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Treating Nasopharyngeal Cancer

Surgery for Nasopharyngeal Cancer

Because the nasopharynx is a hard place to operate on and because other types of treatment often work well, surgery is not usually the main treatment for people with nasopharyngeal cancer (NPC). Surgery is more often done to remove lymph nodes in the neck that haven't responded to other treatments.

Surgery to remove the tumor

With newer endoscopic surgery techniques, doctors can use flexible fiberoptic scopes and long, thin surgical instruments to completely remove some nasopharyngeal tumors. But this is only an option for a small number of patients. These complex procedures are done only in specialized centers.

Surgery does have some advantages over other treatments such as [radiation therapy](#) – for example, it lets doctors look at the removed tumor (and nearby tissues) closely in the lab to make sure that no cancer has been left behind.

Surgery to remove lymph nodes

Cancers of the nasopharynx often spread to the lymph nodes in the neck. These cancers often respond well to treatment with radiation therapy (and sometimes [chemotherapy](#)). But if some cancer remains after these treatments, an operation called a *neck dissection* may be needed to remove these lymph nodes. Lymph nodes in the

neck might also be taken out to see if there are cancer cells in them.

There are several types of neck dissection surgery. They differ in the amount of tissue removed from the neck. Depending on the location of the tumor, lymph nodes may be removed from both sides of the neck.

- A *partial* or *selective neck dissection* removes only lymph nodes that are closest to the tumor and most likely to have cancer spread.
- A *modified radical neck dissection* removes lymph nodes on one side of the neck between the jaw bone and collarbone, as well as some muscle and nerve tissue. The main nerve to the shoulder muscle is usually saved.
- A *radical* or *comprehensive neck dissection* removes nearly all lymph nodes on one side as well as even more muscles, nerves, and veins.

Possible risks and side effects of surgery

The risks and side effects of any surgery depend on the extent of the operation and a person's general health before the surgery. If you are considering surgery, your doctor will discuss the likely side effects with you beforehand. Be sure you understand how surgery may affect how you look and how your body works.

All surgeries carry some risk, including the possibility of bleeding, infections, complications from anesthesia, and pneumonia. Most people will have some pain for a while after the operation, although this can usually be controlled with medicines. Other possible side effects of surgery in the head and neck area can include problems with speech or swallowing.

The most common side effects of any neck dissection are numbness of the ear, weakness when raising the arm above the head, and weakness of the lower lip. Surgery can lead to nerve damage and cause these side effects. Nerves heal slowly. After a selective neck dissection, the weakness of the shoulder and lower lip usually go away after a few months. But if either of the nerves that supply these areas is removed as part of a radical neck dissection or because of involvement with tumor, the weakness will be permanent.

After more extensive neck dissections, physical therapists can teach you exercises to improve neck and shoulder strength and movement.

More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)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/surgery.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

References

American Society of Clinical Oncology. Nasopharyngeal Cancer: Treatment Options. 07/2016. Accessed at www.cancer.net/cancer-types/nasopharyngeal-cancer/treatment-options on April 23, 2018.

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See all references for Nasopharyngeal Cancer (www.cancer.org/cancer/nasopharyngeal-cancer/references.html)

Last Revised: September 24, 2018

Radiation Therapy for Nasopharyngeal Cancer

Radiation therapy uses high-energy x-rays or particles to kill cancer cells or slow their rate of growth. It's usually at least part of the main treatment for nasopharyngeal cancer (NPC) because most of these cancers are very sensitive to radiation.

For many cases of NPC, chemotherapy is given along with radiation to try to increase its effects. This treatment, known as *chemoradiation*, can work better than radiation alone, but it also tends to have more side effects. (You can find more on this in [Chemotherapy for Nasopharyngeal Cancer](#).)

Radiation therapy is usually given both to the main nasopharyngeal tumor and to nearby lymph nodes in the neck. Even if the lymph nodes are not abnormally firm or large, radiation is still used, just in case a few cancer cells have spread there. If the lymph nodes are known to have cancer cells, higher radiation doses are used.

Types of radiation therapy used to treat NPC

External beam radiation therapy (EBRT)

This type of radiation therapy uses x-rays that are aimed at the tumor from a large machine. It's the most common form of radiation therapy for NPC.

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. It doesn't hurt and the machine doesn't touch you. Each treatment lasts only a few minutes, but the setup time – getting you in place for treatment – takes longer. Most often, radiation treatments are given 5 days a week for about 7 weeks.

EBRT is most often given using a technique called **intensity-modulated radiation therapy (IMRT)**. IMRT focuses the radiation better and lowers the radiation exposure to nearby healthy tissues. This helps reduce side effects.

Stereotactic radiosurgery is a type of radiation treatment that sends a large, precise radiation dose to the tumor area in a single session. (There's no actual surgery involved in this treatment.) The machines used to deliver this type of radiation are known as a *Gamma Knife*, *X-Knife*, *CyberKnife*, and *Clinac*.

Brachytherapy (internal radiation)

Though seldom used, another way to deliver radiation is to insert (implant) very thin metal rods or wires into or very near the cancer. Small pellets of radioactive materials are then placed into the rods or wires. The radiation travels a very short distance, so it affects the cancer without causing much harm to nearby healthy tissues.

The implant is usually left in place for several days while you stay in a private hospital

room. The length of time that visitors, nurses, and other caregivers can spend with you may be limited because of potential radiation exposure, but this depends on the type of radiation. The implant is removed before you go home.

Brachytherapy may be used if the cancer comes back after EBRT (although stereotactic radiosurgery may be used instead). Sometimes, internal and external beam radiation therapy are used together.

Possible side effects of radiation therapy

Common side effects of external beam radiation to the head and neck include:

- Skin changes in the area where the radiation passes through, with redness or blistering
- Nausea and vomiting
- Fatigue (tiredness)
- Sores in the mouth and throat which can lead to trouble swallowing and weight loss from not eating
- Hoarseness
- Loss of taste

These side effects get better once radiation has stopped. Other side effects may not get better over time, such as **damage to the bones of the skull**, or **problems with hearing or vision because of damage to certain nerves**. Other long term side effects might include:

- **Tooth Problems:** Radiation to these areas can make any tooth problems that you already have worse and hard to fix. Most doctors have you get your teeth checked by a dentist before starting radiation therapy to the head or neck area. In some cases, the dentist may even advise removing some teeth before treatment to lessen the chance that you'll have problems later.
- **Damage to the salivary glands:** This is a major concern with radiation therapy for NPC. This damage can cause dry mouth that doesn't go away and makes it hard to swallow food. Dry mouth can also lead to severe tooth decay. To help prevent dental problems, people treated with radiation to the head or neck area need to practice careful oral hygiene. Dry mouth is less of a problem if IMRT is used. Some of the damage to the salivary glands may also be lessened if a drug called amifostine (Ethyol[®]) is given before each radiation treatment. This drug can have bothersome side effects, though.

- **Damage to the thyroid gland:** The thyroid gland is often damaged if the neck area is treated with EBRT. The damage doesn't cause problems that are noticed right away, so your doctor will watch your thyroid function with blood tests in the years after treatment. If your thyroid function goes down, pills to replace thyroid hormone may be needed.
- **Damage to the pituitary gland:** The pituitary gland is responsible for controlling many hormones in the body. Damage from radiation treatment can be found with blood tests. If the damage is serious enough, this might require taking certain hormones to replace the ones that are missing.
- **Damage to the carotid arteries:** These are major blood vessels in the neck that carry blood to the brain. They can sometimes become narrowed after radiation. This could raise a person's risk of stroke or other problems. This usually takes several years to occur.

It's important to discuss the possible side effects of radiation therapy with your doctor before starting treatment. Also be sure everything is being done to try to limit these side effects as much as possible.

More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)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/radiation.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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American Society of Clinical Oncology. Nasopharyngeal Cancer: Treatment Options. 07/2017. Accessed at www.cancer.net/cancer-types/nasopharyngeal-cancer/treatment-options on April 23, 2018.

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Version. March 1, 2018. Accessed at www.cancer.gov/types/head-and-neck/patient/adult/nasopharyngeal-treatment-pdq on April 23, 2018.

National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology (NCCN Guidelines®), Head and Neck Cancers, Version 1.2018 -- February 15, 2018. Accessed at www.nccn.org/professionals/physician_gls/pdf/head-and-neck.pdf on April 23, 2018.

See all references for Nasopharyngeal Cancer
(www.cancer.org/cancer/nasopharyngeal-cancer/references.html)

Last Revised: September 24, 2018

Chemotherapy for Nasopharyngeal Cancer

Chemotherapy (chemo) is the use of anti-cancer drugs to treat cancer. These drugs are most often given into a vein (IV) or by mouth. They enter the bloodstream and reach throughout the body, making this treatment useful for cancers that have spread beyond the head and neck.

Chemo may be used in different situations to treat nasopharyngeal cancer (NPC):

- Chemo is often used together with [radiation therapy](#) as the first treatment for more advanced stages of NPC because some chemo drugs make cancer cells more sensitive to radiation. This treatment is called **chemoradiation**.
- Chemo may be given before chemoradiation. This is called induction chemo. Not all doctors agree on using chemo this way.
- Chemo may also be given after radiation (or after chemoradiation). This is known as *adjuvant treatment*.
- Chemo is used for patients whose NPC has spread to distant organs such as the lungs, bones, or liver. It may be used alone or along with radiation.

Doctors give chemo in cycles, with each period of treatment followed by a rest period to allow the body time to recover. Cycles generally last about 3 to 4 weeks. Chemo is often

not used for patients in poor health, but advanced age by itself should not keep anyone from getting chemo.

Common chemo drugs for NPC

Cisplatin is the chemo drug used most often to treat NPC. It's used alone as part of chemoradiation. It may be combined with another drug, 5-fluorouracil (5-FU), if it's given after chemoradiation or radiation.

Some other drugs may also be helpful in treating NPC that has spread. These include:

- Carboplatin (Paraplatin[®])
- Doxorubicin (Adriamycin[®])
- Epirubicin (Ellence[®])
- Paclitaxel (Taxol[®])
- Docetaxel (Taxotere[®])
- Gemcitabine (Gemzar[®])
- Bleomycin
- Methotrexate

Often 2 or more of these drugs are used.

Possible 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, the lining of the mouth and intestines, and the hair follicles, also divide quickly. These cells are also likely to be affected by chemo, which can lead to certain side effects.

The side effects of chemo depend on the type and dose of drugs you're given and how long you get them. Common side effects include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea
- Increased chance of infections (due to low white blood cell counts)
- Easy bruising or bleeding (due to low blood platelet counts)

- Fatigue (due to low red blood cell counts)

These side effects are usually short-term and go away over time after treatment ends. Once chemo starts, let your health care team know if you have side effects, so they can be treated. There are ways to prevent or treat many of the side effects of chemo. For example, many good drugs are available to help prevent or treat nausea and vomiting.

Certain drugs can have other side effects. For example, cisplatin can damage nerves (called *neuropathy*). This can sometimes lead to hearing loss or pain, burning, or tingling sensations; sensitivity to cold or heat; or weakness in the hands and feet. In most cases this gets better after treatment is stopped, but it may last a long time in some people. For more on nerve damage, see [Peripheral Neuropathy Caused by Chemotherapy](#)¹.

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 side effects from getting worse.

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/treatment/treatments-and-side-effects/physical-side-effects/peripheral-neuropathy.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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American Society of Clinical Oncology. Nasopharyngeal Cancer: Treatment Options. 07/2017. Accessed at www.cancer.net/cancer-types/nasopharyngeal-cancer/treatment-options on April 23, 2018.

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See all references for Nasopharyngeal Cancer
(www.cancer.org/cancer/nasopharyngeal-cancer/references.html)

Last Revised: September 24, 2018

Targeted Drug Therapy for Nasopharyngeal Cancer

As researchers have learned more about the changes in cells that cause cancer, they have been able to develop newer drugs that target these changes. These targeted drugs work differently from standard [chemotherapy](#) (chemo) drugs. They may work in some cases when chemo drugs don't, or they may help chemo drugs work better. Targeted drugs also often have different (and often less severe) side effects.

Cetuximab (Erbix)

Cetuximab is a monoclonal antibody (a man-made version of an immune system protein) that targets the epidermal growth factor receptor (EGFR). EGFR is a protein found on the surface of cells. It normally receives signals telling the cells to grow and

divide. Nasopharyngeal cancer (NPC) cells sometimes have more than normal amounts of EGFR, which can help them grow faster. By blocking EGFR, cetuximab may slow or stop this growth.

The exact role of cetuximab in treating NPC is still being studied. It's most often used along with chemo and/or radiation in cases where the cancer has spread, come back, or continued to grow after initial chemo.

Cetuximab is given by IV infusion, either once a week or every other week. Common side effects include:

- Skin problems, such as an itchy, acne-like rash on the face and chest, which can lead to infections
- Headache
- Tiredness and weakness
- Fever
- Diarrhea
- Nausea and vomiting
- Weight loss

A rare but serious side effect of cetuximab is an allergic reaction during the first infusion, which could cause breathing problems and low blood pressure. You will be given medicine before treatment to help prevent this.

More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see [Targeted Cancer Therapy](#)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/targeted-therapy.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Eli Lilly and Company, ImClone LLC. Package insert: ERBITUX - cetuximab solution.

October 2016. Accessed at <http://uspl.lilly.com/erbitux/erbitux.html> on April 23, 2018.

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See all references for Nasopharyngeal Cancer
(www.cancer.org/cancer/nasopharyngeal-cancer/references.html)

Last Revised: April 7, 2021

Immunotherapy for Nasopharyngeal Cancer

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 nasopharyngeal 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 nasopharyngeal 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 Immunotherapy¹](#).

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects²](#).

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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Last Revised: June 19, 2019

Treatment Options by Stage of Nasopharyngeal Cancer

Your cancer care team will recommend treatment options depending on the stage – the extent of the cancer in the nasopharynx and if and how far the cancer has spread. Nasopharyngeal cancer (NPC) in children is treated largely the same way as NPC in adults. Experts agree that the best way to treat NPC in the more advanced stages is in a clinical trial.

Stages 0 and I

The usual treatment for these early stage cancers is [radiation therapy](#) aimed at the tumor.

The cancer has not yet spread to lymph nodes in these stages, but the nearby lymph nodes in the neck are usually treated with radiation therapy as well. This is preventive (prophylactic) radiation. It's done because some patients may have cancer cells in these lymph nodes that can't be detected. Although there are too few cancer cells in the lymph nodes to cause them to be enlarged, these cells could continue to grow and

spread if not destroyed by radiation therapy.

Stages II, III, IVA, and IVB

These cancers have spread outside of the nasopharynx, which may mean spread to lymph nodes in the neck or above the collarbone.

Patients with these stages of NPC usually get chemoradiation ([chemotherapy](#) given along with [radiation therapy](#)) to the nasopharynx and neck lymph nodes. The chemo drug most often used is cisplatin, but sometimes it's given along with another drug. This is usually followed by more chemo, most often with cisplatin plus 5-FU. Most studies have found that chemoradiation helps patients live longer than just radiation therapy alone. But adding chemo leads to more side effects, which can affect quality of life. It's important to understand what the side effects are likely to be before starting this treatment.

Other treatment options in these stages include induction chemo followed by chemoradiation or just chemoradiation, or possibly [immunotherapy](#) (alone or with chemo).

If cancer is still in the lymph nodes after this treatment, [surgery](#) (neck dissection) may be done to remove the lymph nodes.

Stage IVC

Some NPCs diagnosed before the current staging system was in place may have been given the stage IVC. These NPCCs have spread to distant parts of the body and can be hard to treat. The usual treatment is [chemo](#), often with cisplatin and one other drug. If there's no sign of the cancer after chemo, either [radiation therapy](#) to the nasopharynx and the lymph nodes in the neck or chemoradiation is given to try to kill any remaining cancer cells. Another option in some cases is to give chemoradiation as the first treatment. [Immunotherapy](#) is a newer option to treat some of these cancers, either alone or along with chemo.

If there are still signs of cancer after the initial chemo, another chemo regimen using different drugs may be tried. Chemotherapy plus the [targeted drug](#) cetuximab (Erbix) or immunotherapy may be other options.

Recurrent nasopharyngeal cancer

Cancer is called *recurrent* when it come backs after treatment. Recurrence can be local (in or near the same place it started) or distant (spread to organs such as the lungs or bone). If NPC returns after treatment, your choices depend on the location and extent of the cancer, which treatments were used the first time around, and your overall health. It's important to understand the goal of any further treatment – whether it's to try to cure the cancer, to slow its growth, or to help relieve symptoms – as well as the likelihood of benefits and risks.

Some tumors that recur in the nasopharynx can be removed by [surgery](#) that's done through the nose (called *endoscopic skull base surgery*). This is a specialized surgery that should only be done by a surgeon with a great deal of experience with it, so it's not available at all medical centers.

Recurrent NPC in regional (neck) lymph nodes can sometimes be treated with [radiation therapy](#). But if doctors believe that more radiation would cause serious side effects or if the cancer didn't respond to radiation the first time, surgery (neck dissection) may be used instead.

If the cancer recurs in distant sites, options might include [chemotherapy](#) or [immunotherapy](#) (or both). If chemo has been given already, different chemo drugs may be tried. The [targeted drug cetuximab](#) may be given along with chemo, but this is usually done as part of a clinical trial.

New drug treatments and new surgical procedures being tested in [clinical trials](#)¹ may help some people with recurrent NPC, as well as improve knowledge that can help others with NPC in the future.

If the cancer can't be cured, further treatments may be aimed at slowing its growth or relieving symptoms caused by the cancer. For example, if the cancer has spread to the spine, radiation may be given to the area to relieve pain and reduce the chances of further problems. Even if a cure is not possible, it's important to remember that there are many [options to relieve symptoms](#)² of advanced cancer.

Hyperlinks

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

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Last Revised: June 19, 2019

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