Last Revised: October 1, 2024

## Written by

American Cancer Society medical and editorial content team  
(<https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html>)

Developed by the [redacted] with medical review and contribution by the American Society of Clinical Oncology (ASCO).

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy ([www.cancer.org/about-us/policies/content-usage.html](http://www.cancer.org/about-us/policies/content-usage.html)).

**cancer.org | 1.800.227.2345**