



# Treating Adrenal Cancer

- A medical oncologist: a doctor who uses chemotherapy and other medicines to treat cancer

You might have many other specialists on your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, psychologists, social workers, rehabilitation specialists, and other health professionals.

- [Health Professionals Associated with Cancer Care](#)

## **Making treatment decisions**

It's important to discuss all treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. You may feel that you need to make a decision quickly, but it's important to give yourself time to absorb the information you have learned. Ask your cancer care team questions.

If time permits, it is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

- [Questions to Ask About Adrenal Cancer](#)
- [Seeking a Second Opinion](#)

## **Thinking about taking part in a clinical trial**

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials.

- [Clinical Trials](#)

## **Considering complementary and alternative methods**

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include

vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor's medical treatment.

treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- [If Cancer Treatments Stop Working](#)

*The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask your cancer care team any questions you may have about your treatment options.*

---

## Surgery for Adrenal Cancer

The main treatment for adrenal cancer is removal of the adrenal gland, an operation called an **adrenalectomy**. The surgeon will try to remove as much of the cancer as possible, including any areas of cancer spread. If nearby lymph nodes are enlarged, they also will need to be removed and checked for cancer spread.

One way to remove the adrenal gland is through an incision in the back, just below the ribs. This works well for small tumors, but it can be hard to see larger tumors well.

More often, the surgeon makes the incision through the front of the abdomen. This lets



No.:CD011668.

Lam AK. Update on adrenal tumours in 2017 World Health Organization (WHO) of Endocrine Tumours. *Endocr Pathol*. 2017 Sep;28(3):213-227.

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.

National Cancer Institute. *Physician Data Query (PDQ). Adrenocortical Carcinoma Treatment*. 06/02/2015. Accessed at: <https://www.cancer.gov/types/adrenocortical/hp/adrenocortical-treatment-pdq> on December 13, 2017.

National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology: Neuroendocrine Tumors*. v.3.2017. Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/neuroendocrine.pdf](https://www.nccn.org/professionals/physician_gls/pdf/neuroendocrine.pdf) on December 13, 2017.

Rodriguez-Galindo C, Figueiredo BC, Zambetti GP, Ribeiro RC. Biology, clinical characteristics, and management of adrenocortical tumors in children. *Pediatr Blood Cancer*. 2005;45(3):265-273.

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.

Varghese J, Habra MA. Update on adrenocortical carcinoma management and future directions. *Curr Opin Endocrinol Diabetes Obes*. 2017 Jun;24(3):208-214.

# Radiation Therapy for Adrenal Cancer

Radiation therapy uses high-energy x-rays (or particles) to kill cancer cells. Radiation therapy is not used often as the main initial treatment for adrenal cancer because the cancer cells are not easy to kill with x-rays. Radiation may be used after surgery to help keep the tumor from coming back. This is called **adjuvant therapy**. Radiation can also be used to treat areas of cancer spread, such as in the bones or brain.

## Types of radiation therapy

**External beam radiation therapy** focuses radiation on the cancer from a machine outside the body. Treatments are often given once or twice a day, 5 days a week for several weeks. Treatment is similar to getting an x-ray test, and is not painful. The actual treatment time lasts only a few minutes, although the setup time - getting you into place for treatment - usually takes longer so that the radiation is aimed accurately at the cancer. Before the treatment starts, the radiation team will take careful measurements to find the correct angles for aiming the radiation beams and the proper dose of radiation. This planning session, called simulation, usually includes getting imaging tests such as [CT](#)<sup>1</sup> or [MRI](#)<sup>2</sup> scans.

**Brachytherapy** (internal radiation therapy) uses small pellets of radioactive material placed next to or directly into the cancer, sometimes in thin plastic tubes. The tubes containing the pellets are left in place for a few days and then removed. The actual time is determined by the strength of the radioactive pellets and the size of the tumor. This type of radiation is not often used to treat adrenal cortical cancer.

## Possible side effects

Common side effects of radiation therapy include:

- Nausea and vomiting
- Diarrhea (if an area of the abdomen is treated)
- Skin changes in the area being treated, which can range from redness to blistering and peeling
- Hair loss in the area being treated
- Fatigue
- Low blood counts

## More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)<sup>3</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>4</sup>.

## Hyperlinks

1. [www.cancer.org/treatment/understanding-your-diagnosis/tests/ct-scan-for-cancer.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/ct-scan-for-cancer.html)
2. [www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html)
3. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html)
4. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

## References

Else T, Williams AR, Sabolch A, et al. Adjuvant therapies, patient and tumor characteristics associated with survival of adult patients with adrenocortical carcinoma. *J Clin Endocrinol Metab.* 2013 Dec 3. [Epub ahead of print].

Fassnacht M, Hahner S, Polat B, et al. Efficacy of adjuvant radiotherapy of the tumor bed on local recurrence of adrenocortical carcinoma. *J Clin Endocrinol Metab.* 2006;91:4501-4504.

Lam AK. Update on adrenal tumours in 2017 World Health Organization (WHO) of Endocrine Tumours. *Endocr Pathol.* 2017 Sep;28(3):213-227.

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*





to take steroid hormone pills to bring your hormone levels up to normal. Mitotane can also alter levels of other hormones, such as thyroid hormone or testosterone. If that occurs, you'd need drugs to replace these hormones as well.

Sometimes mitotane is given for a period of time after surgery has removed all the (visible) cancer. This is called **adjuvant therapy** and is meant to kill any cells that were left behind but were too small to see. Giving the drug this way may prevent or delay the cancer's return. .

If the cancer has not been completely removed by surgery or has come back, mitotane will shrink the cancer in some patients. On average, the response lasts about a year, but it can be longer for some patients.

Mitotane is particularly helpful for people with adrenal cancers who have problems caused by excessive hormone production. Even when it doesn't shrink the tumor, mitotane can reduce abnormal hormone production and relieve symptoms. Most patients with excess hormone production are helped by mitotane.

This drug can cause major side effects. The most common are nausea, vomiting, diarrhea, rashes, confusion, and sleepiness. Sometimes lower doses of the drug can still be effective and cause fewer side effects.

This drug is taken as a pill 3 to 4 times a day. Like other types of chemo, treatment with mitotane needs to be supervised closely by a doctor.

### **Other chemo drugs used for adrenal cancer**



## References

Berruti A, Fassnacht M, Baudin E, et al. Adjuvant therapy in patients with adrenocortical carcinoma: A position of an international panel. *J Clin Oncol*. 2010;28(23):e401-402; author reply e403. Epub 2010 Jun 21.

Else T, Williams AR, Sabolch A, et al. Adjuvant therapies, patient and tumor characteristics associated with survival of adult patients with adrenocortical carcinoma. *J Clin Endocrinol Metab*. 2013 Dec 3. [Epub ahead of print]

Erickson LA, Rivera M, Zhang J. Adrenocortical carcinoma: review and update. *Adv Anat Pathol*. 2014 May;21(3):151-9.

Fassnacht M, Terzolo M, Allolio B, et al. Combination chemotherapy in advanced adrenocortical carcinoma. *N Engl J Med*. 2012;366(23):2189-2197. Epub 2012 May 2.

Ferrari L, Claps M, Grisanti S, Berruti A. Systemic therapy in locally advanced or metastatic adrenal cancers: A critical appraisal and clinical trial update. *Eur Urol Focus*. 2016 Feb;1(3):298-300.

Lam AK. Update on adrenal tumours in 2017 World Health Organization (WHO) of Endocrine Tumours. *Endocr Pathol*. 2017 Sep;28(3):213-227.

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.

National Cancer Institute. *Physician Data Query (PDQ). Adrenocortical Carcinoma Treatment*. 06/02/2015. Accessed at: <https://www.cancer.gov/types/adrenocortical/hp/adrenocortical-treatment-pdq> on December 13, 2017.

National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology: Neuroendocrine Tumors*. v.3.2017. Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/neuroendocrine.pdf](https://www.nccn.org/professionals/physician_gls/pdf/neuroendocrine.pdf) on December 13, 2017.

Przytulska J, Rogala N, Bednarek-Tupikowska G. Current and emerging therapies for



- **Tamoxifen, toremifene (Fareston), and fulvestrant (Faslodex)**, can block the effects of estrogen. These drugs are more often used to treat breast cancer, but can be useful in some patients (often men) who have adrenal tumors that make estrogen.

## References

Angelousi A, Dimitriadis GK, Zografos G, Nolting S, Kaltsas G, Grossman A. Molecular targeted therapies in adrenal, pituitary and parathyroid malignancies. *Endocrine-related Cancer*. 2017;24(6):R239-R259.

Berruti A, Fassnacht M, Baudin E, et al. Adjuvant therapy in patients with adrenocortical carcinoma: A position of an international panel. *J Clin Oncol*. 2010;28(23):e401-402; author reply e403. Epub 2010 Jun 21.

Else T, Williams AR, Sabolch A, et al. Adjuvant therapies, patient and tumor characteristics associated with survival of adult patients with adrenocortical carcinoma. *J Clin Endocrinol Metab*. 2013 Dec 3. [Epub ahead of print].

Erickson LA, Rivera M, Zhang J. Adrenocortical carcinoma: review and update. *Adv Anat Pathol*. 2014 May;21(3):151-9.

Ferrari L, Claps M, Grisanti S, Berruti A. Systemic therapy in locally advanced or metastatic adrenal cancers: A critical appraisal and clinical trial update. *Eur Urol Focus*. 2016 Feb;1(3):298-300.

Lam AK. Update on adrenal tumours in 2017 World Health Organization (WHO) of Endocrine Tumours. *Endocr Pathol*. 2017 Sep;28(3):213-227.

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.

National Cancer Institute. *Physician Data Query (PDQ). Adrenocortical Carcinoma Treatment*. 06/02/2015. Accessed at: <https://www.cancer.gov/types/adrenocortical/hp/adrenocortical-treatment-pdq> on December 13, 2017.

National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology: Neuroendocrine Tumors*. v.3.2017. Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/neuroendocrine.pdf](https://www.nccn.org/professionals/physician_gls/pdf/neuroendocrine.pdf) on December 13, 2017.

Papotti M, Duregon E, Volante M, McNicol AM. Pathology of the adrenal cortex: A reappraisal of the past 25 years focusing on adrenal cortical tumors. *Endocr Pathol*. 2014;25:35-48.

Przytulska J, Rogala N, Bednarek-Tupikowska G. Current and emerging therapies for adrenocortical carcinoma: Review. *Adv Clin Exp Med*. 2015;24(2):185-193.

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.

Varghese J, Habra MA. Update on adrenocortical carcinoma management and future directions. *Curr Opin Endocrinol Diabetes Obes*. 2017 Jun;24(3):208-214.

Last Revised: January 2, 2018

---

## Treatment Choices by Stage of Adrenal Cancer

Treatment of adrenal cancer depends to a large degree on where the cancer started and [how far it has spread](#)<sup>1</sup>.

### Stages I and II

[Surgery](#) is the main treatment for stage I and stage II adrenal cancer. The entire adrenal gland will be removed. Since a person has 2 adrenal glands, removal of the diseased one does not generally cause problems for the patient. If nearby lymph nodes are enlarged, they will be removed as well and checked to see if they contain cancer cells. Most surgeons do not remove these lymph nodes if they're not enlarged.

In many cases, no further treatment is necessary. If the tumor was not removed completely, treatment with [radiation](#) and/or [mitotane](#) may be given after surgery to help keep the cancer from coming back.

These treatments may also be given if the tumor has a higher chance of coming back later because it was large or appears to be growing quickly (when looked at with a microscope). When treatment is given after surgery has removed all visible cancer, it is called **adjuvant therapy**. The goal of adjuvant therapy is to kill any cancer cells that may have been left behind but are too small to be seen. Killing these cells lowers the chance of the cancer coming back later.

### Stage III

[Surgery](#) is the main treatment for stage III adrenal cancer. The goal of surgery is to remove all of the cancer. The adrenal gland with the tumor is always removed, and the surgeon might also need to remove some tissue around the adrenal gland, including part (or all) of the nearby kidney and part of the liver. The lymph nodes near the adrenal gland will also be removed. After surgery, adjuvant treatment with [radiation](#) and/or [mitotane](#) may be given to help keep the cancer from coming back.

### Stage IV

If it is possible to remove all of the cancer, then [surgery](#) may be done. When the cancer has spread to other parts of the body, it usually cannot be cured with surgery. Some doctors may still recommend surgery to remove as much of the tumor as possible. This type of surgery is called *debulking*. Removing most of the cancer may help reduce symptoms by lowering the production of hormones. [Radiation therapy](#) may also be used to treat any areas of cancer that are causing symptoms. For example, radiation can help when cancer that has spread to the bones is causing pain. Mitotane therapy is also an option. Treatment may begin right away, or it may be postponed until the cancer is causing symptoms. [Other chemotherapy \(chemo\) drugs](#) may also be used.

### Recurrent adrenal cancer

Cancer is called **recurrent** when it comes back after treatment. Recurrence can be local (in or near the same place it started) or distant (in other organs such as the lungs or bones). Local recurrence may be treated with [surgery](#) to remove the cancer. This is more likely to be done if all of the cancer can be removed. Distant recurrence is treated like stage IV disease. Debulking (removing as much of the cancer as possible) surgery may be done to relieve symptoms. People with recurrent disease are often treated with [mitotane and/or other chemo drugs](#). They may also receive [radiation therapy](#). If the



mitotane doesn't work or cannot be tolerated, [other drugs](#) can be given to lower hormone production. For more information on recurrence, see [Understanding Recurrence](#).<sup>2</sup>

Most of the time, these treatments provide only temporary help because the tumor will eventually continue to grow. When this happens and these treatments are no longer helping, treatment aimed at providing as good a [quality of life](#)<sup>3</sup> as possible may be the best choice. The best medicines to treat pain are morphine and other opioids. Many studies have shown that taking morphine as directed for pain does not mean a person will become addicted.

There are many other ways your doctor can help maintain your quality of life and control your symptoms. This means that you must tell your doctor how you are feeling and what symptoms you are having. Many patients don't like to disappoint their doctors by telling them they are not feeling well. This does no one any good.

## Hyperlinks

1. [www.cancer.org/cancer/stomach-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/stomach-cancer/detection-diagnosis-staging/staging.html)
2. [www.cancer.org/treatment/survivorship-during-and-after-treatment/long-term-health-concerns/recurrence.html](http://www.cancer.org/treatment/survivorship-during-and-after-treatment/long-term-health-concerns/recurrence.html)
3. [www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html](http://www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html)

## References

American Cancer Society. *Cancer Facts & Figures 2017*. Atlanta, Ga: American Cancer Society; 2017.

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

American Joint Committee on Cancer. Adrenal Neuroendocrine. In: *AJCC Cancer Staging Manual*. 8th ed. New York: Springer. 2017:919-927.

National Cancer Institute. *Physician Data Q-r0 rg2 Tf 0 0 0 rg /GS695 ger opiNQsodm 0 0 0 Ae G9cs*

*Oncology: Neuroendocrine Tumors. v.3.2017.* Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/neuroendocrine.pdf](https://www.nccn.org/professionals/physician_gls/pdf/neuroendocrine.pdf) on December 13, 2017.

Last Revised: January 2, 2018

### **Written by**

The American Cancer Society medical and editorial content team  
([www.cancer.org/cancer/acs-medical-content-and-news-staff.html](http://www.cancer.org/cancer/acs-medical-content-and-news-staff.html))

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as journalists, editors, and translators with extensive experience in medical writing.

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**