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Adrenal Cancer Early Detection, Diagnosis, and Staging

Know the signs and symptoms of adrenal cancer. Find out how adrenal cancer is tested for, diagnosed, and staged.

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- [Can Adrenal Cancer Be Found Early?](#)
- [Signs and Symptoms of Adrenal Cancers](#)
- [Tests for Adrenal Cancer](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- [Adrenal Cancer Stages](#)
- [Survival Rates for Adrenal Cancer](#)


Questions to Ask About Adrenal Cancer

Here are some questions you can ask your cancer care team to help you better understand your cancer diagnosis and treatment options.

- [Questions to Ask About Adrenal Cancer](#)

Can Adrenal Cancer Be Found Early?

It is hard to find adrenal cancers early, and they are often quite large by the time they are diagnosed.



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Signs and Symptoms of Adrenal Cancers

- [Symptoms caused by androgen or estrogen production](#)
- [Symptoms caused by cortisol production](#)
- [Symptoms caused by aldosterone production](#)
- [Symptoms caused by a large adrenal cancer pressing on nearby organs](#)

In about half of people with adrenal cancer, symptoms are caused by the hormones made by the tumor. In the other half, symptoms occur because the tumor has grown so large that it presses on nearby organs. If you or your child has any of the signs or symptoms described here, discuss them with your doctor without delay. These symptoms may be caused by an adrenal tumor or by something else. Getting the proper medical tests is the only way to find out and to get the proper treatment, if needed.

Symptoms caused by androgen or estrogen production

In children, symptoms are most often caused by the **androgens** (male-type hormones) that the tumor secretes. The most common symptoms are excessive growth of facial and body hair (such as in the pubic and underarm areas). Male hormones may also enlarge the penis in boys or the clitoris in girls.

If the tumor secretes **estrogens** (female-type hormones), girls can start puberty early. This can cause breasts to develop and menstrual periods to start. Estrogen-producing tumors can also enlarge breasts in boys.

The symptoms from high levels of sex hormones are less noticeable in adults because they have already gone through puberty and have breasts and adult patterns of body hair. Women with estrogen-producing tumors and men with androgen-producing tumors usually do not have any symptoms from the hormones, so they might not have symptoms until the tumor is large enough to press on nearby organs.

Symptoms are easier to notice if the tumor is making the hormone usually found in the opposite sex. For example, men with tumors that make estrogen may notice their breasts becoming enlarged and tender. They may also have sexual problems such as

erectile dysfunction (impotence) and loss of sex drive. Women with tumors that make androgens (male hormones) may notice excessive facial and body hair growth, a receding hairline, irregular menstrual periods, and deepening of their voice.

Symptoms caused by cortisol production

The main signs and symptoms caused by aldosterone-producing adrenal tumors are:

- High blood pressure
- Weakness
- Muscle cramps
- Low blood potassium levels

Adrenal adenomas often make aldosterone, but adrenal cancers rarely do.

Symptoms caused by a large adrenal cancer pressing on nearby organs

As an adrenal cancer grows, it presses on nearby organs and tissues. This may cause pain near the tumor, a feeling of fullness in the abdomen, or trouble eating because of a feeling of filling up easily.

Hyperlinks

1. www.cancer.org/cancer/types/lymphoma.html
2. www.cancer.org/cancer/diagnosis-staging/tests.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. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA. Elsevier: 2014: 1112-1142.

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A [chest x-ray](#)² can show if the cancer has spread to the lungs. It may also be useful to determine if there are any serious lung or heart diseases.

Ultrasound

[Ultrasound tests](#)³

the doctor see areas that "light up" on the PET scan in more detail.

PET scans can be helpful in deciding if an adrenal tumor is likely to be benign or malignant (cancer), and if it may have spread.

Other tests

Laparoscopy

A laparoscope, a thin, flexible tube with a tiny video camera on the end, is inserted through a small surgical opening in the patient's side to allow the surgeon to see where the cancer is growing. It can be used to help spot distant spread as well as enlarged lymph nodes (which might contain cancer). Sometimes it is combined with ultrasound to give a better picture of the cancer. Laparoscopy may be done to help predict whether it

are sometimes biopsied when the patient is known to have a different type of cancer (like lung cancer), and knowing if it has spread to the adrenal glands would alter treatment.

Blood and urine tests for adrenal hormones

Blood and urine tests to measure levels of adrenal hormones are important in deciding whether a patient with signs and symptoms of adrenal cancer has the disease. For urine tests, you may be asked to collect all of your urine for 24 hours. Blood and urine tests

Hyperlinks

1. www.cancer.org/cancer/types/adrenal-cancer/treating/surgery.html
2. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/x-rays-and-other-radiographic-tests.html
3. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ultrasound-for-cancer.html
4. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ct-scan-for-cancer.html
5. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/mri-for-cancer.html
6. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/nuclear-medicine-scans-for-cancer.html
7. www.cancer.org/cancer/types/adrenal-cancer/treating/surgery.html
8. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests.html

References

Groussin L, Bonardel G, Silvéra S, et al. 18F-Fluorodeoxyglucose positron emission tomography for the diagnosis of adrenocortical tumors: a prospective study in 77 operated patients. *J Clin Endocrinol Metab.* 2009;94(5):1713-1722. Epub 2009 Feb 3.

Lalli E, Sasano H. 5th International ACC Symposium: An outlook to current and future research on the biology of adrenocortical carcinoma: Diagnostic and therapeutic applications. *Horm Can.* 2016;7:44-48.

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. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA. Elsevier: 2014: 1112-1142.

Song JH, Chaudhry FS, Mayo-Smith WW. The incidental adrenal mass on CT: prevalence of adrenal disease in 1,049 consecutive adrenal masses in patients with no known malignancy. *AJR Am J Roentgenol.* 2008;190:1163-1168.

Song JH, Mayo-Smith WM. Current status of imaging for adrenal gland tumors. *Surg Oncol Clin N Am*. 2014;23:847-861.

Sturgeon C, Shen WT, Clark OH, et al. Risk assessment in 457 adrenal cortical carcinomas: How much does tumor size predict the likelihood of malignancy. *J Am Coll Surg*. 2005;423-430.

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Adrenal Cancer Stages

- [Understanding your adrenal cancer stage](#)

After someone is diagnosed with adrenal cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called *staging*. The stage of a cancer describes how far the cancer has spread in the body. It helps determine how serious the cancer is and how best to treat it. **The stage is one of the most important factors in deciding [how to treat the cancer](#)¹ and determining how successful treatment might be.**

To determine the cancer's stage after an adrenal cancer diagnosis, doctors try to answer these questions:

- How large is the cancer?
- Has the cancer grown into nearby structures or organs?
- Has the cancer spread to nearby lymph nodes or to distant organs?

		N0 M0	sites (M0).
III	III	T1 N1 M0	The tumor is 5 cm (about 2 inches) or less in size and it has not grown into tissues outside the adrenal gland (T1). The cancer has spread to nearby lymph nodes (N1) but not to distant sites (M0).
		OR	
		T2 N1 M0	The tumor is greater than 5 cm (2 inches) in size and it has not grown into tissues outside the adrenal gland (T2). The cancer has spread to nearby lymph nodes (N1) but not to distant sites (M0).
		OR	
		T3 Any N M0	The tumor is growing in the fat that surrounds the adrenal gland. The tumor can be any size (T3). It might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
OR			
		T4 Any N M0	The tumor is growing into nearby organs, such as the kidney, pancreas, spleen, and liver or large blood vessels (renal vein or vena cava). The tumor can be any size (T4). It may or may not have spread to nearby lymph nodes (Any N). It has not spread to distant organs (M0).
IV	IV	Any T Any N M1	The cancer has spread to distant sites like the liver or lungs (M1). It can be any size (Any T) and may or may not have spread to nearby tissues (Any T) or lymph nodes (Any N).

The following additional categories are not listed on the table above:

- **TX:** Main tumor cannot be assessed due to lack of information
- **T0:** No evidence of a primary tumor
- **NX:** Regional lymph nodes cannot be assessed due to lack of information

Hyperlinks

1. www.cancer.org/cancer/types/adrenal-cancer/treating.html
2. www.cancer.org/cancer/types/adrenal-cancer/treating/surgery.html

References

American Joint Committee on Cancer. Adrenal Cortical. In: *AJCC Cancer Staging Manual*. 8th ed. New York: Springer. 2017:911-918.

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Survival Rates for Adrenal Cancer

What is a 5-year relative survival rate?

A **relative survival rate** compares people with the same type and stage of cancer to people in the overall population. For example, if the **5-year relative survival rate** for a specific stage of adrenal cancer is 80%, it means that people who have that cancer are, on average, about 80% as likely as people who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the Surveillance,

Written by