What Are Oral Cavity and Oropharyngeal

Oral cavity cancer starts in the mouth. It might also be called oral cancer. Oropharyngeal cancer starts in the middle part of the throat just behind the oral cavity that can be seen when the mouth is open.

Cancer starts when cells in the body start to grow out of control. To learn more about how cancers start and spread, see What Is Cancer?[1]

The oral cavity (mouth) and oropharynx (throat)

The **oral cavity** includes the lips, the inside lining of the lips and cheeks (buccal mucosa), the teeth, the gums, the front two-thirds of the tongue, the floor of the mouth below the tongue, the bony roof of the mouth (hard palate) and the area behind the wisdom teeth (called the retromolar trigone).

The **oropharynx** is the middle part of the throat just behind the oral cavity. It can be seen when your mouth is wide open. It includes the base of the tongue (the back third of the tongue), the soft palate (the back part of the roof of the mouth), the tonsils, and the side and back walls of the throat.

The oral cavity and oropharynx help you breathe, talk, eat, chew, and swallow. Minor salivary glands all over the oral cavity and oropharynx make saliva (spit) that keeps your mouth and throat moist and helps you digest food.

Ask your doctor to explain or show you where your cancer is. Explore the 3D interactive model here to learn more.

Almost all of the cancers in the oral cavity and oropharynx are squamous cell carcinomas, also called squamous cell cancers. These cancers start in squamous cells, which are flat, thin cells that form the lining of the mouth and throat.

The earliest form of squamous cell cancer is called **carcinoma in situ**. Thismeans that the cancer cells are only in the layer of cells called the **epithelium**(the top layer of cells lining the oral cavity and oropharynx). This is different from invasive squamous cell cancer, where the cancer cells have grown past the epithelium, into the deeper layers of the oral cavity or oropharynx.

HPV-related cancers: Infection with certain high-risk types of the human papillomavirus (HPV)[2] causes most of the squamous cell cancers of the oropharynx (called **HPV-positive cancer**). HPV is rarely associated with oral cavity cancer. HPV-positive cancers are seen more often in young people with no history of tobacco or alcohol use. These cancers tend to have a better outcome (prognosis) than squamous cell cancers not related to an HPV infection (**HPV-negative cancer**). This is most likely because HPV-positive cancers shrink when treated with chemotherapy and radiation. See Risk Factors for Oral Cavity and Oropharyngeal Cancers [3].

Verrucous carcinoma is a rare type of squamous cell cancer that is most often found in the gums and cheeks. It's a low-grade (slow growing) cancer that hardly ever spreads to other parts of the body.

Other types of oral cavity and oropharynx cancers

Minor salivary gland cancers: These cancers can start in the glands in the lining of the mouth and throat. There are many types of minor salivary gland cancers, including adenoid cystic carcinoma, mucoepidermoid carcinoma, and polymorphous low-grade adenocarcinoma. To learn more about these cancers, as well as benign salivary gland tumors, see Salivary Gland Cancer[4].

Lymphomas: The tonsils and base of the tongue contain immune system (lymphoid) tissue, where cancers called **lymphomas** can start. For more information about these cancers, see Non-Hodgkin Lymphoma[5] and Non-Hodgkin Lymphoma in Children[6].

Leukoplakia and erythroplakia (possible pre-cancer conditions)

Leukoplakia and erythroplakia are terms used to describe certain types of tissue changes that can be seen in the mouth or throat:

- Leukoplakia is a white or gray area that does not come off when scraped.

- Erythroplakia is a flat or slightly raised, red area that often bleeds easily if it's scraped.
- Erythroleukoplakia is a patch with both red and white areas.

Your dentist or dental hygienist may be the first person to find these white or red patches. They might be cancer, they might be a pre-cancer condition called **dysplasia**, or they could be a harmless change.

The most common causes of leukoplakia and erythroplakia are smoking and chewing tobacco. Poorly fitting dentures that rub against the tongue or the inside of the cheeks can also cause these changes. But sometimes, there's no clear cause.

Most cases of leukoplakia do not turn into cancer. But some leukoplakias are either cancer when first found or have pre-cancer changes that can turn into cancer if not properly treated. Erythroplakia and erythroleukoplakia are less common, but are usually more serious. More of these red lesions (compared to white lesions or leukoplakia) turn out to be cancer when they are biopsied or will develop into cancer later.

Dysplasia is a term that might be used to describe leukoplakia or erythroplakia. Dysplasia can be called mild, moderate, or severe, based on how abnormal the cells look in the lab. Knowing the degree of dysplasia helps predict how likely a lesion is to turn into cancer or go away on its own. For example, severe dysplasia is more likely than mild dysplasia to become cancer. Dysplasia may sometimes go away if the cause (such as poorly fitting dentures) is removed.

A biopsy is the only way to know for certain if an area of leukoplakia or erythroplakia has dysplastic (pre-cancer) cells or cancer cells. (See Tests for Oral Cavity and Oropharyngeal Cancers[7].) But other tests might be used first to help determine if a biopsy is needed or to choose the best area to sample for a biopsy. These tests are described in Can Oral Cavity and Oropharyngeal Cancers Be Found Early?[8]

Still, it's important to note that most oral cancers do not develop from pre-existing lesions (either leukoplakia or erythroplakia).

Benign (not cancer) tumors

Many types of benign tumors and tumor-like changes can start in the mouth or throat, such as these:

- Peripheral giant cell granuloma
- Fibroma

- Granular cell tumor
- Schwannoma
- Neurofibroma
- Pyogenic granuloma
- Oral hemangioma

These non-cancer tumors start from different kinds of cells and have many causes. Some of them may cause problems, but they're not likely to be life-threatening. The usual treatment for these types of tumors is surgery to remove them completely since they are unlikely to recur (come back).

Hyperlinks

1. www.cancer.org/cancer/understanding-cancer/what-is-cancer.html
2. www.cancer.org/cancer/risk-prevention/hpv/hpv-and-cancer-info.html
3. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/causes-risks-prevention/risk-factors.html
4. www.cancer.org/cancer/types/salivary-gland-cancer.html
5. www.cancer.org/cancer/types/non-hodgkin-lymphoma.html
6. www.cancer.org/cancer/types/childhood-non-hodgkin-lymphoma.html
7. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/detection-diagnosis-staging/how-diagnosed.html
8. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/detection-diagnosis-staging/detection.html

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Key Statistics for Oral Cavity and Oropharyngeal Cancers

The American Cancer Society's most recent estimates for oral cavity and oropharyngeal

cancers in the United States are for 2025:

- About 59,660 new cases of oral cavity or oropharyngeal cancer
- About 12,770 deaths from oral cavity or oropharyngeal cancer

Oral cavity and oropharyngeal cancers occur most often in the following sites:

- The tongue
- The tonsils and oropharynx (the part of the throat behind the mouth)
- The gums, floor of the mouth, and other parts of the mouth

The rest are found in the lips, the minor salivary glands (which often occur in the roof of the mouth), and other sites.

What is the average age of people who get oral cavity or oropharyngeal cancer?

The average age of people diagnosed with these cancers is 64, but they can occur in young people. Just over 20% (1 in 5) of cases occur in people younger than 55.

2009 through 2022, after decades of decline. This is mainly because of an increase in oropharyngeal cancer mortality of almost 2% per year during that time.

For statistics related to survival, see Oral Cavity and Oropharyngeal Cancer Survival Rates[5].

Visit the American Cancer Society's Cancer Statistics Center[6] for more key statistics.

Hyperlinks

1. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/causes-risks-prevention/risk-factors.html
2. www.cancer.org/cancer/risk-prevention/hpv.html
3. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/causes-risks-prevention/risk-factors.html
4. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/causes-risks-prevention/what-causes.html
5. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/detection-diagnosis-staging/survival-rates.html
6. cancerstatisticscenter.cancer.org/

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Last Revised: January 16, 2025

What's New in Oral Cavity and Oropharyngeal Cancer Research?

Research on oral and oropharyngeal cancers is being done in many university hospitals, medical centers, and other institutions worldwide. Each year, scientists find out more about what causes these diseases, how to prevent them, and how to better treat them.

Most experts agree that treatment in a clinical trial[1] should be considered for any type or stage of cancer in the head and neck areas. This way people can get the best treatment available now and may also get the new treatments that are thought to be even better.

DNA changes in oral cavity and oropharyngeal cancers

A great deal of research is being done to learn about the DNA changes that cause the cells in the oral cavity and oropharynx to become cancer.

In more than half of all head and neck cancers, the cancer cells have changes (mutations) in the *PIK3CA* gene. This can cause cells to grow out of control, which can lead to cancer. Drugs that target the protein made by the abnormal *PIK3CA* gene, called PI3K are already approved to treat some other types of cancer. Studies are now being done to see if similar targeted therapy drugs will work in head and neck cancer, especially HPV-positive cancers, because they tend to have too many copies of the *PIK3CA* gene.

One of the changes often found in DNA of oral cavity and oropharyngeal cancer cells, especially HPV-negative cancer cells, is a mutation in the *TP53* gene. The protein produced by this gene[2] (called p53) normally helps keep cells from growing too much and helps to destroy cells that are too damaged to be fixed. Changes in the *TP53* gene can lead to increased growth of abnormal cells and cancer.

Oral cavity and oropharyngeal cancers that are linked with HPV[9] tend to have a better outcome than those that are HPV-negative. Clinical trials are starting to look at these HPV-positive and HPV-negative cancers separately. For instance, studies are being done to see if HPV-positive cancers can be treated with less chemotherapy and/or radiation without reducing survival. Researchers are also working on treatments aimed at HPV infections or that target HPV-infected cancer cells. Studies are also looking for better ways to treat HPV-negative cancers, too, as well as the best ways to use the treatments we already have.

A great deal of research is focused on improving results from chemotherapy[10] (chemo) for people with these cancers. This includes figuring out which combinations of drugs work best and determining how best to use these drugs along with other forms of treatment. Researchers also continue to develop new chemo drugs that might be more effective against advanced oral and oropharyngeal cancers. They're also looking at whether drugs approved to treat other types of cancer might work for these cancers.

Doctors are always looking at newer ways of focusing radiation[11] on tumors more precisely to help them get more radiation to the tumor while limiting side effects to nearby areas. This is especially important for head and neck tumors like oral cavity and oropharyngeal cancers, where there are often many important structures very close to the tumor.

Clinical trials are studying targeted drug therapies[12] that might block the action of substances (such as growth factors and growth factor receptors) that cause head and neck cancers to grow and spread. Some targeted drugs are being studied that block the ability of the cancer cell to keep growing and help chemoradiation work better.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html
2. www.cancer.org/cancer/understanding-cancer/genes-and-cancer.html
3. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/surgery.html
4. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/chemotherapy.html
5. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/radiation-therapy.html

6. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials/what-you-need-to-know/phases-of-clinical-trials.html
7. www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials/what-you-need-to-know/phases-of-clinical-trials.html
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10. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/chemotherapy.html
11. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/radiation-therapy.html
12. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer/treating/targeted-therapy.html

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