



**Thoracic surgeon:** a surgeon who specializes in chest surgery

## Considering complementary and alternative methods

You may hear about alternative or complementary methods to relieve symptoms or treat your cancer that your doctors haven't mentioned. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

**Complementary** methods are treatments that are used **along with** your regular medical care. **Alternative** treatments are used **instead of** standard medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- [Complementary and Integrative Medicine](#)

## Help getting through cancer treatment

People with cancer need support and information, no matter what stage of illness they may be in. Knowing all of your options and finding the resources you need will help you make informed decisions about your care.

Whether you are thinking about treatment, getting treatment, or not being treated at all, you can still get supportive care to help with pain or other symptoms. Communicating with your cancer care team is important so you understand your diagnosis, what

- [Programs & Services](#)

## Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new 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 as 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.*

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# Surgery for Thymus Cancer

Whenever possible, surgery is used to treat thymus tumors (thymomas and thymic carcinomas). If you have a thymus tumor, one of the first things your doctor will do is to try to figure out if it is completely resectable (removable) with surgery. [Imaging tests](#)<sup>1</sup> are used to do this.

- [Surgical approaches to removing the thymus](#)
- [Possible side effects of surgery for thymus cancer](#)
- [More information about Surgery](#)

The most common surgery for thymus tumors is complete removal of the thymus gland

(including any tumor). This is called a **thymectomy**.

The surgeon will also try to remove any areas of tumor spread outside of the thymus. So, if the tumor has grown into nearby structures, parts of those structures might need to be removed, as well. This could mean removing parts of the pleura (the outer lining of the lung), pericardium (the sac surrounding the heart), nerves, the superior vena cava (a large vein leading to the heart), and/or lung.

The surgeon will also remove nearby lymph nodes so they can be checked for cancer.

## **Surgical approaches to removing the thymus**

This surgery can be done in different ways.

The standard approach has been through a **median sternotomy**. This is a long incision (cut) down the middle of the chest that splits the sternum (breast bone).

In some cancer centers, a **thymectomy** can be done through a **thoracotomy** (a large incision in the side of the chest).

surgeon opens your chest for the operation, the incision will hurt for some time after surgery. Your activity will be limited for at least a month or two.

Some people may need to have part or all of a lung removed. If your lungs are in good condition (other than the presence of the cancer) you can usually go back to normal activities after a lobe or even an entire lung has been removed. If you already have lung problems such as [emphysema or chronic bronchitis](#)<sup>2</sup> (which are common among people who smoke heavily), you may become short of breath with activities after surgery.

## **More information about Surgery**

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)<sup>3</sup>.

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# **Radiation Therapy for Thymus Cancer**

outside the person's body to kill cancer cells. Advanced forms of EBRT that allow the radiation beams to be aimed more precisely, such as 3D conformal RT (3D-CRT), intensity-modulated RT (IMRT) are often used to treat these tumors. Newer forms of radiation therapy might also be options in some centers. (See [What's New in Thymus Cancer Research?](#)<sup>1</sup>)

Before your treatments start, the medical team will take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. They will also do special CT scans to help plan your treatments.

The treatment is much like getting an x-ray, but the radiation is more intense. The procedure doesn't hurt, but it does cause side effects (discussed below). Each treatment lasts only a few minutes, although the setup time — getting you into place for treatment — usually takes longer. Most often, radiation treatments are given 5 days a week for several weeks.

## **Possible side effects of radiation therapy for thymus tumors**

Common side effects of radiation therapy include:

- Fatigue
- Skin changes where the radiation passes through, such as redness and blistering
- Nausea and vomiting
- Irritation of the esophagus (the tube between the mouth and stomach), which could cause painful swallowing and eating problems
- Poor appetite and weight loss
- Diarrhea (if the abdomen/belly or pelvis is treated)

Radiation can damage bone marrow leading to low blood counts. This can lead to anemia (low red blood cell counts) which can cause people to feel weak and tired. It can also lead to low white blood cell counts, which increases the risk of serious infections.

Chest radiation therapy can also damage the lungs. This can lead to trouble breathing and shortness of breath. It usually gets better after radiation treatments stop, but sometimes the damage is long-term (or even permanent).

Most side effects are short-term and get better over time after radiation treatment is done.

If radiation therapy is given along with chemotherapy, the side effects are often worse.



If you are having any side effects from radiation therapy, tell your doctor or nurse. Most often, there are ways to help control these symptoms.

## More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)<sup>2</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>3</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/types/thymus-cancer/about/new-research.html](http://www.cancer.org/cancer/types/thymus-cancer/about/new-research.html)
2. [www.cancer.org/cancer/managing-cancer/treatment-types/radiation.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/radiation.html)
3. [www.cancer.org/cancer/managing-cancer/side-effects.html](http://www.cancer.org/cancer/managing-cancer/side-effects.html)

## References

Meneshian A, Oliver KR, Molina JR. Clinical presentation and management of thymoma and thymic carcinoma. UpToDate. 2024. Accessed at <https://www.uptodate.com/contents/clinical-presentation-and-management-of-thymoma-and-thymic-carcinoma> on May 14, 2024.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Thymomas and Thymic Carcinomas. Version 1.2024. Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/thymic.pdf](https://www.nccn.org/professionals/physician_gls/pdf/thymic.pdf) on May 14, 2024.

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# Chemotherapy and Other Drugs for Thymus Cancer

Chemotherapy (chemo) uses anti-cancer drugs that are given into a vein (IV), as an injection (shot), or by mouth. These drugs enter the bloodstream and reach the whole body, making this treatment useful for cancer that may have spread to organs beyond the thymus.

- [When is chemotherapy used for thymus cancer?](#)
- [How is chemotherapy given?](#)
- [Possible side effects of chemotherapy for thymus tumors](#)
- [Other drugs that might be used to treat thymus tumors](#)
- [More information about chemotherapy](#)

## When is chemotherapy used for thymus cancer?

When treating thymus tumors (thymomas and thymic carcinomas), chemo may be used in these situations:

- It might be given after surgery to try to kill any cancer cells that may have been left behind because they were too small to see. This is called **adjuvant** treatment.
- It might be given before surgery to try to shrink tumors so that they can be completely removed. This is called **neoadjuvant** therapy.
- It may be the main treatment for people who have advanced cancer or are not healthy enough for surgery.
- It is sometimes combined with [radiation](#) to help it work better. This is known as **chemoradiation** or **chemoradiotherapy**.

## How is chemotherapy given?

Chemo is given in cycles, with each period of treatment followed by a rest period to allow the body time to recover. Chemo cycles generally last about 3 to 4 weeks, and treatment typically involves 4 to 6 cycles. Chemo is often not recommended for people in poor health, but advanced age by itself is not a barrier to getting chemo.

Several chemo drugs may be used in the treatment of thymomas and thymic carcinomas, including:

Doxorubicin (Adriamycin)

- Cyclophosphamide
- Ifosfamide
- Vincristine
- Etoposide (VP-16)
- Paclitaxel
- Pemetrexed
- 5-fluorouracil (5-FU)
- Gemcitabine

The corticosteroid drug prednisone is often given with chemo.

These drugs usually are given in combination to try to increase their effectiveness. For example, the combination of 8Gemcitabine

Most side effects usually go away over time after treatment ends and there are often ways to lessen them. For instance, drugs can be used to help prevent or reduce nausea and vomiting. If you do have side effects, be sure to ask your doctor or nurse about medicines to help reduce or manage them.

Some chemo drugs can also have other side effects. For example:

- Cisplatin and paclitaxel can damage nerves (called **neuropathy**). This can sometimes lead to pain, burning or tingling sensations, sensitivity to cold or heat, or weakness in the hands and feet.
- Cisplatin can also affect the nerves of the ear, leading to hearing loss.

Most often these problems get better or even go away once treatment is stopped, but they may last a long time in some people. You should report any side effects or changes you notice while getting chemo to your medical team so that you can get prompt treatment for them. In some cases, the doses of the chemo drugs may need to be reduced or treatment may need to be delayed or stopped to keep the effects from getting worse.

## Other drugs that might be used to treat thymus tumors

Some other types of drugs that are not standard chemo drugs might also be helpful in treating thymus tumors, usually after chemo has been tried.

**Octreotide (Sandostatin or Sandostatin LAR)** may help some people with advanced thymoma. This is a man-made version of a hormone called **somatostatin**. This drug works by attaching to the thymoma cells and causing them to stop growing or die. Side effects of this drug can include pain or burning at the injection site, stomach cramps, nausea, vomiting, headaches, dizziness, and fatigue. It is also linked to increased risk of gallstones.

Targeted drugs such as **sunitinib** and **lenvatinib** can sometimes be helpful in treating thymic carcinomas if chemo is no longer working. These drugs target specific parts of cancer cells, or the blood vessels that tumors need to grow. They tend to have different side effects from standard chemo drugs.

**Pembrolizumab (Keytruda)** is a type of immunotherapy drug known as an [immune checkpoint inhibitor](#)

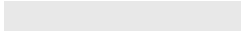




includes cancers that are too close to vital structures (like nerves and blood vessels) or that have spread too far to be removed completely (which includes many stage III and most stage IV cancers). It also includes people who are too ill for surgery.

These people will often have a [biopsy](#)<sup>2</sup> before treatment to confirm the diagnosis.

In some cases, doctors may advise giving [chemo](#) as the first treatment to try to make the tumor resectable. If it shrinks enough, surgery is done. This is then followed by



## Hyperlinks

1. [www.cancer.org/cancer/types/thymus-cancer/about/what-is-thymus-cancer.html](http://www.cancer.org/cancer/types/thymus-cancer/about/what-is-thymus-cancer.html)
2. [www.cancer.org/cancer/types/thymus-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/thymus-cancer/detection-diagnosis-staging/how-diagnosed.html)  
[www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-](http://www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-)  
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