Treating Nasopharyngeal Cancer

This information represents the views of the doctors and nurses serving on the American Cancer Society’s Cancer Information Database Editorial Board. These views are based on their interpretation of studies published in medical journals, as well as their own professional experience.

The treatment information in this document is not official policy of the 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.

General treatment information for nasopharyngeal cancer

After the cancer is found and staged, your cancer care team will discuss treatment options (choices) with you. Depending on the stage of the cancer, your overall health, and other factors, your treatment options may include:

- Surgery
- Radiation therapy
- Chemotherapy
- Targeted therapy

Depending on the stage of the cancer, some of these treatments may be combined. For most nasopharyngeal cancers (NPCs), a combination of radiation therapy and chemotherapy is used.
Based on the stage of the cancer, you may have different types of doctors on your treatment team. These doctors may include:

- An **otolaryngologist** (also known as an ear, nose, and throat, or **ENT doctor**): a surgeon who treats certain diseases of the head and neck.
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy.
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy or targeted therapy.

Many other specialists may be involved in your care as well, including nurse practitioners, nurses, nutrition specialists, social workers, and other health professionals.

It is important to discuss all of your treatment options, including goals and possible side effects, with your doctors to help make the decision that best fits your needs. (See the section **What Should You Ask Your Doctor About Nasopharyngeal Cancer?** for some questions to ask.) If time permits, it is often a good idea to get a second opinion. A second opinion can give you more information and help you feel confident about your chosen treatment plan.

The next few sections describe the various types of treatments used for nasopharyngeal cancers. This is followed by a description of the **most common approaches used for these cancers, based on their stage**.

### Surgery for Nasopharyngeal Cancer

Because the nasopharynx is a hard place to operate on and because other types of treatment are often effective, surgery is seldom the main treatment for patients with nasopharyngeal cancer (NPC). When surgery is used, it is most often to remove lymph nodes in the neck that haven’t responded to other treatments.

#### Removing 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 cancer (and nearby tissues) closely in the lab to
make sure that none has been left behind.

**Removing 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.

There are several types of neck dissection surgery. They differ in the amount of tissue removed from the neck.

- A *partial* or *selective neck dissection* removes only lymph nodes that are closest to the primary tumor site 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 preserved.
- A *radical 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.

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. These side effects are caused by the effects of the operation on certain nerves that supply these areas. 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 mobility.

- References
  See all references for Nasopharyngeal Cancer

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**Radiation Therapy for Nasopharyngeal Cancer**

Radiation therapy uses high-energy x-rays or particles to destroy cancer cells or slow their rate of growth. It is 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 with radiation to try to increase its effects. This treatment, known as *chemoradiation*, can be better than radiation alone at fighting the cancer, but it also tends to have more side effects. (This is discussed more in the section, *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 in case a few cancer cells have spread there. If the lymph nodes are known to have cancer cells, higher radiation doses are used.

Different types of radiation therapy can be used to treat NPC:

**External beam radiation therapy (EBRT)**

This type of radiation therapy uses x-rays from a machine outside the patient’s body to kill cancer cells. It is 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. The procedure itself is painless. Each treatment lasts only a few minutes, although 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 often given using a technique such as intensity-modulated radiation therapy (IMRT) that focuses the radiation better and lowers the radiation exposure to nearby healthy tissues.

**Stereotactic radiosurgery** is a type of radiation treatment that delivers a large, precise radiation dose to the tumor area in a single session. (There is 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)**

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 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 body tissues.

The implant is usually left in place for several days while the patient stays in a private hospital room. The length of time that visitors, nurses, and other caregivers can spend with the patient may be limited because of potential radiation exposure, but this depends on the type of radiation. The implant is removed before the patient goes home.

Brachytherapy may be used if the cancer comes back after external beam radiation therapy (although stereotactic radiosurgery may be used instead, as it is less invasive). 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:

- Problems with hearing or vision because of damage to certain nerves
- Damage to bones in the skull
- Tooth problems
- Damage to the salivary glands

Radiation to these areas can make any tooth problems that you already have worse and hard to fix. Most doctors advise that you have your teeth checked by a dentist before you have 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 you will have problems later.

A major concern with radiation therapy for NPC is that it can damage the salivary glands. This damage can result in dry mouth that does not go away, making 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 radiotherapy techniques such as IMRT are 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.

The thyroid gland is often damaged if the neck area is treated with external beam radiation. The damage doesn’t cause problems seen right way, 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.

The pituitary gland, which is responsible for controlling many hormones in the body, can also be damaged by treatment of a tumor in the nasopharynx. This can also be found with blood tests. If the damage is serious enough, this might require taking certain hormones to replace the ones that are missing.

The carotid arteries, which are major blood vessels in the neck that deliver blood to the brain, can sometimes become narrowed after radiation, which could raise a person’s risk of stroke or other problems. This usually takes several years to occur.

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

For more general information about radiation therapy, see the Radiation Therapy section of our website, or our document A Guide to Radiation Therapy.

- References
  See all references for Nasopharyngeal Cancer

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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 also be given after radiation (or 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 either 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 recommended for patients in poor health, but advanced age by itself is not a barrier to getting chemo.
Cisplatin is the chemo drug used most often to treat NPC. It is used alone as part of chemoradiation, but may be combined with another drug, 5-fluorouracil (5-FU) if given after radiation.

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

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

Often, combinations of 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 are given and how long they are taken. 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 after treatment is finished. Once chemo is started, 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.
Some drugs can have other side effects. For example, cisplatin can damage nerves (called neuropathy). This can sometimes lead to hearing loss or symptoms in the hands and feet such as pain, burning or tingling sensations, sensitivity to cold or heat, or weakness. In most cases this improves once treatment is stopped, but it may last a long time in some people. For more information on nerve damage, see our document *Peripheral Neuropathy Caused by Chemotherapy*.

In some cases, the doses of the chemo drugs may need to be reduced or treatment may need to be delayed or stopped to prevent side effects from getting worse.

For more general information about chemotherapy, see the [Chemotherapy](#) section on our website.

- **References**
- See all references for Nasopharyngeal Cancer

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**Targeted 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 specifically target these changes. These targeted drugs work differently from standard chemotherapy (chemo) drugs. They may work in some instances when chemo drugs do not, or they may help chemo drugs work better. Targeted drugs also often have different (and less severe) side effects.

**Cetuximab (Erbitux®)**

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 is most often used along with chemo and/or radiation in cases where the cancer has come back or continues to grow after initial chemo.

Cetuximab is given by IV infusion, usually once a week. Common side effects include:

- Skin problems, such as an acne-like rash on the face and chest during treatment, which in some cases can lead to infections.
- Headache
- Tiredness
- Fever
- Diarrhea

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 may be given medicine before treatment to help prevent this.

For information about managing skin problems from targeted therapy, see our document Targeted Therapy.

- References
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Treatment Options, by Stage of Nasopharyngeal Cancer

Your cancer care team will recommend treatment options depending on the extent of the cancer at its site of origin and how far the cancer has spread, if at all. Nasopharyngeal cancer (NPC) in children is treated largely the same way as NPC in adults.
Stages 0 and I

The usual treatment for these early stage cancers is radiation therapy aimed at the nasopharyngeal tumor.

Although the cancer has not yet spread to lymph nodes in these stages, the nearby lymph nodes in the neck are usually treated with radiation therapy as well. This is considered preventive (prophylactic) radiation. 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 receive chemoradiation (chemotherapy given along with radiation therapy to the nasopharynx and neck lymph nodes). The chemotherapy (chemo) drug most often used is cisplatin, but sometimes another drug is used as well. 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.

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

Stage IVC

These nasopharynx cancers 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 is no sign of the cancer after chemotherapy, 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.

If there are still signs of cancer after the initial chemotherapy, another chemotherapy regimen using different drugs may be tried. Chemotherapy plus the targeted drug cetuximab (Erbitux) may be another option.

Because these cancers can be hard to treat effectively, taking part in a clinical trial of newer treatments may be a good option.
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 your cancer returns after treatment, the choices available to you depend on the location and extent of the cancer, which treatments were used the first time around, and your overall health. It is important to understand the goal of any further treatment – whether it is 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 using an approach 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 in this procedure, so it’s not available at all medical centers.

Recurrent NPC in regional (neck area) lymph nodes can sometimes be treated by additional radiation therapy. But if doctors believe that more radiation would cause serious side effects or if the initial response to radiation was incomplete, surgery (neck dissection) may be used instead.

Cancer that recurs in distant sites is usually treated with chemotherapy. If chemotherapy has been given already, different chemo drugs may be tried. The targeted drug cetuximab may be given along with chemo, generally on a clinical trial.

If chemo is no longer working, a newer option might be treatment with an immunotherapy drug such as pembrolizumab (Keytruda) or nivolumab (Opdivo). These drugs can help the body’s own immune system attack the cancer.

New drug treatments being tested in clinical trials and new surgical procedures may help some patients 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 distant spread of the cancer. For example, if the cancer has spread to the spine, radiation therapy may be given to the area to relieve pain and reduce the chances of further complications. Even if a cure is not possible, it is important to remember that there are many options to relieve symptoms of advanced cancer.

- References

*See all references for Nasopharyngeal Cancer*