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Treating Thymus Cancer

If you've been diagnosed with a thymus tumor (thymoma or thymic carcinoma), your cancer care team will discuss your treatment options with you. It's important to weigh the benefits of each treatment option against the possible risks and side effects.

How is thymus cancer treated?

The main treatments for thymus cancer are:

- [Surgery for Thymus Cancer](#)
-

Thoracic surgeon: a surgeon who specializes in chest surgery

Considering complementary, integrative, and alternative methods

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

Complementary and integrative methods are treatments that are used **along with** your regular medical care. **Alternative** treatments are used **instead of** standard medical treatment. Although some complementary and integrative 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 treatment is recommended, and ways to maintain or improve your quality of life.

Different types of programs and support services may be helpful, and they can be an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services - including rides to treatment, lodging, and more - to help you get through treatment. Call our Cancer Knowledge Hub at 1-800-227-2345 and speak with one of our caring, trained cancer helpline specialists. Or, if you prefer, you can use our chat feature on cancer.org to connect with one of our specialists.

- [Palliative Care](#)

- [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.

People who have advanced cancer and who are expected to live less than 6 months may want to consider hospice care. Hospice care is designed to provide the best possible quality of life for people who are near the end of life. You and your family are encouraged to talk with your doctor or a member of your supportive care team about hospice care options, which include hospice care at home, a special hospice center, or other health care locations. Nursing care and special equipment can make staying at home a workable option for many families.

- [If Cancer Treatments Stop Working](#)
- [Hospice Care](#)

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 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](#)¹ 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 (including any tumor). This is called a **thymectomy**. The surgeon will also try to remove any areas of tumor that have spread outside of the thymus. If the tumor has grown into nearby structures, parts of those structures also might need to be removed. 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 long incision (cut) down the middle of the chest that splits the sternum (breastbone). This approach is called a **median sternotomy**.

In some cancer centers, smaller thymus tumors might be removed through several smaller incisions using long, thin surgical tools. This is known as a **minimally invasive thymectomy (MIT)**. The surgeon can either hold the tools directly or can sit at a control panel to operate very precise robotic arms to do the surgery. An advantage of MIT is that it usually results in less pain and a shorter recovery time after surgery. But the surgeon has to operate in a smaller space, so not all thymus tumors can be removed this way.

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

Sometimes, [chemotherapy](#) may be given before surgery to try to shrink the tumor so that it can be more easily and completely removed. This is known as **neoadjuvant therapy**.

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 October 24, 2024.

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Nguyen D. Thymectomy. UpToDate. 2024. Accessed at <https://www.uptodate.com/contents/thymectomy> on October 24, 2024.

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Radiation Therapy for Thymus Cancer

Radiation therapy is the use of high-energy radiation in the form of x-rays or radioactive particles to kill cancer cells.

- [When is radiation therapy used for thymus tumors?](#)
- [How is radiation therapy given?](#)
- [Possible side effects of radiation therapy for thymus tumors](#)
- [More information about radiation therapy](#)

When is radiation therapy used for thymus tumors?

Radiation therapy can be used in many ways to treat thymus tumors (thymomas and thymic carcinomas):

It is often used after [surgery](#)

- 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 make people feel weak and tired. It can also lead to low white blood cell counts, which increases the risk of serious infections.

Radiation therapy to the chest can also damage the lungs. This can lead to trouble

and thymic carcinoma. UpToDate. 2024. Accessed at <https://www.uptodate.com/contents/clinical-presentation-and-management-of-thymoma-and-thymic-carcinoma> on October 24, 2024.

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Chemotherapy and Other Drugs for Thymus Cancer

Chemotherapy (chemo) uses 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 parts of the body 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 cancers (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 might 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 has 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 to treat thymomas and thymic carcinomas, including:

- Doxorubicin (Adriamycin)
- Cisplatin
- Carboplatin
- Cyclophosphamide
- Ifosfamide
- Vincristine
- Etoposide (VP-16)
- Paclitaxel
- Pemetrexed
- 5-fluorouracil (5-FU)
- Gemcitabine

These drugs usually are given in combination to try to increase their effectiveness. Some common chemo combinations for thymoma or thymic carcinoma include:

- Carboplatin and paclitaxel
- Cyclophosphamide, doxorubicin, and cisplatin (CAP)
- Etoposide and cisplatin

Possible side effects of chemotherapy for thymus tumors

Chemo drugs work by attacking cells that are dividing quickly, which can lead to certain side effects.

The side effects of chemo depend on the type and dose of drugs you are given and how long they are used. Side effects can include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Fatigue and weakness

Chemo can also affect the blood-forming cells of the bone marrow, leading to:

- Increased chance of infections (due to low white blood cell counts)
- Easy bruising or bleeding (due to low blood platelet counts)
- Fatigue and weakness (due to low red blood cell counts)

Most of these 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 cause nerve damage (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. Be sure to 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 might need to be reduced or treatment 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 attaches to the thymoma cells, 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](#)¹. It helps the body's immune system attack the cancer cells. It is sometimes helpful in treating thymic carcinoma if chemo is no longer working. Side effects tend to be milder than with standard chemo drugs, although serious side effects are also possible.

More information about chemotherapy

For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](#)².

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

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/treatment-types/immunotherapy/immune-checkpoint-inhibitors.html
2. www.cancer.org/cancer/managing-cancer/treatment-types/chemotherapy.html
3. www.cancer.org/cancer/managing-cancer/side-effects.html

References

Kaidar-Person O, Zagar T, Haithcock BE, Weiss J. Chapter 70: Diseases of the Pleura



stage III cancers, and small number of stage IV cancers), surgery offers the best chance for long-term survival. Surgery includes removing the entire thymus and, depending on the extent of the disease, maybe parts of nearby organs or blood vessels, too.

Treatment after surgery

Early stage thymomas (such as stage I and II) usually don't need more treatment after surgery, as long as the tumor was removed completely. In some cases, [radiation therapy](#) may be considered if there is concern that any tumor was left behind.

People with **more advanced stage thymomas** (such as stages III and IV) who have had surgery may be treated with radiation afterward, even if all of the tumor was removed. If the tumor couldn't be removed completely, radiation therapy is usually given after surgery. Depending on how much cancer was left behind, [chemotherapy](#) (chemo) may be added as well.

Thymic carcinomas are more likely than thymomas to come back after treatment. People with stage I tumors may not need further treatment if the tumor was removed completely. If the tumor is more advanced, or some might have been left behind, people typically are treated with radiation after surgery. The radiation may be given along with chemo, especially if some cancer is left behind after surgery.

Unresectable cancers

Unresectable cancers are those that cannot be removed with [surgery](#). This group 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.

People with these cancers will often have a [biopsy](#)² before treatment to confirm the diagnosis.

In some cases, doctors may advise giving [chemo](#) as the first treatment to try to shrink the tumor enough for surgery. If it shrinks enough, surgery is done. This is then followed by further treatment, usually with [radiation therapy](#).

For people who can't have surgery, either because the cancer has spread too far or because they're not healthy enough because of other serious medical conditions, chemo and radiation therapy are the main treatment options. If chemo is no longer helpful, [other drugs](#) that work in different ways might be options.

Because unresectable cancers can be hard to treat, taking part in a [clinical trial](#)³ of a newer form of treatment may be a reasonable option.

Recurrent thymus cancer

When cancer comes back after treatment it's called a **recurrence**. A recurrence can be local (in or near the same place it started) or distant (spread to organs such as the lungs, liver, or bones).

Thymomas most often come back locally. Thymic carcinomas can also come back locally and in nearby lymph nodes, but they may also spread to other parts of the body, such as the liver, lungs, and bones.

Treatment for thymus cancer that has recurred (come back) after initial treatment depends on where it recurs and on what the original treatment was. If the recurrence isn't too widespread, [surgery](#) might be an option and offer the best chance for long-term survival. But most often, the main treatment options are radiation therapy and/or chemo. These treatments can often help control the cancer for a time, but they are very unlikely to result in a cure. If chemo is no longer helpful, [other drugs](#) that work in different ways might be options.

Because recurrent cancers can be hard to treat, [clinical trials](#)⁴ of new types of treatment may be a good option.

Hyperlinks

1. 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
3. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html
4. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html

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