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Nasal Cavity and Paranasal Sinus Cancer Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for nasal cavity and paranasal sinus cancer.

- [What Are the Risk Factors for Nasal Cavity and Paranasal Sinus Cancers?](#)
- [Do We Know What Causes Nasal Cavity and Paranasal Sinus Cancers?](#)

Prevention

There is no way to completely prevent cancer. But there are things you can do that might lower your risk. Learn more.

- [Can Nasal Cavity and Paranasal Sinus Cancers Be Prevented?](#)

What Are the Risk Factors for Nasal Cavity and Paranasal Sinus Cancers?

A risk factor is anything that changes your chances of getting a disease like cancer.

Different cancers have different risk factors. For example, too much exposure to sunlight is a risk factor for skin cancer, and smoking is a risk factor for many different kinds of cancers.

But risk factors don't tell us everything. Having a risk factor, or even several, does not mean that you will get the disease. Many people with risk factors never develop these cancers, while people with these cancers may have few or no known risk factors.

Researchers have found a few risk factors that make a person more likely to develop nasal cavity and paranasal sinus cancer. Most of these are exposures to inhaled substances in the workplace.

Workplace exposures

People who work in certain jobs are more likely to develop [nasal cavity and paranasal sinus cancer](#)¹. The increased risk seems to be related to breathing in certain substances while at work, such as:

- Wood dusts from carpentry (such as furniture and cabinet builders), sawmills, and other wood-related industries
- Dusts from textiles (textile plants)
- Leather dusts (shoemaking)
- Flour (baking and flour milling)
- Nickel and chromium dust
- Mustard gas (a poison used in chemical warfare)
- Radium (a radioactive element rarely used today)

These workplace exposures have less clear links to nasal and paranasal sinus cancer:

- Glues
- [Formaldehyde](#)²
- Organic solvents

Smoking

Some studies have found that [smoking](#)³ might increase the risk of nasal cavity cancer.

Human papillomavirus (HPV) infection

The human papillomavirus (HPV⁴) is a group of over 100 related viruses. They are called **papilloma viruses** because some of them cause a type of benign (not cancer) growth called a papilloma, more commonly known as a wart. Some types of HPV can cause cancers of the [cervix](#)⁵, [vagina](#)⁶, [anus](#)⁷, [vulva](#)⁸, [penis](#)⁹, [mouth](#)¹⁰, and [throat](#)¹¹. HPV has been detected in some cancers of the nasal cavity and paranasal sinuses. These HPV-linked cancers tend to have a better outcome. But cancers of the nasal cavity or sinuses linked to HPV are rare.

Hereditary retinoblastoma treatment

People with the hereditary form of [retinoblastoma](#)¹², a type of eye cancer that typically develops in children, have an increased risk of nasal cavity cancer if the retinoblastoma was treated with radiation.

Hyperlinks

1. www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/about/what-is-nasal-paranasal.html
2. www.cancer.org/cancer/cancer-causes/formaldehyde.html
3. www.cancer.org/cancer/cancer-causes/tobacco-and-cancer.html
4. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
5. www.cancer.org/cancer/cervical-cancer.html
6. www.cancer.org/cancer/vaginal-cancer.html
7. www.cancer.org/cancer/anal-cancer.html
8. www.cancer.org/cancer/vulvar-cancer.html
9. www.cancer.org/cancer/penile-cancer.html
10. www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html
11. www.cancer.org/cancer/esophagus-cancer.html
12. www.cancer.org/cancer/retinoblastoma.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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National Cancer Institute. Paranasal Sinus and Nasal Cavity Cancer Treatment (PDQ®)—Patient Version. August 19, 2016. Accessed at www.cancer.gov/types/head-and-neck/patient/paranasal-sinus-treatment-pdq on November 13, 2017.

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

What Causes Nasal Cavity and Paranasal Sinus Cancers?

We don't know what causes each case of nasal cavity or paranasal sinus cancer. But we do know some of the risk factors for these cancers. (See [What Are the Risk Factors for Nasal Cavity and Paranasal Sinus Cancers?](#)) Scientists believe that some risk factors, such as workplace exposure to certain chemicals, may cause these cancers by damaging the DNA of cells that line the inside of the nose and sinuses.

DNA is the chemical in our cells that makes up our [genes](#)¹ – the instructions for how our cells function. We usually look like our parents because they are the source of our DNA. However, DNA affects more than how we look. Some genes have instructions for controlling when cells grow and divide.

- Genes that promote cell division are called **oncogenes**.
- Genes that slow down cell division or cause cells to die at the right time are called **tumor suppressor genes**.

Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes.

Some people inherit DNA mutations (changes) that increase their risk for developing certain cancers from a parent. But inherited changes in oncogenes or tumor suppressor

genes are not believed to cause very many cancers of the nasal cavity or paranasal sinuses.

Gene changes related to these cancers usually occur during life rather than before birth like inherited mutations do. These **acquired** mutations likely cause most nasal cavity and paranasal sinus cancers. They may result from events such as exposure to radiation or cancer-causing chemicals. Sometimes they occur for no apparent reason.

Not all cancers have the same gene changes. So far, few specific gene changes have been found in nasal cavity and paranasal sinus cancers. Several different types of cancer can start in these areas, each of which may have different changes.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/genetics/genes-and-cancer.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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Can Nasal Cavity and Paranasal Sinus Cancers Be Prevented?

Not all nasal cavity and paranasal sinus cancers can be prevented, but the risk of developing these cancers can be greatly reduced by avoiding certain **risk factors**, such as workplace exposures to certain substances. Fortunately, awareness of the possible danger from these exposures has increased, and workplace safety measures to help protect people from them have improved. Still, if you are working with any of the substances listed in the section [What Are the Risk Factors for Nasal Cavity and Paranasal Sinus Cancers?](#), it's important for you to find out if you are being protected from harmful exposure.

[Cigarette smoking](#)¹ is another avoidable risk factor for cancers of the nasal cavity and sinuses.

Most people with cancer of the nasal cavity and paranasal sinuses have no known risk factors, so there is currently no way to prevent most of these cancers.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/tobacco-and-cancer.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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