

Cancer Association of South Africa (CANSA)



Fact Sheet on Cancer of the Pharynx (Throat)

Introduction

In humans the pharynx (throat) is part of the digestive system and also of the conducting zone of the respiratory system. The conducting zone also includes the nose, larynx, trachea, bronchi and bronchioles. Their function is to filter, warm, and moisten air and conduct it into the lungs. It makes up the part of the throat situated immediately posterior (behind) to the nasal cavity, posterior to the mouth and superior (above) to the oesophagus and larynx. The human pharynx is conventionally divided into three sections: the nasopharynx, the oropharynx and the hypopharynx. It is also important in vocalisation.

Cancer of the Pharynx

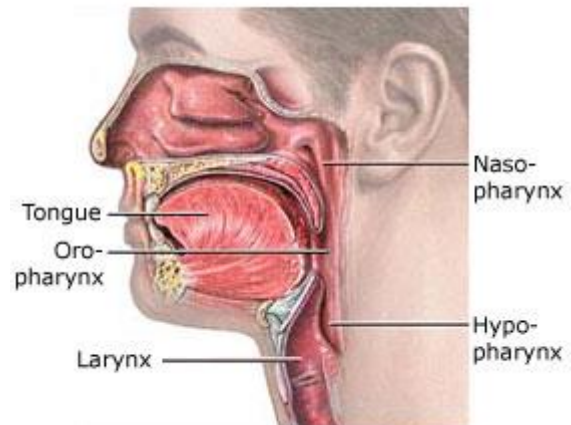
Pharyngeal cancer (also referred to as pharyngeal carcinoma) is cancer that occurs in the pharynx. The pharynx includes the space behind the nose and above the back of the throat.

It includes the following three parts:

- Nasopharynx
- Oropharynx
- Hypopharynx

[Picture Credit: Pharynx]

The nasopharynx connects the back of the nose to the back of the mouth. Cancer that develops in the nasopharynx is called nasopharyngeal cancer. One cannot see one's own nasopharynx directly, but by looking inside one's mouth in the mirror, it lies above the soft palate (the soft area at the back of the roof of the mouth) and uvula (the dangly bit) at the back of the mouth.



The other two parts of the pharynx are:

- The oropharynx – the part of the throat at the back of the mouth. Cancers that start in this area are oropharyngeal cancers.
- The hypopharynx (sometimes called the laryngopharynx) – it sits behind and on either side of the larynx (voice box). Cancer can also start in the hypopharynx.

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July 2020

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Incidence of Cancer of the Pharynx in South Africa

According to the outdated National Cancer Registry (2016), known for under reporting, the following number of cases of cancer of the naso-oropharynx was histologically diagnosed in South Africa during 2016:

Group - Males 2016	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All males	381	1:425	0,98%
Asian males	10	1:590	1,02%
Black males	191	1:575	1,46%
Coloured males	73	1:241	1,57%
White males	107	1:270	0,52%

Group - Females 2016	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All females	129	1:1 894	0,30%
Asian females	1	1	0,08%
Black females	95	1:3 175	0,29%
Coloured females	37	1:738	0,78%
White females	32	1:992	0,18%

The frequency of histologically diagnosed cases of cancer of the naso-oropharynx in South Africa for 2014 was as follows (National Cancer Registry, 2016):

Group - Males 2016	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	12	9	14	63	121	118	39	5
Asian males	0	0	0	2	2	5	1	0
Black males	9	8	12	34	55	53	17	3
Coloured males	1	1	1	13	25	24	6	2
White males	2	0	1	14	39	36	15	0

Group - Females 2016	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	11	12	8	23	30	31	9	5
Asian females	0	0	0	0	0	0	0	1
Black females	10	5	5	10	13	10	4	2
Coloured females	1	5	2	7	9	11	1	1
White females	0	2	1	6	8	10	4	1

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females', however, always reflect the correct totals.

Risk Factors for Pharyngeal Cancer

Risk factors for pharyngeal cancer include:

General Risk Factors:

- Lack of fruits and vegetables: A diet low in fruits and vegetables can increase the likelihood of developing throat cancer

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Lifestyle Factors:

- Tobacco use: The use of cigarettes, pipes and cigars all increase the likelihood of developing pharyngeal cancer.

Di Credico, G., Edefonti, V., Polesel, J., Pauli, F., Torelli, N., Serraino, D., Negri, E., Luce, D., Stucker, I., Matsuo, K., Brennan, P., Vilensky, M., Fernandez, L., Curado, M.P., Menezes, A., Daudt, A.W., Koifman, R., Wunsch-Filho, V., Holcatova, I., Ahrens, W., Laggiou, P., Simonato, L., Richiardi, L., Healy, C., Kjaerheim, K., Conway, D.I., Macfarlane, T.V., Thomson, P., Agudo, A., Znaor, A., Boaventura Rios, L.F., Toporcov, T.N., Franceschi, S., Herrero, R., Muscat, J., Olshan, A.F., Zevallos, J.P., La Vecchia, C., Winn, D.M., Sturgis, E.M., Li, G., Fabianova, E., Lissowska, J., Mates, D., Rudnai, P., Shangina, O., Swiatkowska, B., Moysich, K., Zhang, Z.F., Morgenstern, H., Levi, F., Smith, E., Lazarus, P., Bosetti, C., Garavello, W., Kelsey, K., McClean, M., Ramroth, H., Chen, C., Schwartz, S.M., Vaughan, T.L., Zheng, T., Menvielle, G., Boccia, S., Cadoni, G., Hayes, R.B., Purdue, M., Gillison, M., Schantz, S., Yu, G.P., Brenner, H., D'Souza, G., Gross, N.D., Chuang, S.C., Boffetta, P., Hashibe, M., Lee, Y.A. & Dal Maso, L. 2019.

OBJECTIVES: This study aimed at re-evaluating the strength and shape of the dose-response relationship between the combined (or joint) effect of intensity and duration of cigarette smoking and the risk of head and neck cancer (HNC). We explored this issue considering bivariate spline models, where smoking intensity and duration were treated as interacting continuous exposures.

MATERIALS AND METHODS: We pooled individual-level data from 33 case-control studies (18,260 HNC cases and 29,844 controls) participating in the International Head and Neck Cancer Epidemiology (INHANCE) consortium. In bivariate regression spline models, exposures to cigarette smoking intensity and duration (compared with never smokers) were modeled as a linear piecewise function within a logistic regression also including potential confounders. We jointly estimated the optimal knot locations and regression parameters within the Bayesian framework.

RESULTS: For oral-cavity/pharyngeal (OCP) cancers, an odds ratio (OR) >5 was reached after 30 years in current smokers of ~20 or more cigarettes/day. Patterns of OCP cancer risk in current smokers differed across strata of alcohol intensity. For laryngeal cancer, ORs >20 were found for current smokers of ≥20 cigarettes/day for ≥30 years. In former smokers who quit ≥10 years ago, the ORs were approximately halved for OCP cancers, and ~1/3 for laryngeal cancer, as compared to the same levels of intensity and duration in current smokers.

CONCLUSION: Referring to bivariate spline models, this study better quantified the joint effect of intensity and duration of cigarette smoking on HNC risk, further stressing the need of smoking cessation policies.

- Chewing tobacco or betel quid (gutkha)
- Alcohol use: Excessive use of alcohol can increase the risk for pharyngeal cancer

Other Factors:

- Human papillomavirus (HPV) Infection: New research has found that HPV infection is responsible for rising rates of pharyngeal cancer, in particular oropharyngeal cancer

Tam, M. & Hu, K. 2019.

“Oropharyngeal carcinoma associated with the human papillomavirus is increasing in incidence and represents a unique head and neck disease with favorable treatment outcomes. This review evaluates the evolving role of radiotherapy in regional management with an overall goal of treatment de-escalation in the appropriate patient. Determining the optimal approach and selection factors for

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treatment de-escalation is under active investigation. Response to induction chemotherapy, refining adverse pathologic factors after a primary surgical approach, decreasing radiation dose with or without chemotherapy in the definitive or adjuvant settings as well as more selective nodal level irradiation all are current strategies for treatment de-escalation. This review details the likely changes in regional radiotherapy management for oropharyngeal carcinoma in the modern human papillomavirus era and discusses future approaches to patient selection with the goal of reducing toxicities while maintaining function preservation and quality of life in group of patients who are younger and healthier than traditional head and neck cancer patients.”

- Gastro-oesophageal reflux disease (GERD): When acid leaks from the stomach into the oesophagus (food tube), it causes acid reflux. Chronic acid reflux is called GERD, and increases pharyngeal cancer risk depending on the frequency and severity of the acid reflux
- Contracting Epstein-barr virus (EBV): This common virus is transmitted via saliva. Contracting EBV increases the likelihood of developing pharyngeal cancer
- Low immunity - Research has found that people have an increased risk of mouth and throat cancer if they have a reduced immunity due to HIV or AIDS. Taking medicines to suppress immunity after organ transplants also gives a higher risk of mouth and throat cancer than in the general population.
- Previous cancer - People who have had mouth or oropharyngeal cancer have an increased risk of getting a second one. Women have a higher risk of a second oral cancer than men.
- People who have had some other types of cancer also have an increased risk of mouth and throat cancer. These include
 - Cancer of the food pipe (oesophagus)
 - Squamous cell skin cancer
 - Cervical, anal or genital cancer in women
 - Cancer of the back passage (rectum) in men
- Family history - People often worry that they are at a higher risk of cancer because someone in their family has it. There does seem to be a slightly higher risk of getting mouth cancer if one has a close relative (a parent, brother, sister or child) who has had mouth cancer. The reason for this is unknown
- Mouth conditions - Sometimes changes can happen in the cells of the lining of the mouth and they cause red or white patches to appear. These changes are called leukoplakia and erythroplakia. In some people these changes may develop into cancer over some years. Dentists can see these changes during dental checks so it is important to have regular dental appointments to find these changes early.
- Genetic conditions - People with certain syndromes caused by inherited changes (mutations) in particular genes have a high risk of mouth and throat cancer. These include:

[Picture Credit: Fanconi Anaemia]

- Fanconi anaemia – a genetic disorder that can affect children and adults from any ethnic background. It is also called Fanconi's syndrome. People with Fanconi anaemia are short, have bone changes, and are at risk of developing cancers, leukaemia, and bone marrow failure (aplastic anaemia).



A common symptoms of Fanconi anaemia is abnormal hands.

- Dyskeratosis congenita – a genetic syndrome that can cause aplastic anaemia, skin rashes, and abnormally shaped fingernails and toenails. People with this syndrome have a high risk of developing cancer of the mouth and throat when they are young

Signs and Symptoms of Pharyngeal Cancer

Signs and symptoms of pharyngeal cancer may include:

- A persistent cough
- Changes in your voice, such as hoarseness
- Difficulty swallowing
- Ear pain
- A lump or sore that does not heal
- Difficulty chewing, swallowing, or moving the jaw or tongue
- Changes in speech
- A persistent sore throat or a feeling that something is caught in the throat
- Unexplained weight loss
- Chronic bad breath
- Fatigue
- Loss of appetite, especially when prolonged: this may happen later in the course of the illness

An appointment should be made to see a doctor if any of the above signs and symptoms persist or any new signs and symptoms appear. Most pharyngeal cancer symptoms are not specific to cancer, so the doctor will likely investigate other more common causes first.

(Mayo Clinic; Cancer.Net; Macmillan Cancer Support).

Types of Pharyngeal Cancer

More than 9 out of 10 mouth and oropharyngeal cancers (90%) are squamous cell carcinoma. Squamous cells are the flat, skin like cells that cover the inside of the mouth, nose, larynx and throat. Carcinoma just means cancer. So squamous cell carcinoma is cancer that starts in these cells.

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There is an unusual type of squamous cell carcinoma called verrucous carcinoma. About 1 in 20 mouth cancers (5%) are this type. Verrucous carcinoma rarely spreads to other parts of the body but can grow very deeply into surrounding tissues.

Though most throat cancers involve the same types of cells, specific terms are used to differentiate the part of the throat where cancer originated:

- Nasopharyngeal cancer begins in the nasopharynx - the part of the throat just behind the nose
- Oropharyngeal cancer begins in the oropharynx - the part of the throat right behind the mouth that includes the tonsils
- Hypopharyngeal cancer (laryngopharyngeal cancer) begins in the hypopharynx (laryngopharynx) - the lower part of the throat, just above the oesophagus and windpipe
- Glottic cancer begins in the vocal cords
- Supraglottic cancer begins in the upper portion of the larynx and includes cancer that affects the epiglottis, which is a piece of cartilage that blocks food from going into the windpipe
- Subglottic cancer begins in the lower portion of the voice box, below the vocal cords

Diagnosis of Pharyngeal Cancer

The following tests may be used to diagnose pharyngeal cancer:

- Physical examination - Dentists and doctors often find lip and oral cavity cancers during routine check-ups. If a person shows signs of oral or oropharyngeal cancer, the doctor will take a complete medical history, asking about the patient's symptoms and risk factors. The doctor will feel for any lumps on the neck, lips, gums, and cheeks. Since patients with oral or oropharyngeal cancer have a higher risk of other cancers elsewhere in the head and neck region, the area behind the nose, the larynx (voice box), and the lymph nodes of the neck are also examined.
- Endoscopy - This test allows the doctor to see inside the mouth and throat. Typically, an endoscope (a thin, flexible tube with an attached light and view lens) is inserted through the nose to examine the head and neck areas. Sometimes, a rigid endoscope (a hollow tube with a light and view lens) is placed into the back of the mouth to see the back of the throat in more detail. The examination has different names depending on the area of the body that is examined, such as laryngoscopy (larynx), pharyngoscopy (pharynx), or a nasopharyngoscopy (nasopharynx). To make the patient more comfortable, these examinations are performed using an anaesthetic spray to numb the area. If tissue looks suspicious, the doctor will take a biopsy. Tests are often done in the doctor's office; however, sometimes, an endoscopy must be performed in an operating room at a hospital using a general anaesthesia.
- Biopsy - A biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. The sample removed during the biopsy is analysed by a pathologist (a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease). The type of biopsy performed will depend on the location of the cancer. In a fine needle aspiration biopsy, cells are withdrawn using a thin needle inserted directly

into the tumour. The cells are examined under a microscope for cancer cells (called cytologic examination).

- Oral brush biopsy - During routine dental examinations, some dentists are using a newer, simple technique to detect oral cancer in which a dentist uses a small brush to gather cell samples of a suspicious area. The specimen is then sent to a laboratory for analysis. This oral brush biopsy procedure is easy and can be done right in the dentist's chair with very little or no pain. If cancer is found using this method, it is recommended that a traditional biopsy (see above) be done to confirm the results.
- X-ray - An x-ray is a way to create a picture of the structures inside of the body, using a small amount of radiation. A dentist may take extensive x-rays of the mouth, including a panorex (panoramic view; see below).
- Barium swallow - There are two types of these tests that are generally used to look at the oropharynx and check a patient's swallowing. The first is a traditional barium swallow. During an x-ray exam, the patient is asked to swallow liquid barium so the doctor can look for any changes in the structure of the oral cavity and throat and see whether the liquid passes easily to the stomach. A modified barium swallow, or videofluoroscopy, is used to evaluate swallowing. The patient is asked to swallow liquid barium, pudding, and a cracker coated with barium.
- Panorex - This is a rotating, or panoramic, x-ray of the upper and lower jawbones to detect bone destruction from cancer or to evaluate teeth before radiation therapy or chemotherapy.
- Computed tomography (CT or CAT) scan - A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumours. A CT scan can also be used to measure the tumour's size. Sometimes, a contrast medium (a special dye) is injected into a patient's vein or given orally (by mouth) to provide better detail. A CT scan can help a doctor decide whether the tumour can be surgically removed and determine whether the cancer has spread to lymph nodes in the neck or lower jawbone.
- Magnetic resonance imaging (MRI) - An MRI uses magnetic fields, not x-rays, to produce detailed images of the body, especially images of soft tissue, such as the tonsils and base of the tongue. A contrast medium may be injected into a patient's vein or given orally to create a clearer picture.
- Ultrasound - An ultrasound uses sound waves to create a picture of the internal organs. This test can detect the spread of cancer to the lymph nodes in the neck (called the cervical lymph nodes).
- Positron emission tomography (PET) scan - A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive substance is injected into a patient's body. This substance is absorbed mainly by organs and tissues that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body.

- Panendoscopy - Is a diagnostic test used to examine the upper digestive system, including the oesophagus, stomach and first part of the small intestine. In this exam, an individual is given general anaesthesia in an operating room so that the entire region of the body can be closely inspected for cancer. Endoscopes are used to look at the throat, larynx, oesophagus and possibly the windpipe (trachea) and bronchi.

Other parts of the nose, mouth and throat, including the trachea (windpipe) and oesophagus, are also examined during this procedure. The doctor performing the procedure will look for any visible signs of a tumour. Doctors may use a special instrument through the scope to biopsy pieces of tissue that look potentially cancerous.

Recurrent (relapsed) Cancer

This is not an actual stage in the **TNM** system. Recurrent (relapsed) disease means that the cancer has come back (recurred) after treatment. Recurrent oral cavity or oropharyngeal cancer may return in the mouth or throat (local recurrence), in nearby lymph nodes (regional recurrence) or in another part of the body, such as the lungs (distant recurrence).

Treatment of Pharyngeal Cancer

Treatment is based on many factors, such as the location and stage of the cancer, the type of cells involved, overall health, and personal preferences. Benefits and risks of each of the options should be discussed with the treating doctor.

Radiation therapy - Radiation therapy uses high-energy beams, such as X-rays, to deliver radiation to the cancer cells, causing them to die. Radiation therapy can come from a large machine outside your body (external beam radiation). Or radiation therapy can come from small radioactive seeds and wires that can be placed inside the body, near the cancer (brachytherapy).

For early-stage pharyngeal (throat) cancers, radiation therapy may be the only treatment necessary. For more advanced throat cancers, radiation therapy may be combined with chemotherapy or surgery. In very advanced throat cancers, radiation therapy may be used to reduce signs and symptoms and make the patient more comfortable.

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toxicities while maintaining function preservation and quality of life in group of patients who are younger and healthier than traditional head and neck cancer patients.”

Surgery - The types of surgical procedures that may be considered depend on the location and stage of the cancer. Options may include:

- Surgery for early-stage throat cancer. Throat cancer that is confined to the surface of the throat or the vocal cords may be treated surgically using endoscopy. The doctor may insert a hollow endoscope into the throat or voice box and then pass special surgical tools or a laser through the scope. Using these tools, the doctor can scrape off, cut out or, in the case of the laser, vaporise very superficial cancers.
- Surgery to remove all or part of the voice box (laryngectomy) - For smaller tumours, the doctor may remove the part of the voice box that is affected by cancer, leaving as much of the voice box as possible. The doctor may be able to preserve the patient’s ability to speak and breathe normally. For larger, more-extensive tumours, it may be necessary to remove the entire voice box. The windpipe is then attached to a hole (stoma) in the throat to allow the person to breathe (tracheotomy). If the entire larynx is removed, the patient will have several options for restoring speech. He/she can work with a speech pathologist to learn to speak without a voice box.
- Surgery to remove all or part of the throat (pharyngectomy) - Smaller throat cancers may require removing only part of your throat during surgery. Parts that are removed may be reconstructed in order to allow you to swallow food normally. Surgery to remove your entire throat usually includes removal of your voice box as well. Your doctor may be able to reconstruct your throat to allow you to swallow food.
- Surgery to remove cancerous lymph nodes (neck dissection) - If throat cancer has spread deep within the neck, the doctor may recommend surgery to remove some or all of the lymph nodes to see if they contain cancer cells. Surgery carries a risk of bleeding and infection. Other possible complications, such as difficulty speaking or swallowing, will depend on the specific procedure the patient has to undergo.

Reconstructive surgery can help restore appearance and rehabilitate speech and swallowing function. Prosthetic devices in the mouth may replace removed portions of teeth, gums and jaw. In more advanced cases, a patient may need to use tubes for feeding and breathing and an artificial voice aid for speaking.

Wei, W.I. & Chan, J.Y.W. 2019.

“It is not uncommon for patients with hypopharyngeal cancer to present at an advanced stage of disease. Surgical treatment provides a cure for the tumour with immediate relief from obstruction to the airway and the swallowing passage. Careful planning of surgery is important to ensure good outcome of treatment and prevent complications, some of which may be fatal. The shape of the hypopharynx resembles that of a funnel, with a wide circumference above in continuity with the oropharynx, and a small circumference below where it joins with the cervical oesophagus. As a result, while small tumours require the partial removal of the hypopharynx, large tumours, especially those

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involving the post-cricoid region, warrant a complete, circumferential pharyngectomy. For tumours that invade the cervical esophagus, transcervical approach is still feasible, and this is facilitated by the removal of the manubrium, allowing access to the tumour and resection with clear margins. In the presence of synchronous tumours lower down in the esophagus, pharyngo-laryngo-esophagectomy is indicated. Successful reconstruction of defects after tumour extirpation allows proper wound healing and early delivery of adjuvant radiotherapy. It is also important to ensure quick recovery of the long-term swallowing function. It ranges from the use of the soft tissue flap with skin island that is sutured as a patch to the remnants of the pharyngeal mucosa, to the use of a visceral flap, such as the free jejunal flap, to repair the circumferential pharyngectomy defects. The treatment protocol is personalized according to the extent of the tumour and the characteristics of the patients.”

Chemotherapy - Chemotherapy uses chemicals to kill cancer cells. Chemotherapy is often used along with radiation therapy in treating throat cancers. Certain chemotherapy drugs make cancer cells more sensitive to radiation therapy. But combining chemotherapy and radiation therapy increases the side effects of both treatments. Discuss with your doctor the side effects you're likely to experience and whether combined treatments will offer benefits that outweigh those effects.

Targeted drug therapy - Targeted drugs treat throat cancer by taking advantage of specific defects in cancer cells that fuel the cells' growth. Cetuximab (Erbix) is one targeted therapy approved for treating throat cancer in certain situations. Cetuximab stops the action of a protein that's found in many types of healthy cells, but is more prevalent in certain types of throat cancer cells.

Other targeted drugs are being studied in clinical trials. Targeted drugs can be used in combination with chemotherapy or radiation therapy.

About Clinical Trials

Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:

- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The South African National Clinical Trials Register provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: www.sanctr.gov.za/

Medical Disclaimer

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Sources and References Consulted or Utilised

American Cancer Society

<http://www.cancer.org/cancer/oralcavityandoropharyngealcancer/detailedguide/oral-cavity-and-oropharyngeal-cancer-staging>

Cancer.Net

<http://www.cancer.net/cancer-types/oral-and-oropharyngeal-cancer/symptoms-and-signs>

<http://www.cancer.net/cancer-types/oral-and-oropharyngeal-cancer/diagnosis>

Cancer Research UK

<http://www.cancerresearchuk.org/cancer-help/type/nasopharyngeal-cancer/about/what-is-the-nasopharynx>

<http://www.cancerresearchuk.org/cancer-help/type/mouth-cancer/about/risks/definite-risks-for-mouth-and-oropharyngeal-cancer>

<http://www.cancerresearchuk.org/cancer-help/type/mouth-cancer/about/types-of-mouth-and-oropharyngeal-cancer>

Cancer Treatment Centers of America

<http://www.cancercenter.com/throat-cancer/risk-factors/>

<http://www.cancercenter.com/throat-cancer/panendoscopy/>

Di Credico, G., Edefonti, V., Polesel, J., Pauli, F., Torelli, N., Serraino, D., Negri, E., Luce, D., Stucker, I., Matsuo, K., Brennan, P., Vilensky, M., Fernandez, L., Curado, M.P., Menezes, A., Daudt, A.W., Koifman, R., Wunsch-Filho, V., Holcatova, I., Ahrens, W., Lagiou, P., Simonato, L., Richiardi, L., Healy, C., Kjaerheim, K., Conway, D.I., Macfarlane, T.V., Thomson, P., Agudo, A., Znaor, A., Boaventura Rios, L.F., Toporcov, T.N., Franceschi, S., Herrero, R., Muscat, J., Olshan, A.F., Zevallos, J.P., La Vecchia, C., Winn, D.M., Sturgis, E.M., Li, G., Fabianova, E., Lissowska, J., Mates, D., Rudnai, P., Shangina, O., Swiatkowska, B., Moysich, K., Zhang, Z.F., Morgenstern, H., Levi, F., Smith, E., Lazarus, P., Bosetti, C., Garavello, W., Kelsey, K., McClean, M., Ramroth, H., Chen, C., Schwartz, S.M., Vaughan, T.L., Zheng, T., Menvielle, G., Boccia, S., Cadoni, G., Hayes, R.B., Purdue, M., Gillison, M., Schantz, S., Yu, G.P., Brenner, H., D'Souza, G., Gross, N.D., Chuang, S.C., Boffetta, P., Hashibe, M., Lee, Y.A. & Dal Maso, L. 2019. Joint effects of intensity and duration of cigarette smoking on the risk of head and neck cancer: a bivariate spline model approach. *Oral Oncol.* 2019 Jul;94:47-57. doi: 10.1016/j.oraloncology.2019.05.006. Epub 2019 May 17.

Fanconi Anaemia

https://www.google.co.za/search?q=fanconi+anaemia&source=lnms&tbn=isch&sa=X&ei=YPJ9U6iNJoqs7QbtsoDwAQ&sqi=2&ved=0CAYQ_AUoAQ&biw=1517&bih=714&dpr=0.9#facrc=_&imgdii=0hjY-qEc6ghA9M%3A%3ByPI5Ha6fLgZwdM%3B0hjY-qEc6ghA9M%3A&imgrc=0hjY-qEc6ghA9M%253A%3BEDAJL7y5QRXIsM%3Bhttp%253A%252F%252Fwww.pediatriconcall.com%252Fcgi_bin%252Fimg_gal_anemia.jpg%3Bhttp%253A%252F%252Fwww.pediatriconcall.com%252FJournal%252FArticle%252FFullText.aspx%253Farti d%253D482%2526type%253DI%2526tid%253D%2526imgid%253D194%2526reportid%253D%2526tbltype%253D%3B560%3B446

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July 2020

MacMillan Cancer Support

<http://www.macmillan.org.uk/Cancerinformation/Cancertypes/Headneck/Typesofheadneckcancers/Oropharynx.aspx>

Mayo Clinic

<http://www.mayoclinic.org/diseases-conditions/oral-and-throat-cancer/basics/symptoms/con-20042850>

<http://www.mayoclinic.org/diseases-conditions/oral-and-throat-cancer/basics/causes/con-20042850>

<http://www.mayoclinic.org/diseases-conditions/oral-and-throat-cancer/basics/treatment/con-20042850>

National Cancer Institute

<http://www.cancer.gov/cancertopics/pdq/treatment/oropharyngeal/Patient/page2#Keypoint9>

<http://www.cancer.gov/about-cancer/treatment/clinical-trials/what-are-trials>

Pharynx

http://www.doctorcaruana.org/c_pharynx.php

Tam, M. & Hu, K. 2019. Regional radiation therapy for oropharyngeal cancer in the HPV era. *Semin Radiat Oncol.* 2019 Apr;29(2):126-136. doi: 10.1016/j.semradonc.2018.11.011.

University of California San Francisco

http://www.ucsfhealth.org/conditions/throat_cancer/treatment.html

Wei, W.I. & Chan, J.Y.W. 2019. Surgical treatment of advanced staged hypopharyngeal cancer. *Adv Otorhinolaryngol.* 2019;83:66-75. doi: 10.1159/000492312. Epub 2019 Feb 12.