

# A regional study on nasopharyngeal carcinoma prevention in Guangxi and Guangdong, China

Liangjin Zhang<sup>1</sup>, Yu Ti<sup>2</sup> and Haowei Ti<sup>3\*</sup>

<sup>1</sup>Guangming Middle School, Shenzhen 518000, China

<sup>2</sup>Qiaotou Middle School, Dongguan 523000, China

<sup>3</sup>Doctor of Clinical Medicine, Rey Juan Carlos University, Madrid, Spain

Email: cancer.drug@yahoo.com

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## Abstract

**Objective:** To achieve regional nasopharyngeal cancer prevention in Guangxi and Guangdong, China, where nasopharyngeal cancer is prevalent.

**Methods:** To prevent nasopharyngeal cancer, you should avoid smoking and excessive drinking, reduce the consumption of pickled foods, and pay attention to the air quality in the working and living environment, especially avoid long-term exposure to high concentrations of dust, formaldehyde and other irritants.

**Results:** The imbalance of certain trace elements in the population, caused by the region's natural environment, such as high nickel and low selenium, has also been proven to induce nasopharyngeal cancer in experimental animals. The survey found that the nickel content in the soil, water, and rice in the areas of Guangdong prone to nasopharyngeal cancer is higher than in other areas.

**Conclusion:** The occurrence of nasopharyngeal cancer is a multi-factor, multi-stage process. Having good living habits, eating less pickled foods, not smoking or drinking, maintaining an optimistic attitude, and engaging in regular exercise may reduce the risk of nasopharyngeal cancer. However, people in high-incidence areas and with a family history of nasopharyngeal cancer should undergo nasopharyngeal cancer screening as early as possible. Whether from the perspective of disease recovery or medical expenses, the advantages of early diagnosis and early treatment are more obvious.

## Keywords

Guangdong and Guangxi; nasopharyngeal carcinoma; regional diseases; cancer prevention and control

## 1. Introduction

The latest statistics of Guangdong Cancer Registry on nasopharyngeal cancer in Guangdong Province (2009) show that the incidence of nasopharyngeal cancer in Guangdong Province is 10.51/100,000 (2.05/100,000 in China); the incidence of nasopharyngeal cancer in men is 16.05/100,000 (2.89/100,000 in China), and the incidence of nasopharyngeal cancer in women is 6.45/100,000 (1.21/100,000 in

China). The mortality rate of nasopharyngeal cancer in Guangdong Province is 5.30/100,000 (1.04/100,000 in China); the mortality rate of nasopharyngeal cancer in men is 8.00/100,000 (1.51/100,000 in China), and the mortality rate of nasopharyngeal cancer in women is 3.33/100,000 (0.57/100,000 in China) [2].

1) Nasopharyngeal carcinoma is one of the most common malignant tumors in China. Nearly 80% of nasopharyngeal carcinoma patients in the world are in China. Due to dietary and lifestyle factors, Guangdong, Guangxi, and Fujian are also high-incidence areas for nasopharyngeal carcinoma. Nasopharyngeal carcinoma is a malignant tumor that originates from the epithelium of the nasopharyngeal mucosa. Nasopharyngeal carcinoma is caused by cell changes on the surface of the nasopharynx. The main sites of disease are concentrated in the top and side walls of the nasopharynx, especially the hidden pharyngeal crypt area. Nasopharyngeal carcinoma is a cancer that starts in the upper part of the throat. Nasopharyngeal carcinoma occurs when the DNA of cells in the nasopharynx changes. The DNA of cells contains instructions that instruct cells to work. In healthy cells, DNA will issue instructions for cells to grow and reproduce at a certain rate. These instructions will instruct cells to die at a set time [1].

2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and 3) conformity of style throughout a journal paper. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

3) These cancer cells may form a growth called a tumor. Tumors may grow, invade, and destroy healthy body tissue. Over time, cancer cells may break away from where they began and spread to other parts of the body. When cancer spreads, it is called metastatic cancer.

## 2. Discussion

### 2.1. People and regions

Nasopharyngeal cancer can occur at any age, but most cases are diagnosed in adults between 30 and 60 years old.

Chemicals released in the steam from cooking preserved foods may increase the risk of nasopharyngeal cancer. Foods such as fish and preserved vegetables produce steam during cooking that may enter the nasal cavity. Exposure to these chemicals as a child may increase the risk [3].

Most of the time, this common virus causes mild symptoms similar to those of the common cold. Sometimes it may cause infectious mononucleosis. EBV may also be linked to some cancers, including nasopharyngeal cancer.

Having nasopharyngeal cancer in your family increases your risk of developing the disease. Heavy alcohol and tobacco use increase your risk of nasopharyngeal cancer.

## 2.2. Nasopharyngeal cancer risk

Cancer that grows and invades nearby structures. Advanced nasopharyngeal cancer may grow large enough to invade nearby structures, such as the throat, bones, and brain. Cancer that spreads to other parts of the body. Nasopharyngeal cancer often spreads beyond the nasopharynx. It usually spreads first to the lymph nodes in the neck. When nasopharyngeal cancer spreads to other parts of the body, it most often metastasizes to the bones, lungs, and liver [4].

## 3. Result

The clinical manifestations of nasopharyngeal carcinoma are often manifested in the form of ear or nose symptoms. Since the nasopharynx is close to the base of the skull, many cranial nerves pass through it. Once the human body is affected by nasopharyngeal lesions, headaches or other nerve paralysis may occur. In addition, nasopharyngeal carcinoma has a characteristic that it often metastasizes in the early stages of the disease. In addition to the lungs, liver, and bones, it is not uncommon for patients to metastasize to the neck, causing lumps in the neck.

### 3.1. Premonitions

Since Eustachian tube dysfunction caused by nasopharyngeal carcinoma often occurs in patients with nasal or sinus problems, it is sometimes not taken seriously, and it may even lead to an imbalance in the middle ear pressure, causing a sunken eardrum or even fluid accumulation in the middle ear. In this case, the symptoms can be improved immediately by puncturing the eardrum and draining the fluid out.

### 3.2. Symptoms

- If nasopharyngeal carcinoma blocks the passage of the posterior nasal passage from the nasal cavity to the nasopharynx, it will affect the function of the nasal cavity and cause nasal symptoms such as nasal congestion, runny nose, and bloody nasal discharge. Since the blood supply of the nasal cavity comes from the external carotid artery and the internal carotid artery system, the blood supply is sufficient, and mild nosebleeds or bloody nasal discharge often do not attract attention. Sometimes, nasopharyngeal carcinoma itself bleeds, leading to the production of bloody sputum, but there are many reasons for bloody sputum, in addition to the nasal cavity, nasopharynx, oral cavity, oropharynx, hypopharynx, larynx, trachea, etc. These patients often give up the determination to track down the source of bloody sputum after visiting the internal medicine department and receiving a chest X-ray that shows normal results, thus delaying the diagnosis.

- Nasopharyngeal carcinoma is located in the superficial layer of the neck, and the movable lymph nodes less than 2 cm in size are usually benign; but if the lymph nodes appear in the deep layer, these lumps located in the upper neck and the inner side of the sternocleidomastoid muscle are the typical locations for nasopharyngeal carcinoma to metastasize to the neck.
- Although the appearance of a neck lump means that the cancer cells have spread from the primary site of the nasopharynx to the neck for NPC patients, proper treatment still has a chance to make the large neck lump disappear.
- Another major category of symptoms of NPC is phenomena related to cranial nerves, such as headaches (especially unilateral headaches), facial numbness, diplopia, abnormal eye movements, and other symptoms of neurological disorders or paralysis, which also require vigilance.

## 4. Methods

The key to preventing nasopharyngeal cancer is to reduce or avoid known risk factors. This includes avoiding smoking and alcohol abuse, reducing the consumption of preserved foods, and paying attention to the air quality in the working and living environment, especially avoiding long-term exposure to high concentrations of dust, formaldehyde and other irritants.

### 4.1. Nasal irrigation

For nasal irrigation, sit down, lean forward slightly, and rinse with warm saline to keep the nasal cavity clean, reduce infection, and increase radiation sensitivity. Do not use too much force when rinsing, and observe the color of the rinsing solution. If you have a headache or bloody rinsing, stop rinsing immediately. For nasal irrigation, sit down, lean forward slightly, and rinse with warm saline to keep the nasal cavity clean, reduce infection, and increase radiation sensitivity. Do not use too much force when rinsing, and observe the color of the rinsing solution. If you have a headache or bloody rinsing, stop rinsing immediately.

### 4.2. Oral protection

People need to frequently do exercises such as turning the neck, tapping teeth, puffing cheeks, smiling, and opening mouth. Patients with dry mouth can relieve discomfort by holding pear slices in their mouths; people with radiation pharyngitis can gargle with a mouthwash before meals and before going to bed.

### 4.3. Selenium supplementation

Selenium can be supplemented by food, but the high temperature of cooking will cause most of the selenium in food to be lost, so it is not recommended to supplement selenium by food. In addition to food supplements, people can also choose some selenium supplement preparations to strengthen the supplement [5]. The selenium supplement preparations on the market mainly supplement malt selenium and yeast selenium. Malt selenium, which has a relatively high conversion rate and utilization rate, is more suitable.

## Conclusion

To prevent nasopharyngeal carcinoma, you need to pay attention to physical exercise, a proper diet, and improving your resistance. There are many methods for nasopharyngeal carcinoma screening, including physical examination of the head and neck, serological testing of Epstein-Barr virus antibodies, pathological examination of nasopharyngeal biopsy or cervical lymph nodes, medical imaging, and ultrasound examination. Among them, Epstein-Barr virus serological antibody testing is an important means of assisting the early diagnosis of nasopharyngeal carcinoma. It can also assess the risk of nasopharyngeal carcinoma in healthy people and provide health guidance for these people.

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