BEYOND FIVE

The Face of Head & Neck Cancer

Nasal & sinus cancer

The name 'Beyond Five' refers to the long-term support that patients with head and neck cancer often need, which often extends beyond five years after diagnosis.

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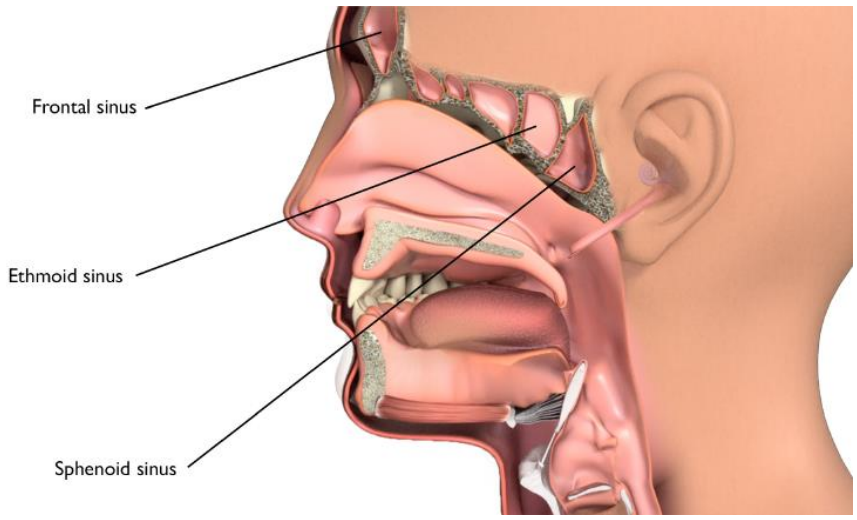
NASAL AND PARANASAL SINUS CANCERS

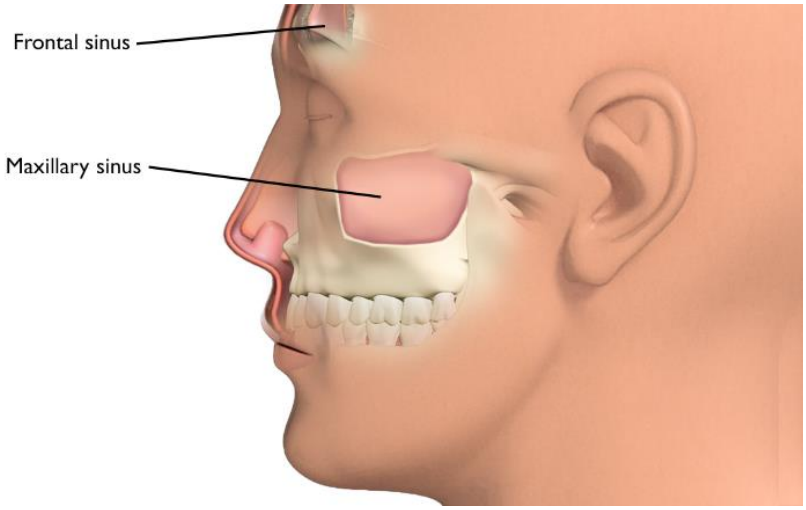
WHAT IS THE NASAL CAVITY AND PARANASAL SINUSES?

The nasal cavity is the large, air-filled space behind the nose. Paranasal sinuses are small air-filled spaces at the front of the skull, and surrounding the nasal cavity. They are found on the cheeks (the maxillary sinuses), above the eyes (the frontal sinuses), between the eyes (the ethmoidal air cells or sinuses) and behind the ethmoidal aircells (sphenoid sinuses).

This diagram shows the nasal cavity and para nasal sinuses



This diagram shows the maxillary sinus



WHAT DOES THE NASAL CAVITY AND PARANASAL SINUSES DO?

The nasal cavity warms and moistens the air we breathe and helps filter out dust and other harmful bits in the air. It runs back from the nostrils, above the roof of the mouth and curves down to connect with the mouth at the back of the throat. The paranasal sinus air cavities give your voice its clarity and tone and lighten the weight of the skull.

Nasal cavity is the main sensory organ responsible for the human sense of smell. It consists of specific receptors (olfactory) which are responsible for transmitting odors into neural impulses.

WHAT IS NASAL AND PARANASAL SINUS CANCER?

Cancer occurs when cells become abnormal, grow uncontrollably and have the potential to spread to other parts of the body. These cells build up to form a mass (or lump).

Different types of cancer can develop from the different kinds of cells in the nasal cavity and paranasal sinuses. The most common are called squamous cell carcinoma (arising from the lining of the nasal cavity and the paranasal sinuses) and adenocarcinoma (arising from the small gland cells throughout the sinuses). Nasal and paranasal cancers are relatively rare. The most common location of paranasal sinus cancer is the maxillary sinus.

WHAT CAUSES NASAL AND PARANASAL SINUS CANCER?

Doctors can't always explain why a person gets cancer. But we do know what makes some cancers more likely.

The two main causes of nasal and paranasal sinus cancers are:

- **smoking** (cigarettes, cigars or pipes) or **using 'smokeless' tobacco** (snuff and chewing tobacco): if a person smokes or has smoked in the past, they have a higher risk of getting nasal and paranasal sinus cancer than someone who has never smoked.
- **drinking alcohol:** if a person drinks a lot of alcohol over many years, they have a higher risk of getting nasal and paranasal sinus cancer, especially combined with smoking.
- **breathing in certain chemicals or dust** that may cause cancer including wood dust (hard and soft wood), leather dust (e.g. shoe making), chromium, nickel, heavy metal exposure, formaldehyde, cloth fibres (e.g. textile manufacturing) and mineral oils (used in metal work and printing

Other factors that may increase the risk of nasal and paranasal sinus cancer are:

- **Being male** – in Australia nasal and paranasal sinus cancers are twice as common in men compared to women
- **Age -** most nasal and para nasal sinus cancers are common in people aged 45 years and over

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WHAT ARE THE SIGNS AND SYMPTOMS OF NASAL AND PARANASAL SINUS CANCER?

The signs and symptoms of nasal and paranasal sinus cancers depend on where the cancer is, its size and how far it has spread in the body.

Common signs and symptoms include:

- decreased or loss of sense or smell
- blocked or congested nose that does not clear
- pressure or pain behind the nose around the upper teeth
- nosebleeds (particularly if only on one side)
- a lump or sore inside the nose or mouth or on the face.

Other symptoms may include:

- frequent headaches or pain in the sinus areas
- numbness or tingling in the face
- swelling or trouble with the eyes, such as double vision, complete or partial loss of sight, or a bulging or watery eye
- painful or loose teeth (or dentures)
- pain or pressure in the ear.

Some people with nasal or paranasal sinus cancers may not experience any symptoms at all. However if you have any of these symptoms for more than a few weeks, talk to your doctor as early as possible. They may be able to help diagnose and treat you.

HOW IS NASAL AND PARANASAL SINUS CANCER DIAGNOSED?

It is important that your doctor establishes the diagnosis of nasal or paranasal sinus cancer, assesses the size of the cancer and whether it has spread to the lymph nodes in the neck or elsewhere in the body.

To answer these questions your doctor will need do the following things:

- talk with you about your **medical history**. This includes signs you may have noticed, any health conditions, medications that you are taking, and whether you smoke or drink alcohol
- perform a **physical examination** by feeling and looking inside the nose, face and neck
- order **diagnostic tests**, which may include scans.

Not everyone will need to have every test for nasal or para nasal sinus cancer. Your doctor will recommend tests that are right for you.

Common tests include:

- **Nasoendoscopy:** Your doctor will look inside your nose and throat using a very thin flexible tube with a tiny light and camera on it (called an endoscope). This can be done in an office or clinic.
- **Biopsy:** This involves taking a small piece (sample) from the cancer. A pathologist then looks at the sample under a microscope to check for cancer cells. This is often the only sure way to tell if you have cancer. **Your doctor may recommend an incision biopsy or a needle biopsy.**
  - **Incision biopsy:** Your doctor will take a small piece of tissue using a surgical knife. This can be done under topical or general anaesthesia, so that you don't feel any pain. In both cases, an endoscope and biopsy forcep is used to go through the nose into the nasopharynx. Depending on the size and location of the biopsy, you may need stitches. There may be some bleeding after the biopsy. If you take blood thinners (e.g. warfarin), you may need to stop these before the biopsy.
  - **Needle biopsy (Fine Needle Aspiration or FNA):** This is used when there is a lump (enlarged lymph node) in the neck that could have cancer cells in it. During the procedure, your doctor will take some cells from the lump using a needle. Usually this is done with guidance from an ultrasound to make sure the needle is in the right spot. You may feel a bit uncomfortable during the biopsy.
- **CT (Computed Tomography) scan:** This uses X-rays to take 3D pictures inside the body. Depending on the clinical situation, patients may require a CT scan of the head, neck, and possibly the chest. Often dye is injected into a vein during the procedure to give clearer images.
- **MRI (Magnetic Resonance Imaging) scan:** This uses magnetic fields to take pictures inside the body, however this is less commonly used than CT scans.
- **PET (Positron Emission Tomography) scan**: This is a whole body scan that uses a radioactive form of sugar which can show if nasal and paranasal sinus cancer has spread to the lymph nodes or elsewhere in the body.

THE CANCER CARE TEAM

After a diagnosis of cancer has been made, your doctor is likely to talk about your diagnosis with the cancer care team they work with. This is known as a head and neck cancer MDT (multidisciplinary team). You may be asked to attend an appointment where the MDT talks about how best to treat your cancer, and coordinate your treatment and care. This team includes experts who will review the diagnosis and tests performed, and considers all parts of your treatment and recovery. The purpose of the MDT is to decide on the best treatment for your cancer and to help you regain the best function possible in the long-term.

Healthcare professionals that are a part of your head and neck cancer MDT	
Head and neck surgeons	specialist doctors who remove cancers in the face, mouth, throat and neck. This includes surgeons with a background in otolaryngology (Ear Nose and Throat), general surgery, maxillofacial surgery, and reconstructive surgery. If surgery is required, the head and neck surgeon will carry out the procedure.
Reconstructive (plastic) surgeons	specialist doctors with expertise in reconstructing the head and neck. Some head and neck surgeons also do reconstructive surgery, depending on their training and experience.
Radiation oncologists	specialist doctors trained in the use of carefully directed radiation to treat cancer.
Radiation therapists	healthcare professionals who deliver the radiation treatment prescribed by the radiation oncologist.
Medical oncologists	specialist doctors who are experts in the use of medicines like chemotherapy to treat cancer.
Speech pathologists	healthcare professionals who work with people who have difficulties speaking or swallowing.
Dietitians	healthcare professionals who give food and dietary advice.
Dentist/oral medicine specialists	healthcare professionals who care for the mouth and teeth. Mouth care is very important in head and neck cancer, especially if radiation therapy is needed.
Pathologists	specialist doctors who are experts in looking at cells under a microscope and determining if they are cancer.
Radiology and nuclear medicine specialists	specialist doctors who interpret scans such as CT, MRI and PET scans.
Palliative care team	specialist doctors and nurses who have expertise in managing symptoms and improving quality of life, often in patients where the cancer can't be cured.
Nurses	healthcare professionals who are experts in the care of people with cancer, and work with all members of the cancer care team. Often, specialist cancer nurses are part of the MDT. They will help to plan and coordinate your care.
Psychologists	are healthcare professionals who assist people with worries about coping and living with cancer (mental health).
Social workers	are healthcare professionals who provide practical and emotional support to people living with cancer.

Visit the Beyond Five website for further information on the health professionals who may be part of your cancer care team.

WHAT IS STAGING?

Once your doctor has made a diagnosis of cancer, it is important that they assess the extent (or stage) of the cancer. Staging a cancer is important because it helps doctors to choose the best treatment for you. It also gives information about the chances of cure. The stage is based on the size of the cancer, whether it has invaded into nearby areas and whether it has spread to lymph nodes in the neck (called lymph node metastases) or other sites in the body, such as the lungs, liver or bone (called distant metastases).

The **TNM (Tumour, Node, Metastases) system** is used to stage cancer. This system is used to summarise information about the size of the cancer and whether it has spread to lymph nodes or other parts of the body.

The TNM system

- **T** stands for the size of the cancer. A T value can range from 1 (small cancer) to 4 (large cancer).
- **N** indicates whether the cancer has spread to the lymph nodes. Where there is no cancer in the lymph nodes, the N value is 0. An N value can range from 1 to 3, depending on the size and number of cancerous lymph nodes.
- **M** stands for distant metastases, or whether the cancer has spread to other parts of the body outside the head and neck. An M value can be either 0 (cancer has not spread to other parts of the body) or 1 (cancer has spread to other parts of the body).

Once the values for T, N and M have been worked out, they are combined to give an overall score between 1 and 4. Your doctor may write this in Roman numerals: I, II, III and IV.

Staging is complication but in broad terms cancers may be described as:

- **Early stage cancer (Stage I or II cancers)** which are small (less than 4 cm in size) and have not spread to the lymph glands or other parts of the body.
- **Advanced stage cancer (Stage III or IV cancers)** which are more advanced due to their size (more than 4 cm) have spread to other nearby parts of the body or the lymph nodes.

The chance of cure depends on both the type of cancer and the stage. It is important to know that most patients with advanced nasal and sinus cancers (even stage III or IV) can be cured.

WHAT IS GRADING?

Staging and grading are not the same. Your doctor may also be interested in the grade of the cancer. Grading refers to the growth pattern of the cancer. The grade of the cancer is determined by a pathologist who examines the biopsy sample under a microscope. The pathologist determines the grade of the cancer by how the cells look. The grade can be used to estimate how quickly the cancer is likely to grow and spread.

TREATMENT OPTIONS FOR NASAL AND PARANASAL SINUS CANCER

Following a diagnosis of nasal or para nasal cancer, your cancer care team will discuss treatment options including the possibility of participating in a clinical trial that is suitable for you. This is also a good time to consider if you would like a second opinion.

The most suitable treatment for nasal and para nasal sinus cancer depends on many things including:

- **type of nasal or para nasal cancer**
- **size and location of the cancer**
- **whether the cancer has spread**
- **personal factors (e.g. age, general health and treatment history)**
- **types of treatment available (and whether any clinical trials are available)**
- **your preferences for treatment.**

Nasal and para nasal sinus cancers are generally treated with surgery, radiation therapy, or a combination of both.

Surgery involves taking the cancer out of the nasal cavity and para nasal sinuses and for some people, the lymph glands in the neck. Some people may need extra treatment after surgery to reduce the risk of the cancer coming back. This can be either radiation therapy alone (adjuvant radiation therapy) or radiation therapy in combination with chemotherapy (**this is called adjuvant concurrent chemoradiation**).

SURGERY

There are a number of different operations that can be used to remove nasal and para nasal sinus cancer. The operation used will depend on the size, the type nasal cancer and location of the tumour.

SURGICAL PROCEDURES

The different options for nasal and para nasal sinus cancers include:

- **Endoscopic surgery:** This is when a telescope and surgical instruments are passed through the nose to get to the nasal cavity, paranasal sinuses, nasopharynx and sometimes into the brain without needing to cut through the skin on the outside.
- **Craniofacial resection:** This involves removing the cancer using cuts (incisions) via the face and the skull. It is used for cancers that have grown inside, or approach the skull.
- **Orbital exenteration:** This involves the removal of the eye or eye lid. It is used when the cancer has spread into the eye socket and cannot be treated any other way.
- **Neck dissection:** This involves removing lymph nodes from the neck. It is used when the cancer has spread to the lymph nodes in the neck, or there is a risk of microscopic cancer in the lymph glands of the neck.
- **Reconstructive surgery (free flap repair):** This may be considered if a large area of tissue is removed. Reconstructive surgery may involve taking tissue from another part of the body called a free flap repair. This operation may be carried out by a surgeon who specialises in reconstructive surgery, your head and neck surgeon or another surgeon.
- **Tracheostomy:** A tracheostomy is used to create an opening in the trachea (windpipe) after major head and neck surgery. A tube is inserted into the opening to help you breathe until normal breathing is possible.
- **Gastrostomy:** A gastrostomy tube (called a PEG tube) goes through the skin and the muscles of your abdominal wall into the stomach. Gastrostomy is recommended if feeding is needed for a medium to longer time (months or years).
- **Nasogastric feeding:** A nasogastric tube goes through the nose down into the stomach. Nasogastric feeding is used for short time (days or weeks).

HOW CAN I PREPARE FOR SURGERY?

Your doctor will explain details of the surgery, general risks and side effects of surgery. Ask your doctor if you have questions. They may recommend:

- **stopping blood thinners (e.g. aspirin) before surgery to reduce the risk of bleeding**
- **special stockings to reduce the risk of blood clots**
- **early mobilisation to reduce the risk of blood clots and chest infection**
- **antibiotics to reduce to risk of wound infection.**

If you smoke, it is important that you consider stopping smoking before starting treatment to help reduce the risk of infection and help you recover after your treatment.

SIDE EFFECTS OF SURGERY

Treatment for nasal and para nasal sinus cancer may lead to a number of side effects. You may not experience all of the side effects. Speak with your doctor if you have any questions or concerns about treatment side effects.

Possible side effects depend on the surgical approach that best suits your individual cancer. Your treating team will talk about the type of surgery they will do in more detail and the specific risks that apply to you.

Your doctor may recommend that you receive supportive care to help during your recovery. Further information about supportive care is available on the website.

RADIATION THERAPY

The most common radiation therapy approach for nasal and para nasal sinus cancers is called **external beam radiation**. This type of radiation therapy applies radiation from outside the body.

- **Definitive radiation therapy:** This is the main treatment for nasal and para nasal sinus cancer. It is used without surgery to cure nasal and para nasal sinus cancers. Definitive radiation therapy can also be given in combination with chemotherapy (called concurrent chemoradiation). The decision to give radiation therapy, alone or in combination with chemotherapy depends on the type of tumour, how big it is and how fit and strong you are. Typically radiation therapy is delivered one each week day (not on weekends) over 7 weeks.
- **Adjuvant radiation therapy:** This is when radiation therapy is given after surgery. It is used as an additional treatment to kill cancer cells that may not have been removed during surgery. This typically starts about 4 weeks after surgery to give you time to recover from the surgery. The radiation therapy usually lasts for about 6 weeks. Sometimes chemotherapy is added to the adjuvant radiation therapy (chemoradiation) to make it more effective.

  The decision to give radiation therapy, either alone or in combination with chemotherapy, is based on the pathology results after surgery and how fit and strong you are to cope with the treatment. The aim is to lower the risk of the cancer coming back again in the nose, sinuses or neck but, not all patients need this.
- **Palliative radiation therapy:** In cases where a cure is not possible, radiation therapy is used to relieve symptoms of advanced nasal and para nasal sinus cancer. Symptoms that may require palliative radiation therapy include pain, bleeding and pressure symptoms pressing on vital structures (e.g. visual disturbance and headaches).

HOW DO I PREPARE FOR RADIATION THERAPY?

You will meet with many members of the cancer care team, who will help you learn how to look after yourself through radiation therapy, recovery and long term follow-up. They will also talk to you about side effects and how to manage them. It may be helpful to write down questions as they come up, so you can ask anyone in your cancer care team when you see them.

- **Mask-making and simulation:** Radiation therapy is a precise treatment. In order to make sure, that the cancer is covered by the treatment, you will need to be very still during the treatment, usually for about five minutes. A radiation therapy mask that is made to fit perfectly to your shape, will be put on you during each treatment to help the machine target where the cancer is.
  - You will have a planning **CT scan** (and sometimes other scans) with the mask on. Your radiation oncologist and radiation therapists will use these scans with all your other clinical information to develop a radiation therapy plan just for you (a personalised plan). Your plan will be checked by the

radiation therapy and radiation oncology physics team before it is ready to be used for your treatment. This whole process can take approximately 2-3 weeks.

- **Teeth and mouth care:** You might need to have some of your teeth taken out, this will depend on the area being treated and the dose of radiation therapy. It is important to take out any broken or infected teeth before radiation therapy. Taking out unhealthy teeth after radiation therapy can cause problems with the jaw bone.
- **Diet, nutrition and the role of your dietitian:** Your cancer and its treatment can make it hard to eat and drink. Your doctor will recommend you see a dietitian to maximise your nutrition during treatment as well as while you are recovering. Sometime **f**eeding tubes may be recommended depending on the area being treated and the dose of radiation therapy.

  There are two common types of feeding tubes:

  - **Gastrostomy tube (sometimes called a PEG tube):** this type of tube is inserted through your abdominal wall into your stomach, with part of the tube staying outside the stomach. A syringe can be attached to the tube to give you food this way if needed. The tube is inserted using a camera through the mouth into the stomach (gastroscopy) or using a CT scanner to guide insertion directly through the skin. If a PEG tube is needed, your doctor will organise this before starting your radiation therapy
  - **Nasogastric tube:** this type of tube goes through the nose down into the stomach and is usually used for short periods (days or weeks). A nasogastric tube can be inserted at any time (before, during or after treatment).
- **Speech, voice and swallowing:** Your cancer and its treatment can make swallowing and speech difficult. Your doctor will recommend you see a speech pathologist, who can help you with ways to manage swallowing and communication difficulties, during and after treatment.

SIDE EFFECTS OF RADIATION THERAPY

The side effects of radiation therapy start around two weeks into treatment and progress through treatment to peak in the last week or just after treatment ends. The side effects start to improve 2–3 weeks after the end of treatment.

Side effects of radiation therapy depend on:

- the dose of radiation therapy
- the area being treated
- whether or not chemotherapy is added to the radiation therapy.

Each individual responds to radiation therapy differently. Some people may experience a few side effects while others may not experience any at all. The following are some common side effects of radiation therapy.

Common side effects of radiation therapy include:

- tiredness
- skin irritation in the treated area (e.g. redness, dryness and itching, weeping skin, scaling or sometimes skin breakdown (sores))
- dry mouth and throat due to loss of saliva (called xerostomia)
- changed taste (usually a loss of taste or sometimes an unpleasant taste in the mouth)
- pain on swallowing or difficulty with swallowing
- losing weight.

Most side effects are short lived and may go away within 4–6 weeks of finishing radiation therapy. Some side effects may last for months after you finish radiation therapy and some may be permanent.

Once your radiation therapy ends, you will have regular follow-up appointments so your cancer care team can check your recovery and monitor any side effects that you may have. About 12 weeks after your last radiation therapy session, your doctor will usually order a PET scan to make sure the cancer has completely gone. If the cancer has not gone away after radiation therapy, or comes back in the future, you may still be able to have surgery to try to remove the cancer.

Your doctor may recommend some specific supportive care options to help you during your treatment and recovery. Further information about supportive care is available on the website.

CHEMOTHERAPY

Chemotherapy works by destroying or damaging cancer cells. For nasal and para nasal sinus cancers, it is usually given into a vein through a needle with a cannula (tube) attached.

There are a number of ways that chemotherapy may be used to treat nasal and para nasal cancer including:

- **Definitive:** Sometimes chemotherapy is added to definitive radiation therapy (chemoradiation). This may be given once every 3 weeks or once a week throughout the duration of radiation therapy. This makes the radiation more effective at killing cancer cells but also leads to more side effects in most people.
- **Adjuvant:** This is when chemotherapy is given after surgery and is usually combined with radiation therapy(called concurrent chemoradiation). This may be given once every 3 weeks or once a week throughout the duration of radiation therapy. This makes the radiation more effective at killing cancer cells but also leads to more side effects in most people. Unlike chemotherapy for many other cancers, most people do not lose their hair or have severe nausea and vomiting.
- **Neoadjuvant:** This is when chemotherapy is given before surgery or radiation therapy. It works to shrink large cancers so they are easier to remove during surgery or target with radiation therapy.
- **Palliative:** This is used when the cancer is incurable. The cancer may be too large or has spread too much to be removed by surgery. Palliative chemotherapy helps to slow the growth of cancer and reduce symptoms. It is important to remember that palliative chemotherapy is not as intense as other types and is much less likely to have significant side effects.

Before you start treatment, your medical oncologist will choose one or more chemotherapy medications that will be best to treat the type of cancer you have.
The chemotherapy medications your doctor chooses may depend on:

- **whether the treatment is curative or palliative**
- **when it is used**
- **your medical history.**

SIDE EFFECTS

The side effects of chemotherapy depend on the medication used and how much you are given by your doctor (the dose). The most common medications used are called cisplatin, carboplatin and cetuximab.

Each person responds to chemotherapy differently. Some people may experience a few side effects while others may not experience any at all. The following are common side effects of chemotherapy:

- **a feeling of wanting to vomit (nausea) or vomiting**
- **more side effects of radiation, if you have chemotherapy at the same time as radiation**
- **loss of feeling in the fingers and toes**
- **kidney damage (caused by some medications)**
- **hearing loss/thinning**
- **ringing in the ears**
- **rash**
- **higher risk of infection (if the chemotherapy reduces the number of white cells in the blood).**

Most of these side effects are short lived and may go away once you finish chemotherapy. . Some side effects can take months or years to improve or may be permanent

Once your treatment ends, you will have regular follow-up appointments so that your doctor can check your recovery, make sure the cancer has not returned and monitor and treat any side effects that you may have.

Your doctor may recommend that you receive supportive care to help during your recovery. Further information about supportive care is available on the website.

FOLLOW-UP CARE

You will need regular check-up of your face, mouth, throat and neck after treatment for nasal and para nasal sinus cancer. This may include endoscopic examinations and imaging such as CT, MRI and PET scans, during follow-up. It is important to keep up with follow-up appointments to make sure that if the cancer comes back it is caught early and can be treated. If you have any concerns between appointments you should contact your doctor.

People who smoke and/or drink alcohol can reduce the risk of their cancer coming back or getting a new cancer if they quit smoking and reduce the amount of alcohol they drink. Ask your cancer care team for advice if this applies to you.

SUPPORTIVE CARE DURING TREATMENT

It is important to have appropriate supportive care before, during and after treatment for head and neck cancer. Here are some things you should consider before/during treatment.

- **In the first week or two after surgery, you may need to be fed by a tube while your body is healing and the swelling is reducing**
- **You may find it difficult to swallow after radiation therapy because it may make your mouth dry and your throat sore. You may notice changes in your taste or you may enjoy your food less. Radiation therapy may also affect your teeth (e.g. cause tooth decay).**
- **Chemotherapy may cause changes in how you taste food, give you a feeling of wanting to vomit (nauseous) or vomit. These side effects may also reduce your appetite.**

DIET AND NUTRITION AND ROLE OF YOUR DIETITIAN

It is important for people with head and neck cancer to stay well-nourished and to avoid unplanned weight loss. If you can't eat or drink enough, you may become malnourished or begin to lose weight. To help you get enough nutrition, you may need a feeding tube for a short period of time.

Having a good diet can help you:

- **get through treatment**
- **reduce the chance you will get an infection**
- **recover more quickly**
- **keep your strength and energy levels up.**

What can I do to keep my food intake up?

- **Eat a diet high in protein and calories (energy).**
- **Eat small meals or snacks more often if you have trouble eating a full meal.**
- **Drink calorie-rich fluids such as milk, milkshakes, smoothies or juice. Your dietitian may recommend supplement drinks that are high in protein and calories.**
- **If you have a sore throat, avoid foods that scratch or burn it such as citrus, vinegar, chips or toast.**

Where can I find support?

Your dietitian is an expert in food and nutrition who will help you with your diet. Your dietitian will help you work out a plan to get all the energy you need. They may give you some tips to help make eating and drinking easier and to help you enjoy your food to help you keep weight on.

You may have trouble eating and drinking because of your treatment, but you may find that this gets better over time. Some people need a feeding tube to make sure they are eating enough and getting enough energy. If this is the case for you, your doctor, dietitian and nurse will talk with you about what this involves. Feeding tubes are usually only needed for a short time, until you recover enough and can eat more. Some people may need feeding tubes for a longer period of time.

More information about diet and nutrition is available here.

SPEECH, VOICE AND SWALLOWING, AND THE ROLE OF YOUR SPEECH PATHOLOGIST

Treatment for head and neck cancer may cause changes to parts of your mouth (lips, teeth, tongue, palate) and/or throat (pharynx, larynx), which can affect your ability to speak and/or swallow. These changes may only last for a short time or they may be permanent.

Speech and voice problems can affect your daily life. This may leave you feeling frustrated, distressed or embarrassed, particularly if people have trouble understanding your speech.

If you find it difficult to swallow (known as dysphagia), you may notice:

- you need to swallow many times to clear food from your mouth or throat
- you need to clear your throat or cough while eating
- it hurts to swallow
- your voice sounds gurgly after swallowing.

Make sure to drink plenty of water when eating, and include gravy or sauces with foods to help you swallow them more easily.

If your treatment has caused changes to your speech, voice or swallowing, you can get help from a speech pathologist. A speech pathologist is an expert in difficulties with communication and swallowing. Your doctor may recommend that you see a speech pathologist before, during and after your treatment.

Your speech pathologist can:

- **give you exercises or tips to help your speech and voice**
- **help you plan other ways of communicating such as writing or using a computerised voice to speak for you**
- **show you how to use devices or aids if you need them**
- **show you safe swallowing tricks such as changing your head position, or changing the thickness of food/liquids to make it easier to swallow them.**

You may also get help from a doctor or a dietitian and, in some cases, they may recommend a feeding tube.

TEETH AND MOUTH CARE AND ROLE OF YOUR DENTIST

Treatments for head and neck cancer, especially radiation therapy, can cause side effects that affect your teeth and mouth such as:

- **dry mouth**
- **an increase in ulcers or inflammation in your mouth (mucositis)**
- **altered taste**
- **being unable to fully open your mouth (trismus)**
- **tooth decay**
- **infected or bleeding gums**
- **breakdown of tissue or bone in some areas of the mouth.**

These side effects may be painful and may make it difficult to eat, talk or swallow. It is important to take care of your teeth and mouth during treatment because infections can be harmful and slow down your treatment. Some side effects can last for a long time after treatment (late effects).

What can I do to keep my teeth and mouth healthy?

There are a number of things that you can do to keep your teeth and mouth healthy.

- **Drink plenty of water and chew sugar-free chewing gum to keep your mouth moist.**
- **Gently brush your teeth, gums and tongue with a soft toothbrush after every meal and at bed time.**
- **Gently floss your teeth every day.**
- **Use high-strength fluoride toothpaste.**
- **Use an alcohol-free mouthwash.**

Your dentist is an important member of your healthcare team before, during and after treatment because side effects that affect the teeth and mouth can often be prevented or reduced through regular dental check-ups.

- **It is a good idea to have a dental check-up before you start treatment. Your dentist will check the health of your teeth and mouth and will give you a plan to keep your mouth healthy. Sometimes teeth that are decayed and unhealthy need to be removed before radiation therapy to reduce the risk of problems after treatment.**
- **During your treatment, your dentist will look out for any teeth or mouth side effects.**
- **After your treatment, you should visit your dentist every 6 months for a check-up because the side effects of radiation therapy on your teeth can be long lasting.**

MENTAL HEALTH FOR PEOPLE WITH CANCER

Sometimes this is referred to as **psychosocial aspects or survivorship**.

Being diagnosed with cancer and having treatment can lead to extra worries or concerns for you and the people caring for you. Depending on the treatment, you may experience any of the following:

- **low mood or depression**
- **anxiety**
- **disfigurement**
- **difficulties with eating**
- **difficulties with speaking**
- **changes in sexual activity.**

You may have got through the diagnosis and treatment for nasal and para nasal sinus cancer, but you may be finding it difficult to deal with some of the side effects of treatment. Speak with you doctor about any difficulties you may be experiencing. Your doctor may give you a referral to a psychologist or another healthcare professional who can help you. Speak with your family and friends too about any concerns you may have.

You may find it helps to join a patient support group and speak with others who are having treatment for head and neck cancer. You can also find help and advice in online self-help resources such as beyondblue.

QUESTIONS TO ASK YOUR DOCTOR

Being diagnosed with cancer can be overwhelming and confusing. There are a lot of information and treatment decisions to make at a distressing time for you and your family. To help you understand everything and get the information you need to make decisions about your health, consider asking the following questions to your cancer care team:

- **What type of cancer do I have? Where is it located?**
- **What are the risk factors?**
- **What lifestyle changes (diet, exercise) do you recommend I make?**
- **What are the chances that the surgery will cure the cancer?**
- **How long will it take before I can eat again and what sort of food?**
- **Will I need a feeding tube? How long will I need the feeding tube for?**
- **What will happen if I don't have the surgery?**
- **How much will the operation cost? Will my health insurance cover it?**
- **What are the possible side effects of treatment? How can they be prevented or controlled?**
- **Will I have a scar?**
- **Will I be able to lead a normal life?**
- **Will I need follow-up treatment? What follow-up tests will I need after the operation?**
- **What are the chances that the cancer will return?**
- **Am I suitable for any clinical trials?**

You may want to write specific questions here to ask your doctor or cancer care team

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