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Nasopharyngeal Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Finding cancer early, when it's small and before it has spread, often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that's not always the case.

- [Can Nasopharyngeal Cancer Be Found Early?](#)
- [Signs and Symptoms of Nasopharyngeal Cancer](#)
- [Tests for Nasopharyngeal Cancer](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and likely response to treatment.

- [Nasopharyngeal Cancer Stages](#)
- [Survival Rates for Nasopharyngeal Cancer](#)

Questions to Ask About Nasopharyngeal Cancer

Here are some questions you can ask your cancer care team to help you better understand your cancer diagnosis and treatment options.

- [Questions to Ask About Nasopharyngeal Cancer](#)
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Can Nasopharyngeal Cancer Be Found Early?

In the United States and other countries where nasopharyngeal cancer (NPC) is fairly rare, doctors do not recommend routine screening for this cancer. (Screening is testing for cancer in people without any symptoms.) There are no simple exams or blood tests that can find this cancer early. Still, regular check-ups and visits to the dentist are recommended. The throat, mouth, and nose are looked at during these visits.

But in some parts of the world such as China, where NPC is more common, some people are being screened routinely for this cancer. They're first selected because their blood shows evidence of infection with the Epstein-Barr virus (EBV), although EBV infection is much more common than NPC. They get regular exams of the nasopharynx and neck. This approach can also be used in families when one member has developed NPC. It still isn't known if this lowers the death rate from NPC.

Sometimes NPC is found early because [symptoms](#) cause a person to see a doctor. The symptoms may seem unrelated to the nasopharynx (for instance, a constant feeling of fullness in one ear). But in most people, NPC doesn't cause symptoms until it reaches an advanced [stage](#).

References

American Society of Clinical Oncology. Nasopharyngeal Cancer: Screening. 07/2017. Accessed at www.cancer.net/cancer-types/nasopharyngeal-cancer/screening on April 21, 2018.

Chan KCA, Woo JKS, King A, et al. Analysis of Plasma Epstein-Barr Virus DNA to Screen for Nasopharyngeal Cancer. *N Engl J Med*. 2017;377(6):513-522.

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

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Signs and Symptoms of Nasopharyngeal Cancer

Most people with nasopharyngeal cancer (NPC) notice a **lump or mass in the neck** that leads them to see a doctor. There may be lumps on both sides of the neck towards the back. The lumps are usually not tender or painful. They're caused by the cancer spreading to lymph nodes in the neck, causing them to swell. Lymph nodes are glands or organs that contain collections of immune system cells. They're found throughout the body. Normally, they're smaller than the size of a pea.

Other possible symptoms of NPC include:

- Hearing loss, ringing in the ear, pain, or feeling of fullness in the ear (especially on one side only)
- Ear infections that keep coming back
- Nasal blockage or stuffiness
- Nosebleeds
- Headaches
- Facial pain or numbness
- Trouble opening the mouth
- Blurred or double vision
- Trouble breathing or talking

Ear infections are common in children, but are less common in adults. If you develop an infection in one ear and you haven't had ear infections in the past, it's important to have a specialist examine your nasopharynx. This is especially true if you don't have an upper respiratory tract infection (like a "cold") along with the ear infection.

Many of the symptoms and signs of NPC are more often caused by other, less serious diseases. Still, if you have any of these problems, it's important to see a doctor right away so the cause can be found and treated, if needed.

References

American Society of Clinical Oncology. Nasopharyngeal Cancer: Symptoms and Signs. 07/2017. Accessed at www.cancer.net/cancer-types/nasopharyngeal-cancer/symptoms-

and-signs on April 21, 2018.

National Cancer Institute. Nasopharyngeal Cancer Treatment (Adult) (PDQ®)—Patient Version. March 1, 2018. Accessed at www.cancer.gov/types/head-and-neck/patient/adult/nasopharyngeal-treatment-pdq on April 21, 2018.

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

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Tests for Nasopharyngeal Cancer

Nasopharyngeal cancer (NPC) is most often diagnosed when a person goes to a doctor because of [symptoms](#) such as a lump in the neck or stuffy nose, but no signs of a cold. The doctor will take a history and do an exam. The patient may then be sent to see an ear, nose and throat (ENT) specialist. The nasopharynx is hard to examine. Most other kinds of doctors do not have the specialized training or equipment to do a thorough exam of this part of the body.

Medical history and physical exam

If you have signs or symptoms that suggest you might have NPC, the doctor will want to get your complete medical history. You will be asked about the changes you've noticed, possible [risk factors](#)¹, and your family history.

A physical exam will be done to look for signs of NPC or other health problems. A more thorough exam of your nasopharynx will be done. During the exam, the doctor will pay special attention to your head and neck, including your nose, mouth, and throat; your facial muscles; and the lymph nodes in your neck. A hearing test may also be done.

Exams of the nasopharynx

The nasopharynx is deep inside the head and isn't easily seen, so special techniques are needed to examine this area. There are 2 main types of exams used to look inside the nasopharynx for abnormal growths, bleeding, or other signs of disease. Both types

are usually done in the doctor's office.

- For *indirect nasopharyngoscopy*, the doctor uses special small mirrors and bright lights to look at the nasopharynx and nearby areas.
- For *direct nasopharyngoscopy*, a fiber-optic scope known as a *nasopharyngoscope* to look directly at the lining of the nasopharynx. The scope is a thin, flexible, lighted tube that's put in through your nose. Numbing medicine is sprayed into your nose before the exam to make it easier. This is the method most often used to carefully examine the nasopharynx.

If a tumor starts under the lining of the nasopharynx (in the tissue called the *submucosa*), the doctor may not be able to see it. Because of this, imaging tests, like CT or MRI scans (see below), may be needed.

Biopsy

Symptoms and the results of exams can suggest that a person might have NPC, but the only way to be sure is by taking out cells from the abnormal area and looking at them under a microscope. This is called a *biopsy*. Different kinds of biopsies may be done, depending on where the abnormal area is.

Endoscopic biopsy

If a suspicious growth is seen in the nasopharynx, the doctor may take out a tiny piece of it with small instruments and the aid of a fiber-optic scope. Often, biopsies of the nasopharynx are done in the operating room as an outpatient procedure. The tissue sample is then sent to a lab, where a pathologist (a doctor who specializes in diagnosing and classifying diseases in the lab) looks at it under a microscope. If the biopsy sample contains cancer cells, the pathologist sends back a report describing the type of the cancer.

NPC cannot always be seen during an exam. If a person has symptoms suggesting NPC but nothing looks abnormal on exam, the doctor may biopsy normal-looking tissue, which may be found to contain cancer cells when looked at under the microscope.

Fine needle aspiration (FNA) biopsy

An FNA biopsy may be used if you have a suspicious lump in or near your neck. To do this, the doctor puts a thin, hollow needle into the lump. The needle is attached to a syringe which is used to aspirate (withdraw) a few drops of fluid containing cells and tiny

bits of tissue. The skin where the needle will be inserted might be numbed with a local anesthetic, but sometimes this isn't needed.

The cells are then looked at under a microscope to see if they're cancer cells.

An FNA biopsy can show if an enlarged lymph node in the neck is caused by a response to an infection, the spread of cancer from somewhere else (such as the nasopharynx), or a cancer that starts in lymph nodes – which is called a *lymphoma*. If the cancer started somewhere else, the FNA biopsy alone might not be able to tell where it started. But if a patient already known to have NPC has enlarged neck lymph nodes, FNA can help find out if the spread of NPC caused the swelling.

Imaging tests

Imaging tests use x-rays, magnetic fields, sound waves, or radioactive particles to make pictures of the inside of your body. Imaging tests may be done for a number of reasons, including to help find a suspicious area that might be cancer, to learn how far cancer may have spread, and to help see if treatment is working.

Chest x-ray

If you've been diagnosed with NPC, a plain [x-ray of your chest](#)² may be done to see if the cancer has spread to your lungs. This is very unlikely unless your cancer is far advanced. If the results are normal, you probably don't have cancer in your lungs.

Computed tomography (CT) scan

The [CT scan](#)³ is an x-ray test that produces detailed cross-sectional images of your body.

A CT scan of the head and neck can provide information about the size, shape, and position of a tumor and can help find enlarged lymph nodes that might contain cancer. CT scans or MRIs are important in looking for cancer that may have grown into the bones at the base of the skull. This is a common place for nasopharyngeal cancer to grow. CT scans can also be used to look for tumors in other parts of the body.

Magnetic resonance imaging (MRI) scan

Like CT scans, [MRI scans](#)⁴ make detailed images of soft tissues inside the body. But MRI scans use radio waves and strong magnets instead of x-rays. A contrast material

called *gadolinium* is often injected into a vein before the scan to better see details.

MRIs can be used to try to find out if the cancer has grown into structures near the nasopharynx. MRIs are a little better than CT scans at showing the soft tissues in the nose and throat, but they're not quite as good for looking at the bones at the base of the skull, a common place for NPC to grow.

Positron emission tomography (PET) scan

[PET scans](#)⁵ use a form of radioactive sugar that's put into the blood. Because cancer cells in the body are growing rapidly, they absorb large amounts of the sugar. After about an hour, you lie on the table for about 30 minutes while a special camera creates a picture of areas of radioactivity in the body. The picture is not finely detailed like a CT or MRI scan, but it provides helpful information about your whole body. Some machines are able to do both a PET and CT scan at the same time (PET/CT scan). This lets the doctor compare areas of higher radioactivity on the PET with the more detailed appearance of that area on the CT.

Your doctor may use this test to see if the cancer has spread to your lymph nodes. It can also help give the doctor a better idea of whether an abnormal area on a chest x-ray may be cancer. A PET scan can also be useful if your doctor thinks the cancer may have spread but doesn't know where.

Blood tests

Blood tests are not used to diagnose NPC, but they may be done for other reasons, such as to help find out if the cancer has spread to other parts of the body.

Routine blood counts and blood chemistry tests

Routine [blood tests](#)⁶ can help determine a patient's overall health. These tests can help diagnose nutrition problems, anemia (low red blood counts), liver disease, and kidney disease. And they may suggest the possibility of spread of the cancer to the liver or bone, which may lead to more testing.

Epstein-Barr virus (EBV) DNA levels

Tests to measure the blood level of EBV DNA may be done before and after treatment to help show how well treatment is working.

Hyperlinks

1. www.cancer.org/cancer/nasopharyngeal-cancer/causes-risks-prevention/risk-factors.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests/x-rays-and-other-radiographic-tests.html
3. www.cancer.org/treatment/understanding-your-diagnosis/tests/ct-scan-for-cancer.html
4. www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html
5. www.cancer.org/treatment/understanding-your-diagnosis/tests/nuclear-medicine-scans-for-cancer.html
6. www.cancer.org/treatment/understanding-your-diagnosis/tests/understanding-your-lab-test-results.html

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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)

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Nasopharyngeal Cancer Stages

After someone is diagnosed with nasopharyngeal cancer (NPC), doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It's used help know how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage of NPC is stage 0, also known as **carcinoma in situ** (CIS). The other stages range from I (1) through IV (4). Some stages are split further, using capital letters (A, B, etc.). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage. Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for NPC is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent of the main **tumor (T)**: How far has the tumor grown into nearby structures?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes in the neck? If so, how large are they?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant parts of the body? (The most common sites of spread are the lungs, liver, bones, or lymph nodes in distant parts of the body.)

These categories are mainly based on the results of any exams, biopsies, and imaging tests that have been done (described in [How Is Nasopharyngeal Cancer Diagnosed?](#)). Numbers or letters after T, N, and M provide more details about each of these factors.

Once the T, N, and M categories of the cancer have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more on this, see [Cancer Staging](#)².

The system described below is the most recent AJCC system for NPC, effective January 2018.

NPC staging can be complex. If you have questions about your cancer's stage and what it might mean for you, ask your doctor to explain it to you in a way you understand.

Stages of nasopharyngeal cancer

AJCC stage	Stage grouping	Stage description*
0	Tis N0 M0	The tumor is only in the top layer of cells lining the inside of the nasopharynx, and has not grown any deeper (Tis).
		The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
I	T1 N0 M0	The tumor is in the nasopharynx. It might also have grown into the oropharynx (the part of the throat in the back of the mouth) and/or nasal cavity but no farther (T1).
		The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
II	T1 (or T0) N1 M0	The tumor is in the nasopharynx. It might also have grown into the oropharynx (the part of the throat behind the mouth) and/or nasal cavity but no farther (T1). OR, no tumor is seen in the nasopharynx, but cancer is found in lymph nodes in the neck and is Epstein-Barr virus (EBV) positive, which makes it very likely to be NPC (T0).
		The cancer has spread to 1 or more lymph nodes on one side of the neck, or it has spread to lymph nodes behind the throat. In either case, no lymph node is larger than 6 cm (centimeters) across (N1). The cancer has not spread to distant parts of the body (M0).
	OR	
	T2 N0 or N1 M0	The tumor has grown into the tissues of the left or right sides of the upper part of the throat, but not into bone (T2).
		The cancer has not spread to nearby lymph nodes (N0). OR, it has spread to 1 or more lymph nodes on one side of the neck, or it has spread to lymph nodes behind the throat. In either case, no lymph node is larger than 6 cm across (N1).

		The cancer has not spread to distant parts of the body (M0).
III	T1 (or T0) N2 M0	<p>The tumor is in the nasopharynx. It might also have grown into the oropharynx (the part of the throat behind the mouth) and/or nasal cavity but no farther (T1). OR, no tumor is seen in the nasopharynx, but cancer is found in lymph nodes in the neck and is Epstein-Barr virus (EBV) positive, which makes it very likely to be NPC (T0).</p> <p>The cancer has spread to lymph nodes on both sides of the neck, none of which is larger than 6 cm across (N2). The cancer has not spread to distant parts of the body (M0).</p>
	OR	
	T2 N2 M0	<p>The tumor has grown into the tissues of the left or right sides of the upper part of the throat, but not into bone (T2). The cancer has spread to lymph nodes on both sides of the neck, none of which is larger than 6 cm across (N2).</p> <p>The cancer has not spread to distant parts of the body (M0).</p>
	OR	
IVA	T3 N0 to N2 M0	<p>The tumor has grown into the sinuses and/or the bones nearby (T3). The cancer might or might not have spread to nearby lymph nodes in the neck or behind the throat, but none are larger than 6 cm across (N0 to N2).</p> <p>The cancer has not spread to distant parts of the body (M0).</p>
	T4 N0 to N2 M0	<p>The tumor has grown into the skull and/or cranial nerves, the hypopharynx (lower part of the throat), the main salivary gland, or the eye or its nearby tissues (T4).</p> <p>The cancer might or might not have spread to nearby lymph nodes in the neck or behind the throat, but none are larger than 6 cm across (N0 to N2). The cancer has not spread to distant parts of the body (M0).</p>
	OR	
	Any T N3	The tumor might or might not have grown into structures

	M0	outside the nasopharynx (any T). The cancer has spread to lymph nodes that are either larger than 6 cm across, or located in the shoulder area just above the collarbone (N3). The cancer has not spread to distant parts of the body (M0).
IVB	Any T Any N M1	The tumor might or might not have grown into structures outside the nasopharynx (any T). The cancer might or might not have spread to nearby lymph nodes (any N). The cancer has spread to distant parts of the body (M1).

*The following additional categories are not listed in the table above:

- TX: Main tumor cannot be assessed due to lack of information.
- NX: Nearby lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/nasopharyngeal-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html

References

American Joint Committee on Cancer. Nasopharynx. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 103-111.

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Survival Rates for Nasopharyngeal Cancer

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can't tell you how long you will live, but they may help give you a

better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as he or she is familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares people with the same type and stage of cancer to people in the overall population. For example, if the **5-year relative survival rate** for a specific stage of nasopharyngeal cancer is 80%, it means that people who have that cancer are, on average, about 80% as likely as people who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the SEER* database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for nasopharyngeal cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by [AJCC TNM stages](#) (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the nasopharynx.
- **Regional:** The cancer has spread outside the nasopharynx to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body, such as the lungs or liver.

5-year relative survival rates for nasopharyngeal cancer

These numbers are based on people diagnosed with cancers of the nasopharynx between 2009 and 2016.

SEER stage	5-year relative survival rate
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Localized	85%
Regional	71%
Distant	49%
All SEER stages combined	61%

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread. But other factors, such as your age and overall health, and how well the cancer responds to treatment, can also affect your outlook.
- **People now being diagnosed with nasopharyngeal cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on people who were diagnosed and treated at least five years earlier.

*SEER = Surveillance, Epidemiology, and End Results

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Questions to Ask About Nasopharyngeal Cancer

As you deal with nasopharyngeal cancer (NPC) and the process of treatment, you need to have honest, open discussions with your cancer care team. Feel free to ask any question, no matter how minor it might seem. Here are some questions you might want to ask:

- What [kind of nasopharyngeal cancer](#)¹ do I have? Does this affect my options?
- Has my cancer spread beyond the nasopharynx?
- What is the [stage](#) of my cancer? What does the stage mean in my case?
- Are there other [tests](#) that need to be done before we can decide on treatment?
- Are there other doctors I need to see?
- How much experience do you have treating NPC?
- What [treatment choices](#)² do I have?
- What do you recommend and why?
- What's the goal of the treatment?
- What are the chances the cancer can be cured with treatment?
- How quickly do we need to decide on treatment?
- What should I do to be ready for treatment?
- How long will treatment last? What will it involve? Where will it be done?
- How will treatment affect my daily activities?
- What risks and side effects can I expect? How long are they likely to last?
- Is there anything I can do to help reduce side effects?
- What are the chances that my cancer will come back (recur)?
- What would we do if the treatment doesn't work or if the cancer recurs?
- What type of [follow-up](#)³ might I need after treatment?

Along with these sample questions, you might want to write down some of your own. For instance, you might want more information about recovery times so you can plan your work or activity schedule. Or you may want to ask about [getting a second opinion](#)⁴ or about [clinical trials](#)⁵ for which you may qualify. Keep in mind, too, that doctors aren't the only ones who can give you information. Other health care professionals, such as nurses and social workers, may have the answers you seek.

Hyperlinks

1. www.cancer.org/cancer/nasopharyngeal-cancer/about/what-is-nasopharyngeal-cancer.html
2. www.cancer.org/cancer/nasopharyngeal-cancer/treating.html
3. www.cancer.org/cancer/nasopharyngeal-cancer/after-treatment.html
4. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/seeking-a-second-opinion.html
5. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html

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