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.

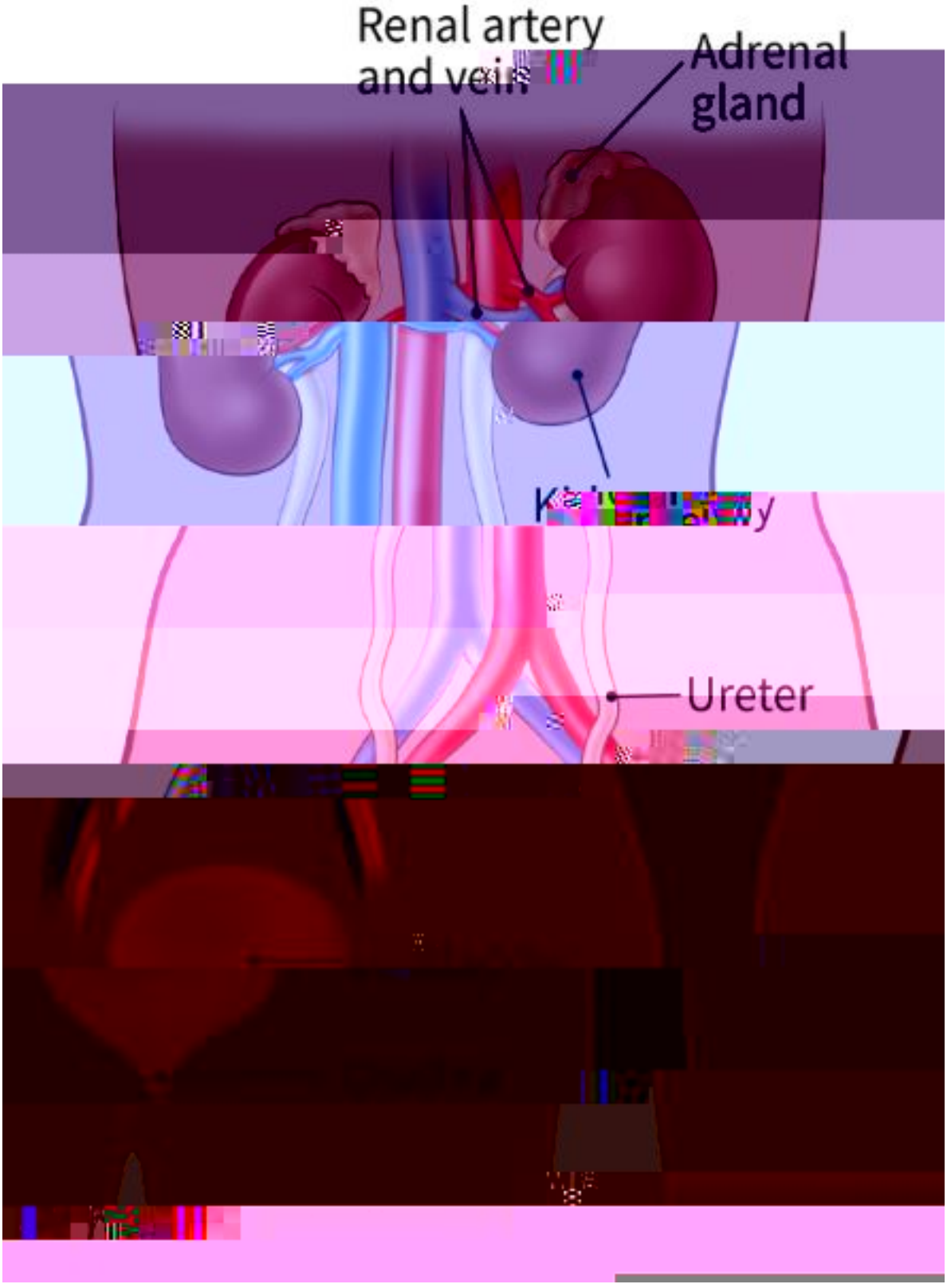
- Key Statistics for Adrenal Cancer
- What's New in Adrenal Cancer Research?

What Is Adrenal Cancer?

- About the adrenal glands
- Adrenal cortex tumors

About the adrenal glands

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


Renal artery
and vein
Adrenal
gland
Ureter

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** can be converted to more common forms of the sex hormones estrogen and testosterone in other parts of the body. The amount of these hormones that result from conversion of adrenal androgens is small compared to what is made in other parts of the body. The testicles produce most of the androgens (male hormones) in men. 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 and epinephrine (also called **adrenaline**) are made in the medulla. Tumors and cancers that start in the adrenal medulla include **pheochromocytomas** (which are most often benign) and **neuroblastomas**.

Tumors and cancers of the adrenal cortex are covered here, but tumors of the adrenal medulla are not. Neuroblastomas[1] are covered separately elsewhere.

Adrenal cortex tumors

The 2 main types of adrenal cortex tumors are:

- **Adenomas** (benign or non-cancerous tumors)
- **Carcinomas** (malignant or cancerous tumors)

These types of tumors can sometimes be hard to tell apart when the cells are looked at under the microscope. Sometimes the only way to know for sure that an adrenal tumor is a cancer is when it spreads to lymph nodes or other organs and tissues. Adenomas do not spread outside the adrenal gland.

Adrenal cortex adenomas

Most tumors of the adrenal cortex are benign tumors known as adenomas. These tumors are usually less than 2 inches (5 centimeters) across. They usually occur in only

one adrenal gland, but sometimes both.

Most people with adrenal adenomas have no symptoms and don't know that they have an adrenal tumor. Some of these adenomas are discovered by accident (incidentally) when CT or MRI scans[2] of the abdomen are done because of an unrelated health problem. About 5% of people who have a CT scan of the abdomen are found to have an adrenal tumor that was not suspected. Many of these are nonfunctional, meaning that they don't make adrenal hormones. Sometimes these tumors are known by the nickname incidentalomas because they aren't causing problems and were only found by accident.

Some adenomas make too many adrenal steroid hormones. Sometimes the excess hormones can cause the same symptoms as those from adrenal carcinomas (cancers). To learn more, see Signs and Symptoms of Adrenal Cancers[3]. Adenomas are much more likely than carcinomas to make high levels of aldosterone, which can cause high blood pressure.

Treatment: Adenomas can be cured by removing the adrenal gland that contains the adenoma. Some adrenal adenomas that cause hormone-related symptoms can be treated effectively with drugs that block the production or actions of these hormones. This may be the best treatment choice for patients with other serious medical problems who might not be able to have a major operation.

The treatment of an adenoma depends on the chance that it may be a cancer and whether or not it is raising hormone levels. When an adrenal tumor is found accidentally, tests are often done to see if it is making hormones. If it is, surgery[4] is often recommended. Otherwise, surgery may only be recommended if it is likely to be a cancer. Small tumors are less likely to be cancer, and are often watched but not treated right away. The CT (or MRI) scan can be repeated in 6 to 24 months to see if the tumor has grown. If it has, it may need to be removed. If it hasn't grown, hormone levels will be watched over the next few years. If the tumor stays small and doesn't make any hormones, it might not need to be treated at all.

Adrenal cortex cancer

The type of cancer that develops in the cortex of the adrenal gland is called adrenal cortical carcinoma or justadrenal cancer. This rare type of cancer is also known as adrenocortical cancer (or carcinoma).

Adrenal cancer most often is discovered when:

- It is found accidentally on an imaging test done to look for something else.

- It makes hormones that cause changes such as weight gain and fluid retention, early puberty in children, or excess facial or body hair growth in women.
- It starts causing symptoms because it has gotten very large. Large tumors can press on other organs in the abdomen, causing pain or a feeling of fullness. Generally, adrenal cancers are much larger than adrenal adenomas. An adrenal tumor larger than 5 or 6 centimeters (about 2 to 2 1/2 inches) is assumed to be a cancer. In one study, the average size of an adrenal cancer was about 13 cm (5 inches).

Most cancers found in the adrenal gland did not start there and are not adrenal cancers. Instead, they started in other organs or tissues and then spread (metastasize) through the bloodstream to the adrenal glands. For example, lung cancers, melanomas, and breast cancers often 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/types/neuroblastoma.html
2. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/imaging-radiology-tests-for-cancer.html
3. www.cancer.org/cancer/types/adrenal-cancer/detection-diagnosis-staging/signs-symptoms.html
4. www.cancer.org/cancer/managing-cancer/treatment-types/surgery.html

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Key Statistics for Adrenal Cancer

How common are adrenal cancers?

Adrenal cancers (carcinomas) are very rare, and the exact number diagnosed in the United States each year is not known. It is probably around 200 per year. These cancers are much less common than benign adrenal tumors (adenomas), which are found fairly often among middle aged and elderly people.

Adrenal tumors (most of which are benign adenomas) are found in about 1 in every 10

What's New in Adrenal Cancer Research?

not been found to be helpful. However, scientists continue to look for drugs to block the effects of certain hormones that might help adrenal cancer cells grow. One of these hormones is called **insulin-like growth factor 2** (IGF2).

Some studies are being done to better understand IGF2 and other hormones to know if targeted drugs may be helpful in adrenal cancer.

Genetics

Scientists are learning how changes in certain genes cause normal adrenal cortex cells to become cancerous. Understanding these genetic changes will help doctors develop better methods to diagnose this disease as well as treatments that are more effective and have fewer side effects than those currently available. Medical centers involved in research might ask their patients for blood samples and about diseases in other family members to learn more about adrenal cancer, as part of studies. These studies are different from treatment studies. The goal of these studies is to enhance research of this rare cancer, to learn more about how adrenal cancer forms, and in the future find new targets for adrenal cancer therapy.

For example, there have been several studies looking at which hereditary syndromes, such as Lynch syndrome, lead to a higher risk for adrenal cancer. (These syndromes are discussed in Risk Factors for Adrenal Cancer[2].) International groups are working to understand how adrenal cancer develops. Hopefully, these efforts will provide better targets for therapy.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/treatment-types/targeted-therapy.html
2. www.cancer.org/cancer/types/adrenal-cancer/causes-risks-prevention/risk-factors.html

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