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About Nasopharyngeal Cancer

Overview and Types

If you've been diagnosed with nasopharyngeal cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Nasopharyngeal Cancer?](#)

Research and Statistics

See the latest estimates for new cases of nasopharyngeal cancer in the US and what research is currently being done.

- [Key Statistics for Nasopharyngeal Cancer](#)
 - [What's New in Nasopharyngeal Cancer Research?](#)
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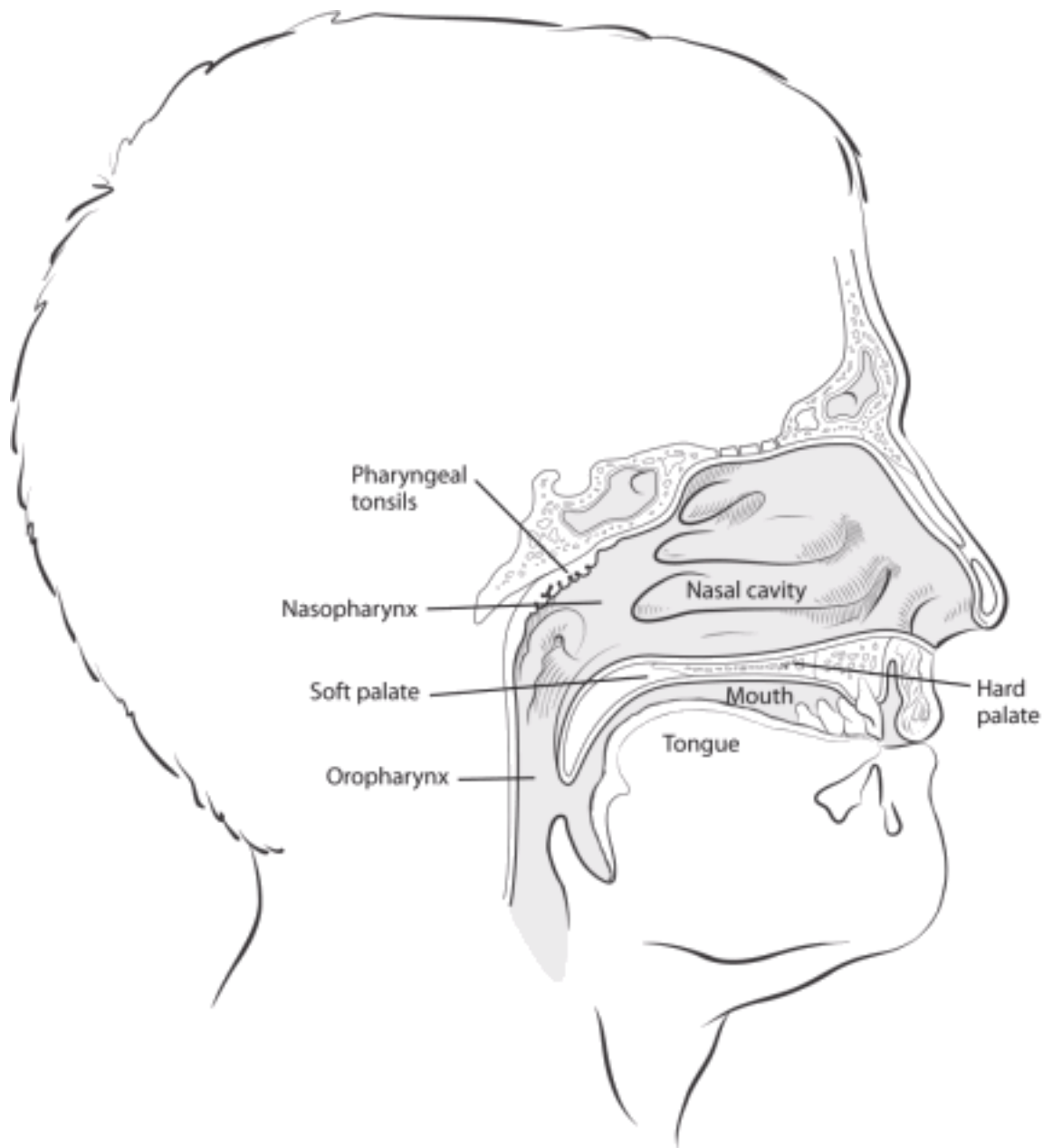
What Is Nasopharyngeal Cancer?

Nasopharyngeal cancer is a type of head and neck cancer. It starts in the nasopharynx, the upper part of the throat behind the nose and near the base of skull. Cancer starts when cells begin to grow out of control. Cells in nearly any part of the body can become cancer, and can spread to other areas. (To learn more about how cancers start and spread, see [What Is Cancer?](#)¹)

Where nasopharyngeal cancer forms

The nasopharynx is the upper part of the throat (pharynx) that lies behind the nose. It's a box-like chamber about 1½ inches on each edge. It lies just above the soft part of the roof of the mouth (soft palate) and just in back of the nasal passages.

The nasopharynx serves as a passageway for air traveling from the nose to the throat (and then on to the lungs).



Types of nasopharyngeal tumors

Several types of tumors can develop in the nasopharynx. Some of these tumors are benign (not cancer), but others are malignant (cancer). It's important to talk with your doctor about what type of tumor you might have.

Nasopharyngeal carcinoma (NPC)

Most nasopharyngeal cancers are nasopharyngeal carcinoma (NPC). It is by far the most common cancer in the nasopharynx. *Carcinoma* is cancer that starts in the cells that line the internal and external surfaces of the body (called *epithelial cells*).

There are 3 types of NPC. They all start from epithelial cells that line the nasopharynx, but the cells of each type look different under a microscope:

- Non-keratinizing undifferentiated carcinoma (this is the most common type of NPC in the US.)
- Non-keratinizing differentiated carcinoma
- Keratinizing squamous cell carcinoma

The treatment is the same for all types of NPC. The non-keratinizing types tend to respond better to treatment, but the stage of the cancer – how far it has grown and spread – is often more important than the type in predicting a person's outlook (prognosis).

Many NPCs also contain lots of immune system cells, especially white blood cells called *lymphocytes*. The term *lymphoepithelioma* is sometimes used to describe an undifferentiated NPC with many lymphocytes among the cancer cells. The presence of these cells does not usually affect the choice of treatment options. But they may help researchers develop new treatments, because they may be a clue to how the body attempts to fight the tumor. (See [What's New in Nasopharyngeal Cancer Research?](#))

Other cancers in the nasopharynx

Other types of cancers can also be found in the nasopharynx:

- *Lymphomas* can sometimes start in the nasopharynx. They are cancers of immune system cells called *lymphocytes*, which are found throughout the body, including in the nasopharynx. See [Non-Hodgkin Lymphoma²](#) to learn more.
- *Adenocarcinoma* and *adenoid cystic carcinoma* are cancers that can start in the

minor salivary glands in the nasopharynx. But these cancers are more commonly found in the nose (nasal cavity) or mouth (oral cavity). See [Oral Cavity and Oropharyngeal Cancer](#)³, [Nasal Cavity and Paranasal Sinuses Cancer](#)⁴, or [Salivary Gland Cancer](#)⁵ for more about these cancers.

Benign nasopharyngeal tumors

Benign nasopharyngeal tumors are fairly rare and tend to develop in children and young adults. These tumors do not spread to other parts of the body and are usually not life-threatening. They include tumors or malformations of the vascular (blood-carrying) system, such as *angiofibromas* and *hemangiomas*, and benign tumors of minor salivary glands within the nasopharynx.

Benign nasopharyngeal tumors don't always need treatment. When they do, the treatment is not the same as for nasopharyngeal cancer. If you have a benign tumor, talk to your doctor about what to expect.

Hyperlinks

1. www.cancer.org/cancer/cancer-basics/what-is-cancer.html
2. www.cancer.org/cancer/non-hodgkin-lymphoma.html
3. www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html
4. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer.html
5. www.cancer.org/cancer/salivary-gland-cancer.html

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Sinha S, Bhimji SS. Cancer, Nasopharynx. [Updated 2017 Oct 5]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2018 Jan-. Accessed at www.ncbi.nlm.nih.gov.proxy.library.emory.edu/books/NBK459256/ on April 19, 2018.

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

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Key Statistics for Nasopharyngeal Cancer

Nasopharyngeal cancer (NPC) is quite rare. In most parts of the world (including the United States), there's less than one case for every 100,000 people each year.

This cancer is much more common in certain parts of South Asia, the Middle East, and North Africa. In some parts of China there are as many as 21 cases per 100,000 people. It's also more common among Inuits of Alaska and Canada.

The risk of NPC increases slowly throughout life, but it can occur in people of any age, including children. About half of the people with NPC in the United States are younger than 55 years old.

References

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What's New in Nasopharyngeal Cancer Research?

Research into the causes, prevention, and treatment of nasopharyngeal cancer (NPC) is being done in many university hospitals, medical centers, and other institutions around the world. Because NPC is rare, it's been hard to study it well. Most experts agree that treatment in a clinical trial should be considered for any type or stage of NPC. This way people can get the best treatment available now and may also get the new treatments that are thought to be even better. The new and promising treatments discussed here are only available in clinical trials.

Causes, prevention, and early detection

Many studies are looking at how Epstein-Barr virus (EBV) infection as well as other risk factors cause cells of the nasopharynx to become cancer. These studies may someday lead to vaccines to help prevent some cases of NPC by preventing EBV infection.

Recent discoveries about EBV, its interaction with nasopharyngeal cells, and the immune system's reaction to EBV have led to new blood tests that may help detect NPC early and better predict the response to treatment.

Researchers hope that newer, very sensitive tests for EBV might lead to screening tests for NPC, and better ways to predict when NPC is likely to come back after treatment. These possibilities are now being studied in areas of the world where this cancer is more common.

Researchers believe there also may be certain gene changes that make a person more likely to have NPC. Studies to look for other gene changes linked to NPC are going on in countries where NPC is more common.

Treatment

New radiation therapy techniques

Most types of radiation therapy use radiation in the form of x-rays. Other types of radiation uses protons and carbon ions to kill cancer cells. These are being studied, especially in China, but so far haven't been proven to be better than standard x-ray radiation.

Doctors are also studying the best schedule for giving radiation therapy. External beam radiation treatments are usually given once a day, 5 days a week, for many weeks in a row. Studies are now under way to see if schedules that either give the doses over fewer days or give smaller doses twice a day might work better.

Photodynamic therapy

Researchers are looking at ways to use this cancer-focused treatment for NPC. Photodynamic therapy or PDT uses a cell-killing drug that's activated by a laser light. It's already used to treat some head and neck cancers. Doctors are studying how it might be used to shrink NPC tumors that are causing problems, and its role in treating tumors that come back after radiation.

Chemotherapy

Researchers continue to develop new chemo drugs , new drug combinations, and new ways to give drugs that might be more effective against advanced NPC. Several drugs that are already used to treat other cancers, such as capecitabine, oxaliplatin, and gemcitabine, have been studied for use against NPC as well. Clinical trials are looking for the best combination of chemo drugs and how they should be used along with radiation therapy. For example, studies are comparing how well chemo works when given before, during, or after radiation therapy.

Immunotherapy

NPC seems to be caused at least in part by infection with the Epstein-Barr virus (EBV). Although patients' immune systems can be shown to have reacted against EBV, this doesn't seem to be enough to kill the cancer. Finding and targeting cell proteins linked to EBV and the cells it affects could lead to new, more cancer-focused treatment options. Understanding how EBV interacts with the immune system could also lead to treatments that boost the immune system's response to NPC and maybe even keep it from developing.

One way to do this is to remove T lymphocytes (immune system cells) from a patient's and alter them in the lab to make more cells and increase their power to kill EBV. The cells are then injected back into the patient. Early results with small numbers of patients have been promising, and larger studies of this technique are now under way.

Predicting treatment outcomes

Researchers are looking for ways to know how well NPC will respond to treatment and

understand how likely it is to come back after treatment. This information would allow doctors to tailor treatment for each patient so that the best treatment is used. One area of research is looking for a link between a person's blood cell counts and overall survival. Results have suggested a link, but a lot more research is needed.

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