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Treating Nasal Cavity and Paranasal Sinus Cancers

How are nasal cavity and paranasal sinus cancers treated?

Treatment for nasal cavity or paranasal sinus cancer may include:

- [Surgery for Nasal Cavity and Paranasal Sinus Cancers](#)
- [Radiation Therapy for Nasal Cavity and Paranasal Sinus Cancers](#)
- [Chemotherapy for Nasal Cavity and Paranasal Sinus Cancers](#)
- [Targeted Therapy for Nasal Cavity and Paranasal Sinus Cancers](#)
- [Immunotherapy for Nasal Cavity and Paranasal Sinus Cancers](#)
- [Palliative Treatment for Nasal Cavity and Paranasal Sinus Cancers](#)

Common treatment approaches

Depending on the stage of the cancer and your general health, different treatment options may be used alone or in combination. For early-stage cancer that's small and hasn't spread, surgery may be all that's needed. For more advanced cancer (bigger cancers that may have spread), other treatments like radiation therapy, chemotherapy, or targeted therapy may be needed along with or instead of surgery. Be sure to ask your doctor to explain your cancer's stage and what it means for you so that you can make the best choice about your treatment.

- [Treatment Options by Type, Location, and Stage of Nasal Cavity and Paranasal Sinus Cancer](#)

Who treats nasal cavity and paranasal sinus cancers?

Based on the treatment options, you may have different kinds of doctors on your treatment team. These doctors may include:

- An **otolaryngologist**: a doctor who specializes in certain diseases of the head and neck (also known as an ear, nose, and throat, or ENT doctor)
- A **neurosurgeon**: a doctor who specializes in surgery on the brain, spine, and other parts of the nervous system.
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy.
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy.

Many other specialists may be involved in your care as well, including nurse practitioners, nurses, nutrition specialists, social workers, 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 the cancer is too advanced to be cured, the goal may be to remove or destroy as much of the cancer as reasonable to help keep the tumor from growing or spreading for as long as possible. Some of the treatments above can also be used as palliative treatment if all the cancer cannot be removed. Palliative treatment is used to relieve symptoms such as pain, but it's not expected to cure the cancer.

These are rare cancers, and not all hospitals and doctors have a lot of experience in treating them. 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.

- [What Should You Ask Your Doctor About Nasal Cavity or Paranasal Sinus 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. 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 Alternative 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 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 National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- [Palliative Care](#)
- [Find Support Programs and Services in Your Area](#)

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 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 him or her questions about your treatment options.

Surgery for Nasal Cavity and Paranasal Sinus Cancers

For most nasal cavity or paranasal sinus cancers, surgery to remove the cancer (and some of the surrounding bone or other nearby tissues) is a key part of treatment. Often, surgery is used with other treatments, like radiation therapy and/or chemotherapy to get the best results.

The nasal cavity and paranasal sinuses are close to many important nerves, blood vessels, and other structures. The brain, eyes, mouth, and carotid arteries (arteries that supply blood to the brain) are also close by, making surgical planning and surgery itself difficult. The goal of surgery in these areas is to take out the entire tumor and a small amount of normal tissue around it while keeping appearance and function (such as breathing, speech, chewing, and swallowing) as normal as possible. Rebuilding and/or repairing the area around the tumor is an important part of the surgery plan.

Because of the complex nature of these operations and the fact that these cancers are rare, it's very important to have a surgeon who has experience treating these cancers.

When removing the cancer, the surgeon also tries to take out a rim (margin) of surrounding normal tissue. The tissue that's removed will be checked with a microscope to see if there are cancer cells at the edges. If the edges don't have cancer cells, the cancer is said to have been removed with **negative** or **clear** margins. Negative margins mean that it's less likely that any cancer was left behind. If the edges do have cancer cells, the margins are said to be **positive**. Positive margins mean that it's more likely that some cancer was left behind. Often this means more treatment, such as more surgery or radiation.

Nasal cavity cancers

Nasal cavity cancers are often removed in a procedure called **wide local excision**. This means removing the tumor plus an edge of normal tissue around it. The goal is to remove enough tissue so that no cancer cells remain.

If the tumor is in the middle dividing wall of the nasal cavity (the nasal septum), sometimes the entire septum or a large portion of it will be taken out.

If the tumor is in the lateral (side) wall of the nasal cavity, this wall may need to be removed by a procedure called a **medial maxillectomy**. To do this, the surgeon will usually cut through the skin along the side or edge of the nose and fold the external nose toward the opposite side to see and work on the tumor. Then the side of the nasal cavity can be removed by cutting the bone and soft tissue as needed. Sometimes, if the cancer is in a certain spot, the surgeon can reach the tumor by cutting under the upper lip instead. This approach has the advantage of avoiding any cuts, and maybe scars, on

the skin. Ask your head and neck surgeon how your surgery will be done.

If the cancer has reached the skin or deeply invades the tissue of the external nose, part (or all) of the nose may need to be removed. There are many ways to rebuild a nose using tissue from the face or other areas. In some cases, a cosmetic [prosthesis](#)¹ (made of artificial materials) may be used to make a new nose.

Paranasal sinus cancers

Operations for paranasal sinus tumors vary, depending on the tumor type, location, size, and growth into other parts of the head and neck.

If the tumor is small and/or it's not cancer (benign) and is only in the ethmoid sinuses, an *external ethmoidectomy* may be done. The surgeon will cut through the skin on the upper side of the nose next to the upper eyelid. Bone on the inner side of the orbit (eye socket) and nose will be removed to reach tumors inside the ethmoid sinuses.

If the tumor also has grown into the maxillary sinus, a **maxillectomy** may be done. The type of maxillectomy depends on where the tumor is and whether it has grown into nearby tissues. The surgeon may make an incision (cut) along the side of the nose from the eyebrow or upper eyelid down to or through the upper lip. Or the incision may be made under the upper lip. The bones around the maxillary sinus are cut so that the entire tumor and some surrounding tissue can be taken out in one piece. This operation might remove bone from the hard palate (the roof of the mouth), upper teeth on one side of the mouth, part or all of the orbit (eye socket), part of the cheekbone, and/or the bony part of the upper nose.

If the cancer is a [higher stage](#)², has spread into the base of the skull or brain, or is in the ethmoid sinuses, frontal sinuses, and/or the sphenoid sinuses, an operation called a **craniofacial resection** may be done. This operation is a lot like a maxillectomy except that the surgeon may also remove upper parts of the eye socket and the front base of the skull. This is a major operation that's usually done by a surgical team that includes an otolaryngologist (head and neck surgeon) and a neurosurgeon (a surgeon who operations on the brain, spinal cord, and other nerves).

Endoscopic surgery

In this type of surgery, the surgeon uses an [endoscope](#)³ (a thin, flexible lighted tube that's put into the nose to reach the nasal cavity or sinus) to see and remove the tumor. This way, the surgeon doesn't have to cut through skin and bone to open up the whole cavity. This reduces normal tissue damage. In general, recovering from this type of

surgery takes less time. And for some of these cancers, long-term outcomes for endoscopic surgery are as good as, and maybe even better than, other surgeries used to treat these cancers.

Endoscopic surgery is most often used for small tumors. For larger tumors, it may be used to help try to control the tumor in people who are not healthy enough for a bigger operation. Usually it's combined with radiation treatment.

Endoscopic surgery may also be used along with some of the more invasive surgeries listed above. In this case, it may help limit damage to healthy tissues. It also may help the doctor better see the area to try to be sure all of the cancer has been taken out. (You may hear this called **endoscopic-assisted surgery**.)

Endoscopic approaches to remove nasal and sinus cancers are becoming more common as more surgeons are trained in these techniques. These approaches are best performed by teams of experienced surgeons at specialized centers. Some medical centers (and surgeons) have more experience than others with endoscopic surgery for nasal and sinus cancers. If you're considering endoscopic surgery as a part of your treatment, be sure to ask about your surgeon's training and experience, which are key to successful endoscopic surgery.

Removing lymph nodes

Cancers of the nasal cavity or paranasal sinuses sometimes spread to the [lymph nodes](#)⁴ in the neck. Depending on the stage and location of the cancer, these lymph nodes may need to be removed in an operation called a **neck dissection**.

There are several types of neck dissection procedures. Their goals are to remove lymph nodes known to or likely to contain cancer. The amount of tissue removed depends on the cancer's size and the extent of spread to lymph nodes.

- A **partial or selective** neck dissection removes only a few lymph nodes.
- A **modified radical** neck dissection removes most lymph nodes on one side of the neck between the jawbone and collarbone, as well as some muscle and nerve tissue.
- A **radical** neck dissection removes nearly all nodes on one side of the neck as well as even more muscles, nerves, and veins.

The most common side effects of any neck dissection are numbness of the ear, weakness in raising the arm above the head, and weakness of the lower lip. These

develop when nerves are damaged. After a selective neck dissection, the weakness of the arm and lower lip usually go away after a few months. But if a nerve is removed as part of a radical neck dissection or because of tumor spread, the weakness will be permanent. After any type of neck dissection, physical therapists can teach the patient exercises to improve neck and shoulder movement.

While some swelling is normal after surgery, it should go away over time. When lymph nodes are removed, it changes how fluid drains from the head, face, and neck. The fluid might not be able to drain like it should. This can cause swelling in these areas called *lymphedema*. This side effect can develop anytime after lymph node dissection, even many years later.

Possible risks and side effects of surgery

All surgery has some risks, including blood clots, infections, complications from anesthesia, and pneumonia. These risks are generally low, but are higher in more complicated operations.

Pain is a common side effect of surgery. It's also common to have nasal drainage and crusting. Sometimes it smells bad. This usually starts getting better about 6 months after surgery, but may last longer if you're getting radiation.

Surgery for cancers that are large or hard to reach may be very complicated, in which case side effects may include infection, nose bleeds, scarring, problems eating and talking, and vision changes. Surgery also can be disfiguring, especially if bones in the nose or face need to be removed.

Because these cancers tend to not cause problems until they're quite large, they often involve the eye or orbit (the bone and tissue around the eye) by the time they are noticed or cause symptoms. Most of the time the eye can be saved, but sometimes the entire orbit and eyeball needs to be removed to give the best chance for cure.

Because the changes that result are so visible, these surgeries can have a major effect on how people view themselves. The surgeon will take into account how the face will look and function after surgery. But, depending on the extent of the operation needed, you may look different after surgery. This can range from a simple scar on the side of your nose to major changes if nerves, parts of bones, or other structures need to be removed. **It's important to talk with your doctor about these changes before the surgery.** Your doctor might be able to help you prepare for them. He or she can also give you an idea about your options, such as reconstructive surgery, tissue grafts, or a [prosthesis](#)⁵(man-made replacement). For example, an **obturator** is a custom-made

prosthesis used to help restore function in the nose and mouth. An obturator that replaces the roof of the mouth can help you speak and swallow normally. Noses can be made out of plastic, tinted to match the skin, and attached to the face. All of these things can be a great help to a person's self-esteem.

More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)⁶.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁷.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/prostheses.html
2. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/detection-diagnosis-staging/staging.html
3. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery/special-surgical-techniques.html
4. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/prostheses.html
6. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html
7. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Radiation Therapy for Nasal Cavity and Paranasal Sinus Cancers

Radiation therapy uses high-energy radiation to kill cancer cells. It's used in many ways to treat nasal and paranasal sinus cancers:

- It may be the main (primary) treatment. People with small nasal cavity tumors can often be cured with radiation alone. And it doesn't change the way they look as much as [surgery](#) does.
- People who can't have surgery due to poor health or because the tumor is too advanced to remove may get radiation therapy as their only treatment.
- After surgery, radiation can be used to try to kill any small areas of cancer that may remain. This is called adjuvant treatment. **This the most common treatment for these tumors -- surgery then radiation.**
- Radiation might be given before surgery to try to shrink the tumor so it's easier to remove. (It may be given along with chemo.) This is called neoadjuvant treatment.
- It can help ease problems caused by the cancer, like pain, bleeding, and trouble swallowing. This is called [palliative treatment](#)¹.
- Elective radiation may be used to treat [lymph nodes](#)² in the neck even if they don't appear to have cancer cells in them. But not all doctors agree on this.

Sometimes chemotherapy is given along with the radiation. This is called **chemoradiation**. It can work better than radiation alone, but it also has more side effects. (See [Chemotherapy for Nasal Cavity and Paranasal Sinus Cancer](#) for more details.)

Before starting radiation treatments you will be advised to see a dentist. Radiation to this part of your body can affect your teeth and gums. A dentist can make sure your mouth is healthy before treatment. During and after treatment a dentist can help check for and treat any problems that may come up, such as infection or tooth/bone damage.

There are 2 major types of radiation therapy: **external** beam radiation therapy and **internal** radiation (called **brachytherapy**).

External beam radiation therapy

The most common way to deliver radiation to a paranasal or nasal tumor is to focus a

beam of radiation from a machine outside of the body. This is called external beam radiation.

These tumors are close to many important organs and tissues, like the eyes, brain, glands, nerves, and blood vessels. Before your treatments start, the radiation team will take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. Radiation therapy is much like getting an x-ray, but the radiation is stronger. The machine doesn't touch you and treatment doesn't hurt.

Each treatment lasts only a few minutes, but the setup time – getting you into place for treatment – usually takes longer. Patients are fitted with a mold or cast to keep the head, neck, and shoulders still and in the exact same position so the radiation can be aimed more accurately each time. You might also be fitted for a bite block that you hold in your mouth during treatment.

In most cases, external beam radiation therapy means treatments are given 5 days a week for about 6 to 7 weeks. Other schedules for radiation may be used, too.

Hyperfractionation refers to spreading out the total radiation dose into more doses, for instance, 2 smaller doses each day instead of 1 larger dose. **Accelerated fractionation** means that the radiation treatment is completed faster (6 weeks instead of 7 weeks, for instance).

These special techniques help doctors focus the radiation more precisely:

Three-dimensional conformal radiation therapy (3D-CRT): 3D-CRT uses the results of [imaging tests](#)³ such as [MRI](#)⁴ and special computers to map the exact location of the tumor. Several radiation beams are then shaped and aimed at the tumor from different directions. Each beam alone is fairly weak, which makes it less likely to damage the normal tissues it passes through. But the beams all meet at the tumor to give a high dose of radiation there.

Intensity modulated radiation therapy (IMRT): IMRT is an advanced form of 3D therapy. It uses a computer-driven machine that actually moves around the patient as it delivers radiation. Along with shaping the beams and aiming them at the tumor from several angles, the intensity (strength) of the beams can be adjusted to limit the dose reaching the nearby normal tissues. This may let the doctor deliver a higher dose to the tumor with fewer side effects. **IMRT is the standard way to deliver external beam radiation for these cancers.**

Brachytherapy

Another way to deliver radiation is to put radioactive materials right into or near the cancer. The radiation travels only a very short distance, which limits its effects on nearby normal tissues. This method is called **internal radiation**, **interstitial radiation**, or **brachytherapy**. Internal and external beam radiation therapy may be used together to treat nasal cavity and paranasal sinus cancers, but this is rare. More research is needed to know if it helps and how to best use it.

Side effects of radiation therapy

Many people treated with radiation to the neck and throat area get painful sores in the mouth and throat that can make eating and drinking very hard. This can lead to weight loss and malnutrition. Some people need tube feedings during treatment to keep up their strength. (With tube feedings, a liquid food is given through a tube that's put right into the stomach through a small hole in the belly.) The sores heal with time after the radiation has stopped, but some people continue to have problems swallowing long after treatment ends. Ask about swallowing exercises you can do to help keep those muscles working and increase your chance of eating normally after treatment.

Common side effects include:

- Skin problems in the area being treated, ranging from redness to blistering and peeling
- Nausea
- Loss of appetite
- Feeling tired or weak
- Trouble swallowing
- Hearing loss
- Dry eyes
- Hoarseness
- Problems with taste
- Bone pain
- Bone damage
- Brain damage (this is quite rare)

Side effects of radiation tend to be worse if chemotherapy is given at the same time.

Tell your doctor about any side effects you have because there are often ways to help.

Most of these problems will go away over time after the radiation is finished, but some side effects can be permanent. For example, if an eye is in the path of the radiation beam, it could change the way you see through that eye.

Radiation aimed at the head and neck might damage the salivary glands, leading to dry mouth that doesn't get better with time. This can cause discomfort and problems swallowing. It can also lead to tooth decay. People treated with radiation to the neck and throat must pay close attention to their oral health.

If the pituitary or thyroid glands are exposed to radiation, they may be damaged. Your doctor will do blood tests to see how well these glands are working. You may need to take thyroid medicine if there are problems.

More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)⁵.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁶.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html
2. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html
3. www.cancer.org/treatment/understanding-your-diagnosis/tests.html
4. www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Chemotherapy for Nasal Cavity and Paranasal Sinus Cancers

Chemotherapy (chemo) uses anti-cancer drugs that are put into a vein or taken by mouth. These drugs enter the bloodstream and reach all areas of the body, making this treatment useful for cancer that has metastasized (spread) to organs beyond the nasal cavity and paranasal sinuses.

The best way to use chemo to treat nasal cavity and paranasal sinus cancers is not clear. But it may be used in these ways:

- Before [surgery](#) (often along with [radiation therapy](#)) to try to shrink the tumor and make easier to take it all out (with negative margins). This is called *neoadjuvant* chemotherapy. It may also be called *induction chemotherapy*. Neoadjuvant chemo may be used to try to save the eyeball if the cancer has spread there. It may also be used before surgery to quickly ease symptoms the tumor is causing.
- After surgery (often along with radiation therapy) to help lower the chance the cancer will come back. This is called *adjuvant* chemotherapy.
- As the main treatment (often along with radiation therapy) for cancers that are too big or have spread too far into nearby tissues to be completely removed with surgery.
- It may be used to control cancer growth and spread when it has metastasized (spread) to other parts of the body and cannot be treated with surgery or radiation. (Because these cancers rarely metastasize, this use is based on results that have been seen with other kinds of head and neck cancers.) This is called [palliative care](#)¹.

Chemoradiation

Chemoradiation (also called chemoradiotherapy) is chemotherapy given at the same time as radiation. This has been shown to shrink some of these tumors more than either treatment alone. It's also may help delay cancer recurrence (coming back after treatment) in some types of cancer (carcinomas; see below).

Chemo drugs commonly used

Chemo for nasal cavity and paranasal sinus cancers may include a combination of several drugs. These cancers are rare, so there aren't many studies to help doctors decide the best way to treat them. Often, doctors treat them with the same drugs that are used for other, more common, cancers of the head and neck.

The most common types of nasal cavity and paranasal sinus cancers, squamous cell carcinoma, adenocarcinoma, and adenoid cystic carcinoma, can be grouped together as *carcinomas*. Some of the chemo drugs used to treat carcinomas include:

- Cisplatin
- Carboplatin
- 5-fluorouracil (5-FU)
- Docetaxel (Taxotere[®])
- Paclitaxel (Taxol[®])
- Methotrexate

The drugs used depend on many things, including the type of cancer, the extent of the cancer, the person's overall health, and whether chemo is combined with radiation therapy. Cisplatin is the drug most often given with radiation. It's often combined with 5-FU and/or docetaxel. New chemo drugs and combination treatments are also being studied and used.

The [targeted therapy](#)² drug, cetuximab, may also be given with chemo in certain cases.

Different chemo drugs are used for sarcomas and melanomas. Information about chemotherapy for sarcomas may be found in [Sarcoma: Adult Soft Tissue Cancer](#)³. Chemo for melanoma is covered in [Melanoma Skin Cancer](#)⁴.

Side effects of chemotherapy

Chemo drugs attack cells that are dividing quickly, which is why they work against cancer cells. But other cells in the body, such as those in the bone marrow (where new blood cells are made), the lining of the mouth and intestines, and the hair follicles, also divide quickly. These cells are also likely to be damaged by chemo, which can lead to side effects. Side effects depend on the specific drugs used, the doses, and the length of treatment. Common short-term side effects of chemo include:

- Nausea and vomiting
- Loss of appetite
- Loss of hair

- Mouth sores
- Diarrhea
- Constipation
- Low blood counts

Chemo often affects the blood-forming cells of the bone marrow, this can lead to:

- Increased chance of infection (from a shortage of white blood cells)
- Bleeding or bruising after minor cuts or injuries (from a shortage of blood platelets)
- Fatigue (from low red blood cell counts)

There are often ways to lessen these side effects, and they usually go away over time after treatment ends. Be sure to ask your doctor or nurse what can be done to help reduce side effects, and let them know when you do have side effects so they can be managed. For example, drugs can be given to help prevent or reduce nausea and vomiting.

Some side effects continue long after treatment is stopped. For example, cisplatin can cause nerve damage (neuropathy). This can sometimes lead to hearing loss or problems in the hands and feet such as pain, burning or tingling sensations, sensitivity to cold or heat, or weakness. In most cases this gets better or goes away once treatment stops, but for some people, it can last a long time.

If your doctor plans treatment with chemo you should be sure to discuss which drugs will be used and the possible side effects. Once chemo is started, let your health care team know if you have side effects, so they can be treated.

More information about chemotherapy

For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](#)⁵.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁶.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html

3. www.cancer.org/cancer/soft-tissue-sarcoma.html
4. www.cancer.org/cancer/melanoma-skin-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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See all references for Nasal Cavity and Paranasal Sinus Cancers

www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/references.html

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Last Medical Review: April 22, 2014 Last Revised: August 8, 2016

Targeted Therapy for Nasal Cavity and Paranasal Sinus Cancers

As researchers have learned more about the changes in cells that cause cancer, they've been able to develop newer drugs that specifically target these changes. Targeted drugs work differently from standard [chemo drugs](#). They often have different (and less severe) side effects. So they may be useful in treating people who cannot tolerate chemo side effects. Targeted therapy is used to treat many kinds of cancer, but this type of drug has not been well studied for treating most kinds of nasal cavity and paranasal sinus cancers¹. (Some are used to [treat melanomas](#)² in these areas.)

Cetuximab (Erbix) is a [monoclonal antibody](#)³, which is a man-made version of an immune system protein. It targets epidermal growth factor receptor (EGFR), a protein on the surface of certain cells that helps them grow and divide. Nasal cavity and paranasal sinus cancer cells often have more than normal amounts of EGFR. By blocking EGFR, cetuximab can slow or stop cancer cell growth.

Cetuximab may be used to treat more advanced cancers, such as those that have spread or [come back](#)⁴ after treatment. It may be combined with radiation and/or chemo drugs, such as cisplatin and docetaxel, or it may be used by itself.

Cetuximab is given by infusion into a vein (IV), usually once a week. A rare but serious side effect of cetuximab is an allergic reaction during the first infusion, which could cause problems with breathing and low blood pressure. You'll be given medicine before treatment to help prevent this.

Many people develop skin problems such as an acne-like rash on the face and chest during treatment, which in some cases can lead to infections. Other side effects might include headache, tiredness, fever, nausea, and diarrhea.

Talk to your doctor about the side effects you should watch for and what can be done to help prevent or treat them.

Other targeted therapy drugs to treat nasal cavity and paranasal sinus cancers are being studied now.

More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see [Targeted Cancer Therapy](#)⁵.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁶.

Hyperlinks

1. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/about/what-is-nasal-paranasal.html
2. www.cancer.org/cancer/melanoma-skin-cancer/treating/targeted-therapy.html
3. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy/monoclonal-antibodies.html
4. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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See all references for Nasal Cavity and Paranasal Sinus Cancers (www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/references.html)

Last Medical Review: November 15, 2017 Last Revised: December 1, 2017

Immunotherapy for Nasal Cavity and Paranasal Sinus Cancers

Immunotherapy is the use of medicines that help a person's own immune system find

and destroy cancer cells. It can be used to treat some people with nasal cavity or paranasal sinus cancer.

Immune checkpoint inhibitors

An important part of the immune system is its ability to keep itself from attacking normal cells in the body. To do this, it uses “checkpoints” – proteins on immune cells that need to be turned on (or off) to start an immune response. Cancer cells sometimes use these checkpoints to avoid being attacked by the immune system. But newer drugs that target these checkpoints hold a lot of promise as cancer treatments.

Pembrolizumab (Keytruda) and **nivolumab (Opdivo)** are drugs that target PD-1, a protein on immune system cells called T cells that normally helps keep these cells from attacking other cells in the body. By blocking PD-1, these drugs boost the immune response against cancer cells. This can shrink some tumors or slow their growth.

These drugs can be used after [chemotherapy](#) in people with nasal cavity or paranasal sinus cancer that has returned after treatment or that has spread to other parts of the body. Pembrolizumab is also an option as the first treatment in some people.

These drugs are given as an intravenous (IV) infusion, typically every 2, 3, or 4 weeks.

Possible side effects

Side effects of these drugs can include:

- Feeling tired or weak
- Fever
- Cough
- Nausea
- Itching
- Skin rash
- Loss of appetite
- Muscle or joint pain
- Constipation or diarrhea

Other, more serious side effects occur less often:

Infusion reactions: Some people might have an infusion reaction while getting these drugs. This is like an allergic reaction, and can include fever, chills, flushing of the face,

rash, itchy skin, feeling dizzy, wheezing, and trouble breathing. It's important to tell your doctor or nurse right away if you have any of these symptoms while getting these drugs.

Autoimmune reactions: These drugs work by basically removing one of the safeguards that normally helps keep the body's immune system in check. Sometimes the immune system starts attacking other parts of the body, which can cause serious or even life-threatening problems in the lungs, intestines, liver, hormone-making glands, kidneys, skin, or other organs.

It's very important to report any new side effects to your health care team promptly. If serious side effects do occur, treatment may need to be stopped and you may get high doses of corticosteroids to suppress your immune system.

More information about immunotherapy

To learn more about how drugs that work on the immune system are used to treat cancer, see [Cancer Immunotherapy](#)¹.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)².

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology. Head and Neck Cancers. Version 1.2019. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/head-and-neck.pdf on June 19, 2019.

Last Medical Review: June 19, 2019 Last Revised: June 19, 2019

Palliative Treatment for Nasal Cavity and Paranasal Sinus Cancers

Most of our information about nasal cavity and paranasal sinus cancer discusses ways to remove or to destroy cancer cells or to slow their growth. But it's important to remember that maintaining a patient's quality of life is another important goal. This is true in all cases -- whether treatment is being used to try to cure the cancer or if the cancer has spread and cannot be cured.

If the goal of treatment is a cure, [palliative treatments](#)¹ can help ease symptoms from the main cancer treatment itself. If the cancer is advanced, palliative treatment may play an even larger role, helping to keep the person comfortable and maintain quality of life for as long as possible.

For example, [pain](#)² is a significant concern for many patients with cancer. It can almost always be treated effectively with milder drugs like ibuprofen or acetaminophen or, if needed, with stronger medicines like morphine or similar drugs (known as **opioids**). Taking these drugs does not mean a person will become addicted. Many studies have shown that people with cancer who take opioids for pain as their doctor directed typically do not become addicted.

Nutrition is another important concern for people with head and neck cancers such as nasal cavity or paranasal sinus cancers. Both the cancer and its treatment can make it hard to swallow. If this affects how a person eats or drinks, they may need to have a feeding tube inserted into the stomach. Often, this is placed with an endoscope (a flexible tube that goes into the stomach through the throat) and is known as a PEG (percutaneous endoscopic gastrostomy). This tube will most likely be needed for a short time during treatment, but in some cases it may need to be left in longer.

There are many other ways your doctor can help maintain your quality of life and control your symptoms. But this means that you have to tell your doctor how you are feeling and what symptoms you are having. Some people don't like to disappoint their doctors by telling them they are not feeling well. This does no one any good. Your doctor wants to know how you really feel. Talking about the symptoms you are having allows your doctor to give treatments that can relieve the symptoms. Getting effective treatment can help you feel better and let you concentrate on the things that are important in your life.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/pain.html

References

See all references for Nasal Cavity and Paranasal Sinus Cancers

(www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/references.html)

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Treatment Options by Type, Location, and Stage of Nasal Cavity and Paranasal Sinus Cancer

Most of the time, the treatment of nasal cavity or paranasal sinus cancer is based on its location and its stage – how far it has spread in the body. But other factors, such as a person’s overall health and personal preferences, may also affect treatment options. Talk to your doctor if you have any questions about the treatment plan he or she recommends.

The [staging](#)¹ of nasal cavity and paranasal sinus cancer is very complex. At this time, staging systems have only been created for the most common cancers – maxillary sinus and nasal cavity/ethmoid sinus cancers. Treatment choices for less common cancers of the nasal cavity and paranasal sinuses are tailored to suit each patient depending on the tumor type, size, location, and the patient’s general medical condition and desires.

Because nasal cavity and paranasal sinus cancers are rare, they've been hard to study well. Most experts agree that treatment in a [clinical trial](#)² should be considered for any [type](#)³ or stage of nasal cavity and paranasal sinus cancer. This way people can get the best treatment available now and may also get the treatments that are thought to be even better.

Maxillary sinus cancer

Stages I and II

The first step in treating most stage I or II maxillary sinus cancers is [surgery](#) to remove the cancer. In most cases, a maxillectomy (removal of bone and mucosa of the maxillary sinus) is done. Surgery to remove lymph nodes in the neck isn't needed. Sometimes radiation is given before surgery to shrink the tumor and make it easier to remove.

After surgery, most people with these cancers are treated with [radiation](#).

Radiation may not be needed for people with stage I cancers if the cancer was removed completely with negative margins (meaning that there were no cancer cells at the edge of the removed tumor), and the cancer was not growing into the area around the nerves (called **perineural invasion**).

For stage II cancers and stage I cancers that couldn't be removed completely, had positive margins (cancer cells were found in the edges of the tissue removed), or had perineural invasion, radiation is often given after surgery. Some doctors may recommend [chemotherapy](#) (chemo) be give along with the radiation.

Radiation is recommended after surgery for cancers that are the type called **adenoid cystic**, even if the margins are negative and there's no perineural invasion.

In cases where surgery to remove the cancer would be risky because of other medical problems, treatment may be radiation therapy alone. Sometimes chemo is given with the radiation.

Stages III and IV

Stages III and IVA: People with stages III or IVA maxillary sinus cancer are treated with [surgery](#) to remove the tumor. If there are signs that the cancer has spread to the [lymph nodes](#)⁴ in the neck, these lymph nodes are removed as well. (This is called a neck dissection.) Sometimes radiation is given before surgery to shrink the tumor and make it easier to remove.

After surgery, the area where the tumor had been is treated with [radiation therapy](#). Sometimes the lymph nodes in the neck are also treated with radiation. This is more likely if the cancer has spread to a neck lymph node. Chemo may be given along with the radiation therapy. This has more side effects than giving either treatment alone, but

it may help reduce the risk that the cancer will come back after treatment. Sometimes radiation (maybe with chemo) is given before the surgery to try to shrink the tumor so that it can be more easily or more completely removed.

Stage IVB: Some cancers are stage IVB because the main tumor is not resectable (it cannot be removed completely with surgery). People with these cancers are usually treated with [radiation therapy](#). They may also get [chemo](#) and/or [targeted therapy](#). Surgery is sometimes done to help relieve sinus blockage, but it's not meant to cure or completely remove the cancer.

Stage IVB also includes some cancers where the main tumor can be removed with surgery (is resectable), but the cancer has spread to [lymph nodes](#)⁵. These cancers are treated like stage IVA cancers – surgery to remove the tumor and neck lymph nodes, followed by radiation and maybe chemo. Sometimes radiation and chemo are given before the operation to try to shrink the tumor and make it easier to remove.

Stage IVC: These cancers have spread to organs beyond the head and neck. Cancers in this stage are very hard to cure. The goal of treatment is usually to stop or slow the growth of the cancer for as long as possible and to help relieve any symptoms it may be causing.

Treatment for this stage varies, depending on where the cancer is, the problems it's causing, and a person's general health. [Chemo](#) (or [targeted therapy](#)) is often the main form of treatment if a person can tolerate it because it reaches all parts of the body. Another option might be [immunotherapy](#), either alone or along with chemo. [Radiation therapy](#) may be directed at areas of cancer that are causing problems. Because these cancers are very rare and hard to treat, [clinical trials](#)⁶ are a good option.

Nasal cavity cancer

Stages I and II

These cancers are in the nasal cavity without spread to lymph nodes. They can be treated with [surgery](#) or [radiation](#). Radiation is often recommended after surgery.

Stages III and IV

These cancers can be treated with [surgery](#), and [radiation](#) is often given after surgery. If the cancer has spread to [lymph nodes](#)⁷ in the neck, these will be removed as well (called a *neck dissection*).

Another option is to treat with radiation, sometimes combined with [chemo](#) or [targeted therapy](#).

For more advanced cancers, treatment option might include chemo, targeted therapy, [immunotherapy](#), or some combination of these.

Ethmoid sinus cancer

Because the ethmoid sinuses are close to the eye sockets and the skull base, operations for cancers in this area are often more difficult and more extensive than operations for maxillary sinus cancers.

Stages I and II

These cancers can be treated with [surgery](#) to remove the tumor. Surgery is typically followed by [radiation therapy](#) (sometimes with [chemo](#)). This may help lower the chance of the cancer coming back later. Sometimes chemo and radiation therapy are given before surgery to shrink the tumor and make it easier to remove without damaging nearby tissues.

For some very small cancers that are unlikely to spread, some doctors may recommend surgery only, but not all doctors agree with this.

Radiation therapy instead of surgery may also be an option for people with small tumors.

Stages III and IVA

These cancers are usually treated with [surgery](#). If [lymph nodes](#)⁸ in the neck are enlarged, they will also be removed in an operation called a **neck dissection**. Surgery is typically followed by [radiation therapy](#), sometimes along with [chemo](#).

Another option may be to start treatment with radiation therapy and chemo. This might be followed by surgery if the tumor shrinks enough.

Advanced ethmoid sinus cancers

For tumors that cannot be removed with surgery (are unresectable) or for people who are unable or don't want surgery, the first treatment is usually [radiation therapy](#). Sometimes [chemo](#) is given with the radiation treatments.

Cancers that have spread to distant parts of the body are very hard to cure, so the goal of treatment is usually to stop or slow the growth of the cancer for as long as possible and to help relieve any symptoms it may be causing. This is called [palliative or supportive care](#)⁹.

Treatment depends on where the cancer is, the problems it's causing, and a person's general health. Chemo (and/or [targeted therapy](#)) is often the main treatment if a person can tolerate it because it reaches all parts of the body. Another option might be [immunotherapy](#), either alone or along with chemo. Radiation therapy may be directed at areas of cancer that are causing problems. Because these cancers are hard to treat, [clinical trials](#)¹⁰ of newer treatments are a good option for some people.

Sphenoid sinus cancer

The sphenoid sinuses are very difficult to reach with surgery. Cancers in this location are generally treated with [radiation therapy](#). Chemo, [targeted therapy](#), and/or [immunotherapy](#) might be used as well.

Melanoma

Most melanomas of the nasal cavity or paranasal sinuses are treated with surgery to remove the tumor and a rim of normal tissue around it. [Lymph nodes](#)¹¹ in the neck may also be removed in an operation called a **neck dissection**. Radiation therapy is usually given after surgery.

For cancers that can't be removed, radiation therapy, chemo, or other treatments ([immunotherapy](#)¹² or [targeted therapy](#)¹³) may be used. While a melanoma that forms in the nasal cavity or a paranasal sinus is different in many ways from a melanoma skin cancer, it's often treated the same way when it is advanced.

For more information about the treatment of advanced melanomas, see [Melanoma Skin Cancer](#)¹⁴.

Sarcoma

Like other cancers of the nasal cavity and the paranasal sinuses, surgery is the main treatment for most types of sarcoma. In some cases radiation and/or chemo may also be used.

Rhabdomyosarcoma is a type of sarcoma that is most common among infants and

young children. It's usually treated with a combination of surgery, radiation therapy, and chemo. For more information about the treatment of rhabdomyosarcoma, please see [Rhabdomyosarcoma](#)¹⁵.

For other types of sarcoma, see [Sarcoma: Adult Soft Tissue Cancer](#)¹⁶.

Recurrent nasal cavity or paranasal sinus cancer

Cancer is called [recurrent](#)¹⁷ when it comes back after treatment. Recurrence can be local (in or near the same place the cancer first started), regional (in nearby lymph nodes), or distant (spread to distant organs such as the lungs). Options for treating recurrences depend on the location and type of cancer, as well as the treatment used the first time.

For a local recurrence, if [radiation](#) was the first treatment for the cancer, [surgery](#) may be used. If the first treatment was surgery without radiation, radiation therapy may be tried. [Chemo](#) and/or [targeted therapy](#) may be used with radiation, or it may be used by itself to treat recurrences that are not controlled by radiation therapy or surgery.

In a regional recurrence, the cancer comes back in the lymph nodes in the neck. This is often treated with surgery to remove many lymph nodes in the neck (a neck dissection) that are on the same side as the cancer. This may be followed with radiation to the neck, sometimes combined with chemo and/or targeted therapy.

Recurrent [melanomas](#)¹⁸ or [sarcomas](#)¹⁹ of the nasal cavity or paranasal sinuses are treated by surgery, if possible. Depending on the exact type of cells forming the cancers, chemo or other treatments may also be given.

When a nasal cavity or paranasal sinus cancer comes back in other organs, it's often treated with chemo, targeted therapy, and/or [immunotherapy](#), although radiation could also be an option if it wasn't given before.

Treatments for recurrent nasal cavity or paranasal sinus cancer may temporarily shrink cancers and help relieve symptoms, but these cancers are very difficult to cure. If further treatment is recommended, it's important to talk to your doctor so that you understand what the goal of treatment is – whether it's to try to cure the cancer or to keep it under control for as long as possible and relieve symptoms. This can help you weigh the pros and cons of each treatment.

Because these cancers are hard to treat, [clinical trials](#)²⁰ of new treatments are a good option for some people.

Hyperlinks

1. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/detection-diagnosis-staging/staging.html
2. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
3. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/about/what-is-nasal-paranasal.html
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