

Head and Neck Cancer Radiation Treatment

Information for patients receiving radiation therapy for cancers of the head and neck

Reading this booklet can help answer some questions you may have about your cancer treatment. The members of your health care team will give you more information that is specific to your condition and health care needs. If you have a question or need more information, please feel free to ask any member of your health care team.

The Head & Neck Disease Site Team
Juravinski Hospital and Cancer Centre
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Your health care team

- a radiation oncology doctor, registered nurse, and secretary
- a medical oncology doctor, registered nurse and secretary
- a surgical oncology doctor
- a reconstructive surgeon
- an advanced practice nurse or radiation therapist, a clinical trials nurse, a dietitian, a social worker, a dental hygienist, and a team of radiation therapists.

Treatment plan checklist

You may have a number of appointments. If you have any questions or concerns, please speak with your nurse.

These may include tests, such as;

- Blood tests
- Chest x-ray
- CT scan
- MRI

Appointments with your health care team, including;

- Dentist
- Medical Oncology
- Social Worker
- Dietitian
- Dental Hygienist

Treatment related appointments, such as;

- Feeding tube
- Mould room
- Simulation appointment
- Chemotherapy appointment
- Radiation treatment appointments

Treatment summary checklist

Before

- Tests
- Dental assessment
- Planning appointment

During

- Weekly assessments
- Mouth care
- Nutrition
- Symptom control

After

- Clinical assessments
- Fluoride trays or rinses
- Thyroid function

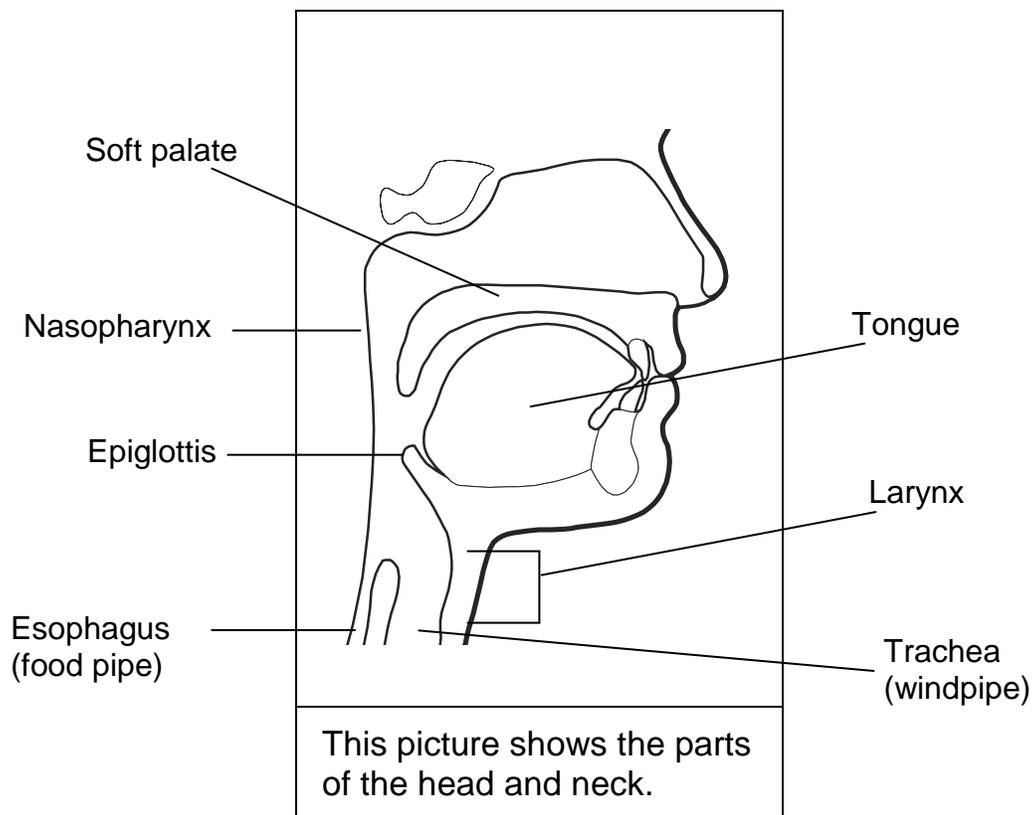
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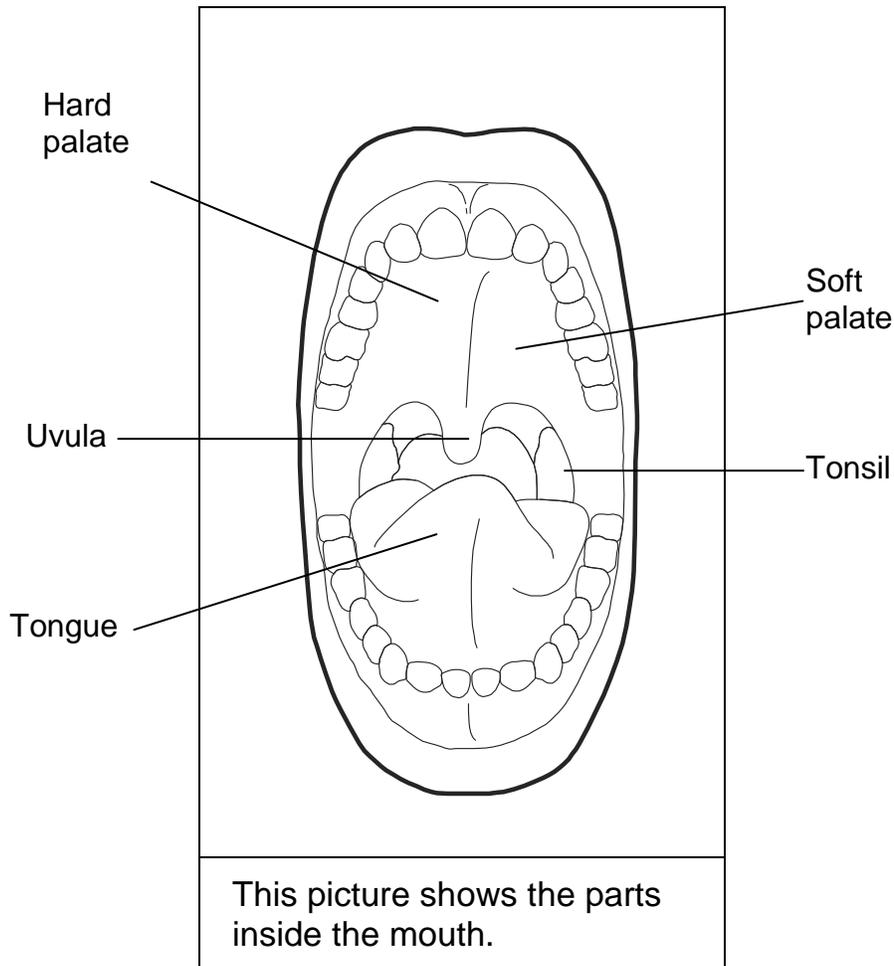
If you have any questions or concerns, please feel free to ask the members of your health care team. They can give you more information and support.

What is cancer?

Cancer is a disease that starts when a group of cells in the body lose control over their growth. These abnormal cells continue to grow to form a malignant tumour. Malignant means cancer.

Each person with cancer may have different symptoms, depending on the location and size of the tumour.





Causes of cancer

Cancer can develop in these tissues for a number of reasons including prolonged exposure to tobacco and alcohol, and previous exposure to the HPV virus.

What is radiation therapy?

Radiation therapy is a type of cancer treatment that uses high energy x-rays to damage and destroy cancer cells. These x-rays cannot be seen or felt.

Before radiation therapy is given

Making a cast/mask

The first step is usually making a cast of your face and neck. The cast will help you keep still and make sure you are in the same position during each radiation treatment. Marks on the cast are used to help reference the area that will be treated.

In preparation for making your mask you will need to remove all jewelry and men will have to shave all facial hair. If you have thick or long hair that you are planning to have cut, it should be cut before your cast is made.

The cast is made from a soft piece of plastic mesh that is heated and stretched over your face and neck and gently massaged to take on the shape of your face.

If you need dental trays because of metal fillings in your teeth, these will be made by your own dentist or by the same team members that make your cast. They can be made just after your planning appointment, or during your first week of treatment. If you have difficulty opening your mouth a custom dental tray may not be possible.

Planning your radiation therapy

Once the mask is complete, the radiation therapist takes several measurements and detailed X-rays while you lie on a special table. The radiation therapist and your doctor use the measurements and x-rays to make a treatment plan for your type of cancer. This process usually takes 1 to 2 weeks to complete.

Dental check

If you have a dentist you should try and see them before you start any treatments, and ideally even before your mask is made. Your dentist will want to check your teeth and gums, clean your teeth and be sure to remove any teeth that are not healthy enough to withstand the long term effects of radiation. If any teeth need to be removed you will have to wait at least 7 to 10 days to start radiation to allow complete healing. Please take a copy of the Dental Assessment form to your dentist.

What happens during radiation therapy?

You will usually receive your radiation treatments daily from Monday to Friday. Radiation treatment is given by a high energy x-ray machine in a specially designed treatment room.

At each visit we will help you get comfortable and put on your cast. Then the treatment machine will be positioned over the area to be treated. The radiation treatment may take anywhere from just a few minutes to as long as 30 to 35 minutes. The length of time depends on the number of treatment fields needed. A treatment field is the location where the radiation is given.

During treatment, the radiation therapists leave the room, but they will be able to see you and talk with you at all times via closed circuit TV.

The goal of radiation therapy is to destroy cancer cells. However, in the process it does harm normal cells. This can result in symptoms called side effects.

Radiation to the head and neck area can cause problems with your teeth, gums, the lining of your mouth, glands that make saliva (spit), and jaw bones.

Some side effects are temporary and start going away about 4 weeks after your last treatment. It is possible that some side effects last longer and some may not ever go away completely.

The effects of radiation therapy vary from person to person. Your experience will depend on many things, such as:

- the type of cancer
- the area that is treated
- your health
- the amount of radiation
- the length of treatment
- how well you care for yourself through the actual treatments

Smoking and alcohol will likely cause more severe side effects.

During your care, the members of your health care team will give you and your family information and support. Every day, the radiation oncology nurse and radiation therapist are available to answer questions and help with any problems you are having. Each week you will meet with your medical team. They will ask you how you are tolerating your treatments and help you with any problems or concerns.

The health care team will teach you how to care for yourself and prevent or reduce side effects. This booklet can help you remember this information.

How do I care for my skin?

Most people find that the skin in the area being treated becomes red and dry. These changes are usually temporary, and get better when the radiation therapy is finished.

On your first day of treatment, the radiation therapist will review how to take care of your skin in the radiated area and will provide a summary booklet. The oncology nurse and doctor will review your skin reaction weekly and provide instructions as needed.

How do I care for my mouth?

Radiation treatment can affect:

- your mouth and throat - making them become dry and sore
- your salivary glands - reducing the amount of saliva and making it thick and sticky
- your taste buds, making foods taste different
- your throat - making your voice weak or hoarse
- your gums and throat (later on) – making them become red and sore

Some mouth problems get better and go away a few weeks after treatment is finished. The changes in taste may last for 2 to 6 months after treatment. The glands that make saliva can take several months or years to recover. The resulting dryness may or may not go away, depending on the area treated and the dose of radiation.

Check your mouth

It helps to have a healthy mouth before radiation starts.

Look inside your mouth each day. Check for any white patches, painful areas or other changes.

Keep your mouth moist

Keep your lips moist with a lip balm or gel, such as Blistex or Muko. If your mouth is dry, sip cool water or suck on ice chips. Artificial saliva can also help keep your mouth moist. Sugarless gum or candy is also helpful.

Keep your mouth and teeth clean

Every 2 hours, rinse your mouth with a warm solution of baking soda and water. To make the rinse, stir 2.5 ml (½ tsp) baking soda into 250 ml (8 oz) warm water. Throw away any mouth rinse that is left after 24 hours. You can use a store-bought mouthwash only if it has no alcohol. Mouthwashes that contain alcohol can dry your mouth and should not be used.

Gently brush your teeth, gums and tongue after each meal and at bedtime.

Use a brush with soft, even bristles and fluoride toothpaste, such as Aim[®] or Crest[®]. If you prefer, make your own toothpaste by mixing baking soda with a little water. If your toothbrush feels too harsh, try cleaning your teeth with foam toothettes.

After meals, floss your teeth with waxed dental floss. Be careful not to cut the gums.

Denture care

Wear dentures only for eating or not at all if they hurt too much. Keep dentures and denture soaking containers clean. Dispose of cleaning solutions daily.

Remove dentures when sleeping.

How can I relieve or manage pain?

The radiation x-rays are not painful, but they can make your throat red and sore. After 3 to 4 weeks of treatment, it can be painful to chew and swallow.

Your doctor can prescribe medication to relieve pain. This medication works best if you take it regularly, as directed by your doctor.

Can I take vitamin supplements during treatment?

Please tell your team if you are taking any over-the-counter vitamin supplements. You may take a multivitamin if you wish. Taking antioxidants is not recommended during treatment.

How can I eat well during treatment?

One of the most important parts of your care is getting enough nutrition. This can be difficult, as radiation can affect your taste and ability to eat. Your goal is to take in enough food to keep your weight at a normal level. To meet your needs, you will probably have to increase the calories and protein in your diet.

On the next few pages are summary suggestions for increasing calories and protein, and for managing some common eating problems. A separate nutrition booklet for patients with head and neck cancer is also available. **If you have any questions or concerns, please ask to speak with the dietitian.**

You may need a feeding tube

If you are having chemotherapy as well as radiation, you may need a feeding tube. This is a thin, flexible tube about the size of a small straw. During surgery or in x-ray department, the feeding tube is put into your stomach through your abdomen. The end of the tube is secured inside your stomach.

Even if you have a feeding tube we will still encourage you to eat as normally as possible during your cancer treatment. If you stop swallowing it will be difficult to start again after treatments are complete. However, it is not always possible to get all the calories you need. Liquid food and fluids can be put directly into your stomach through the tube. When treatment is finished, most people are able to go back to eating solid foods.

If you need a feeding tube, you will meet with the doctor and dietitian. They will give you more information and support so that you feel comfortable with the feeding tube. Home care nurses will provide care after the tube is inserted and will monitor your ability to care for it on your own.

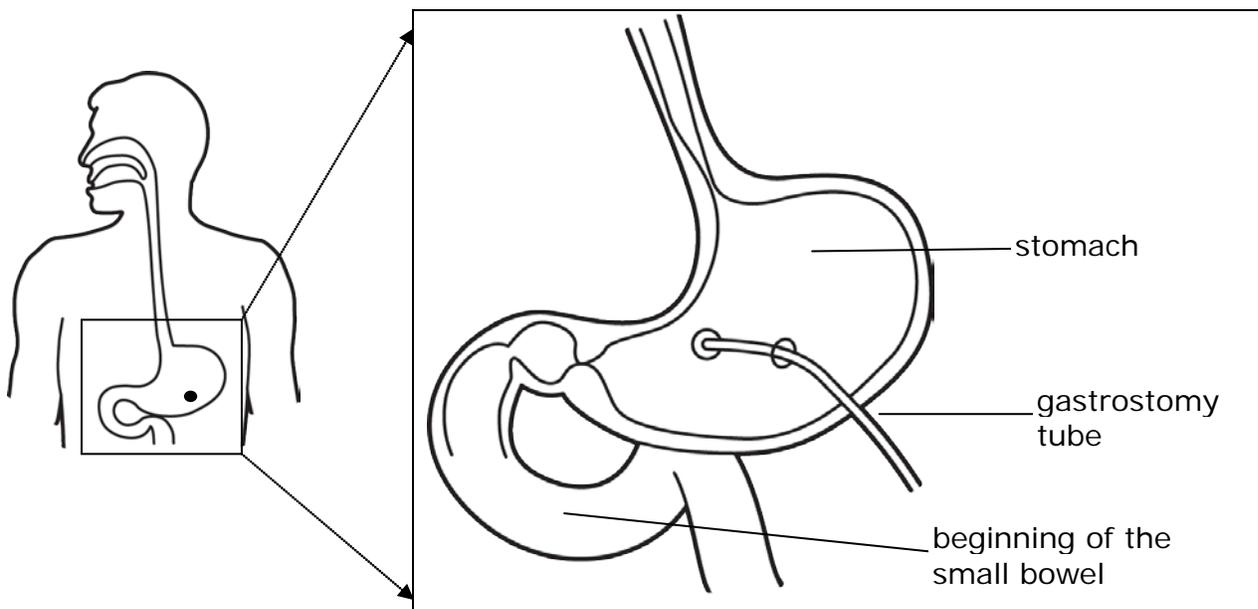
Gastrostomy tube feeding (PEG or RIG tube)

What is Gastrostomy tube feeding?

Some people during their cancer experience may have difficulty with eating and/or drinking. A gastrostomy tube is a very small tube (size of a small straw) that is placed into your stomach. You can put liquid food and water through this tube. This will help you feel well when eating becomes difficult.

Where is the tube in my body?

The tube goes through the stomach wall with the tip located in your stomach.



How will I look after the gastrostomy tube?

Once the tube is inserted you will have plenty of support in your home and at the Cancer Centre. Your dietician and your primary team will follow you regularly. Community services will come to your home to help you care for your tube.

Tips for increasing protein

- Add dry skim milk powder to regular milk, sauces, gravies and puddings. Add extra ice cream to shakes. Add half & half evaporated milk to instant cocoa, soups and puddings.
- Add grated cheese to casseroles, vegetable and sauces. Blended cottage cheese makes a great dip.
- Finely chopped eggs can be added to sauces, casseroles, meat and salads. Make drinks and desserts that use eggs, such as eggnog and angel food cake.
- Add chopped or pureed meats to soups and casseroles.

Tips for increasing calories

- Melt margarine on bread, cereals, vegetables, rice and eggs.
- Use sour cream on potatoes, meat and fruit.
- Use cream cheese on bread and fruit.
- Use mayonnaise instead of salad dressings.
- Put peanut butter on apples, bananas, celery, carrots and breads.
- Top puddings, pies, hot chocolate, gelatin and fruit with whipped cream.
- Use honey, candies and jelly, but only after eating nutritious foods.

Taking supplements

If you are unable to eat enough regular foods, you may need to add drinks that are rich in protein and calories. These drinks are called supplements. Supplements can be swallowed or put through the feeding tube.

Milk shakes, eggnog and fruit shakes are supplements you can make at home. Add skim milk powder to milk shakes and a variety of foods, as it is an excellent source of protein. Experiment with some of your favourite foods and new recipes.

How to help with changes in taste

- If your sense of taste has changed or decreased, try eating warm foods that smell good.
- Flavour foods with seasonings such as basil, oregano, tarragon and mint.
- If your taste buds are sensitive, use less seasoning on foods.
- Add fruit and juice to milk shakes, custards, ice cream and puddings.
- Marinate meat in soya sauce, teriyaki sauce or sweet (non-citrus) juices.
- Serve meat alternatives such as fish, cheese, ham or eggs.

How to help with a dry mouth

- Eat foods that are moist or soft.
- Prepare foods in cream sauces.
- Soften foods with gravy, broth, sauces or melted butter.
- Moisten foods with tea, coffee or milk.
- Drink plenty of fluids (unless your doctor has told you to limit fluids).
Try to drink 6 to 8 cups of water or other liquids each day.
- Avoid or decrease the amount of caffeine and alcohol you drink each day.

How to make swallowing and chewing easier

- Grind, chop or puree meats. Mix with cream sauces, gravy broth or mix with other foods in a casserole.
- Eat canned or cooked fruits, or fruits pureed in a blender. You may eat infants' strained fruits.
- Make rich soups of creamed or blended meats and vegetables, or beans, peas and lentils.
- Cook hot cereals in milk instead of water. Serve them with margarine, butter or cream.
- Have gelatin, ice creams, puddings, custards and milk shakes.
- Soft rolls and breads are less likely to be irritating.
- Limit or avoid foods that are dry, hard or have sharp edges. Examples are dry snack foods, dry coarse cereals, crackers and foods with seeds.
- Cook vegetables until tender and puree in the blender. Eat canned or infants' strained vegetables.
- Swallowing may be easier if you tilt your head upward, so that food flows to the back of your throat.

How to ease a sore mouth or throat

- Try drinking liquids with a straw.
- Have 5 to 6 small meals a day, instead of 3 larger meals.
- Have high protein, high calorie drinks.
- Eat foods at room temperature. Foods that are very hot or cold may increase the soreness of your mouth or throat.
- Chocolate may also make your mouth or throat sore.
- Limit foods that are acidic. This includes citrus fruits and juices, tomatoes and foods made with tomato sauce. Choose nectars and imitation fruit drinks (with added Vitamin C) instead of orange or grapefruit juices.
- Limit seasonings and condiments, such as pepper, hot sauces or spicy meat sauces.

How to eat well with a poor appetite

- Have 5 to 6 small meals a day, instead of 3 larger meals.
- Make a plan to have meals and snacks at certain times. Stick with your meal plan, even when your appetite decreases.
- Serve your favourite foods often.
- Use your imagination and try different types of foods.
- Choose colourful foods or use garnishes to make your food look attractive.
- Try making meals enjoyable with colourful place settings and soft music to help you relax.
- Make food preparation and eating as easy as possible.
- Eat foods that are high in protein and have high calorie snacks available.
- Limit drinks that are low in calories, such as black coffee and tea.

How to prevent constipation

Constipation occurs when you have fewer bowel movements, or they become dry, hard and difficult to pass. You may become constipated if you are no longer able to eat a regular diet, or are taking certain pain medications.

Here are some ways to keep your bowels moving smoothly.

- Add natural bran to soft cereals, soups, mashed potatoes and puddings. To keep bowels regular, add 30 ml (2 tbsp) of bran a day, or more if needed.
- Eat prunes or drink prune juice.
- Add grated raw fruits or vegetables to salads and casseroles.
- Make soups with dried beans, peas, lentils and soya beans.

- Add fresh parsley to salads, soups, casseroles and mashed potatoes.
- Keep active with walking or regular light exercise.
- Drink plenty of fluids (unless your doctor has told you to limit fluids). Try to drink 1.5 to 2 litres (6 to 8 cups) of water or other liquids each day.
- Take stool softeners or laxatives as recommended by your doctor or radiation oncology nurse.

How can I keep active when I feel so tired?

It is very common to feel tired during radiation therapy. There are many reasons, for fatigue, including:

- your body is under physical and emotional stress
- your rest and sleep is interrupted by worry, discomfort or a hospital stay
- you are not eating and drinking as usual
- travelling to the cancer centre each day

Here are some ways to conserve your energy:

- Rest when you feel tired. Pace yourself when you are active so that you will not get overtired. Go to bed earlier.
- Ask for (and accept) help with childcare and housework.
- Call your local Cancer Society Office to arrange for a volunteer driver to take you to your appointments.
- Take medication as directed by your doctor.

Try to keep your life as normal as possible. Continue to see your family and friends. Keep doing the activities you enjoy. Check with your doctor about whether you should go to school or work during your treatment.

What about sexual relationships?

Close relationships and intimacy are important for you during this time. Fears and myths of being radioactive and spreading cancer by touch are common, but are not true. Receiving radiation treatments will not make you radioactive and you cannot spread cancer by touching or kissing.

If your sexual desire and energy level changes during treatment, keep in mind that this is normal and can happen for many reasons. Some common concerns are stress, fatigue and body image. You may find that intimacy takes on a new meaning and you relate differently. Hugging, touching and cuddling may become more important, while sexual intercourse may become less important. It is important to discuss your feelings with your partner.

If you would like to discuss your concerns please speak to your health care team or consider a referral to a counselor/social worker in the Supportive Care Department.

Human Papilloma Virus

The human papilloma virus (HPV) is a virus that causes wart-like growths. There are over 100 different types of HPV. Some types of HPV are now known to cause cancer of the tonsil and back of the tongue.

Human papilloma virus is commonly transmitted as a sexually transmitted infection (STI) and 50% of sexually active people will be infected with HPV at one point in their life. In the majority of cases, the HPV infection is cleared by the body's immune system. But previous exposure does appear to increase the risk of developing cancer. In addition to causing cancer of the tonsil and back of the tongue, HPV may also cause cervical, anal or penile cancer.

Researchers have discovered that patients with cancer caused by HPV are more likely to be cured of cancer. Various tests can be done on biopsy specimens to determine if HPV had a role in causing cancer.

Since 2007, the Ministry of Health and Long-Term Care offers free vaccination for girls in Grade 8 against the strains of HPV that are known to cause cancer. Currently, universal vaccination is not available for boys in Ontario.

Tobacco

The use of tobacco products causes throat, tongue and voice box cancer. People diagnosed with cancer in these areas, need to work hard to stop using tobacco products.

Quitting smoking (and quitting the use of other tobacco products) is a very important part of the treatment for cancer of the tongue, throat, or voice box. While quitting smoking can be very difficult, it is crucial for many reasons. First, radiation treatments are known to work better if patients quit smoking before treatment starts. Second, the risk of complications after surgery to treat cancer is reduced in patients who quit smoking. Third, people who are cured of cancer but continue to smoke are at very high risk of getting a second cancer that may be more difficult to treat.

Of course, quitting smoking can be challenging. Tobacco is extremely addictive because it contains nicotine. Nicotine directly alters the levels of certain chemicals in the brain to create a sense of pleasure and reinforce the use of tobacco.

There are several treatment options to help people wishing to stop using tobacco products. In general, these treatments work by reducing tobacco withdrawal symptoms. Treatments include counseling, medications that contain nicotine, and medications that contain chemicals which mimic the effects of nicotine.

To discuss treatment options further you can contact your family doctor or call the Canadian Cancer Society smokers helpline at 1-877-513-5333. You can also visit the website www.smokershelpline.ca.

You may need to make changes in your lifestyle. Smoking, chewing tobacco and drinking alcohol are not advised. Smoking and alcohol use increases the risk that your cancer will reoccur or a new cancer will form.

Taking care of your skin

The skin of your face and neck will be more sensitive to sunlight and can burn easily, especially the first year after treatments. Before you go outdoors, cover your skin with clothing, and a hat. Put on a sunblock with SPF greater than 15 on any exposed skin. When you are outdoors, try to stay in the shade and reapply sunblock often.

Facial hair that was lost in the area that was treated does not usually grow back.

Taking care of your teeth

Continue having regular check-ups with your dentist after treatment. If you wear dentures, they may need to be adjusted after 3 months.

Continue regular brushing and flossing. Remind your dentist that you have had radiation therapy. The dentist must call your radiation oncologist for more information if you will need teeth removed. If teeth removal is necessary, antibiotics or other special treatments may be needed.

If you have a dry mouth when you are seen at the time of your first appointment after treatment, you will need to use fluoride trays. If the dryness improves, then fluoride rinses should be fine.

Fluoride Treatments help prevent cavities. If you had dental trays made for radiation treatment, these same trays can be used as fluoride trays. Fluoride filled trays, which resemble a sports mouth guard are placed over dry teeth for a few minutes daily. Spit out excess fluoride and do not rinse, eat or drink for thirty minutes afterwards.

If you would like to have a consultation with a dental hygienist at the cancer center, ask your health care team to book an appointment for you. The dental hygienist can assess your teeth and provide additional oral (mouth) care education at no cost to you.

Late effects of radiation

In addition to the side effects you may have during treatment, you may develop other side effects later on. Whether or not you develop late radiation effects depends on the amount of radiation, the site of the cancer and the size of the area treated.

Late changes may include:

- **Jaw stiffness**

Radiation treatment may have damaged the muscles used for chewing. As the damage heals, scar tissue develops which is less flexible. Please let your doctor or primary nurse know if this is a problem.

- **Swollen chin and neck**

Radiation may cause fluid to build up under your chin. This usually appears 6 to 8 weeks after treatment and slowly gets better over several months.

- **Difficulty swallowing**

Radiation may cause changes in the tissues involved in swallowing. If you are interested, ask your health care team to refer you to the Swallowing Clinic to see a speech language pathologist. Tests would be done to assess the problem and to help improve swallowing function.-

What happens when my radiation therapy is finished?

When your treatments are finished, the radiation you have received will continue working for several weeks. Side effects from radiation will also continue after your last treatment. Continue your skin and mouth care, and eating well. Your symptoms will gradually start to decrease over the next few weeks and you should begin to feel better. Usually you can start to decrease pain medications at this time.

You will need a follow-up appointment with the doctor in 4 to 6 weeks. During this time, much of the radiation reaction subsides. At your clinic visit the doctor will be able to assess the effect of the radiation therapy on the tumour. The dietitian will assess the possibility of removing the feeding tube at this appointment if you are not using it and still maintaining your weight.

Follow-up

Usually patients are closely monitored every 3 months the first year after treatments are completed, then every 4 months the second year, every 6 months the third year and then yearly until 5 years after treatment. This follow-up may be shared between your radiation doctor and your surgeon or ENT specialist.

Some patients will require annual checks of their thyroid gland and others may require routine chest x-rays every year.

Additional support for you and your family

A diagnosis of head and neck cancer can result in tremendous psychological and social stress for you and your family. It may help to talk about your concerns and fears with your doctor, nurse, a close family member or a friend.

Social work counseling is available and can provide:

- emotional support
- individual, couple and family counselling
- help with money matters
- help in communicating with the health care team
- information on community resources and support groups
- help talking with your children
- information and support around end of life care
- bereavement counselling

You may wish to talk to a chaplain. The chaplain can help people of all faiths with their spiritual and religious needs. He or she can arrange for a visit with a member of your clergy.

Should you wish to consult with the Aboriginal Navigator, we can make those arrangements for you too.

All of these services are available through supportive care services and you can be referred by your health care team or you can refer yourself.

Where can I get more information?

- The **Patient and Family Resource Centre** at the Juravinski Cancer Centre 905-387-9495, ext. 65109. www.icc.hhsc.ca
- Path Finder on Head and Neck Cancers from the Patient and Family Resource Centre
- **Cancer Information Service** – 1-888-939-3333

Information about head and neck cancer is also available on the websites listed below. If you do not have a computer, you can access the internet in our Patient and family Resource Centre or at your local branch of the Public Library. Health information on the internet may not apply to your condition and health care needs. Please discuss the information you find with your health care team.

Canadian Cancer Society
www.cancer.ca

MedlinePlus – U.S. National
Library of Medicine
[www.nlm.nih.gov/medlineplus/
headandneckcancer.html](http://www.nlm.nih.gov/medlineplus/headandneckcancer.html)

Cancer Care Ontario
www.cancercare.on.ca



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