Head & Neck Oncology Patient Guide

Department of Oral & Maxillofacial Surgery
This Head & Neck Oncology Patient Guide was developed in 2019 to help Michigan Medicine patients and their caregivers throughout the head and neck cancer experience.

Use this book as a reference guide, starting with the table of contents. There you will find topics ranging from pre-operative information, to descriptions of each procedure and the recovery process. Questions you have may be answered in this guide. If you have questions that require further explanation or you have concerns about something you don’t understand, make a list to ask your doctor or nurse at your next office visit, or contact us at (734) 936-5950.

We know any cancer can be emotionally and physically stressful. Our team of doctors and other healthcare professionals understand this and want to help you through this process. We hope you find this information helpful.

Using this guide does not replace medical consultation with a qualified healthcare professional to meet the health needs of you or others. While the content of this guide is frequently updated, medical information changes rapidly and therefore, some information may be out of date or contain inaccuracies or typographical errors.

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YOUR HEAD AND NECK CANCER TEAM

Clinical Care Coordinator
A registered nurse (RN) who specializes in head and neck cancer who will work with the rest of your healthcare team to get you ready for surgery.

Advanced Practice Provider
An advanced practice provider (APP) is a nurse practitioner (NP) or doctor’s assistant (PA) who works closely with the surgeon to provide medical care in the clinic and during your hospital stay. The APP may be involved in your diagnosis, diagnostic evaluation and management of medical problems. As a survivor, you will be followed long term by an APP.

Head and Neck Cancer Surgeon
A doctor who will perform your surgery. Your surgeon is responsible for the evaluation of your medical condition in preparation for surgery, performing your surgery and providing post-operative care.

Surgical Head and Neck Fellow
A surgeon who has completed their training but wishes to pursue additional training to specialize in head and neck cancer.

Surgical Resident
A surgeon who is near completion of surgical training. They work very closely with your primary surgeon in the clinic and operating room.

Dentist
A doctor of oral health who is trained to diagnose, treat and prevent oral diseases, as well as the treatment of teeth and oral hard and soft tissue.
Anaplastologist
A clinician who specializes in making custom prostheses, such as eyes, ears and noses, to rehabilitate an absent, disfigured or malformed part of the body.

Speech-Language Pathologist (SLP)
A healthcare provider who specializes in evaluating and treating speech, language and swallowing.

Social Worker
A healthcare professional who works in the hospital and assists you and your family if you need psychosocial (emotional) care or assistance, or require resources outside of medical care or advance directive planning.

Registered Dietitian Nutritionist (RDN)
An expert who will provide nutrition advice based on your medical condition and individual needs.

Primary Care Provider
A doctor responsible for providing your general care and may assist with all the testing needed for surgery.

Radiation Oncologist
A doctor who specializes in radiation treatment for cancer.

Medical Oncologist
A doctor who specializes in using chemotherapy or other medications to treat cancer.
What is Head and Neck Cancer?
WHAT IS HEAD AND NECK CANCER?

Head and Neck Cancer

Your body is made of trillions of cells. Cancer is a disease of cells and can start anywhere in the body. When cancer spreads to other parts of the body and grows, it’s called metastasis. These cancer cells look just like the ones from the head and neck where they originally started.

Cancer is always named for the place that it starts in the body. When head and neck cancer spreads to another area like the lungs, it is still called head and neck cancer. It would not be called lung cancer unless it started in the lung.

There are different kinds of head and neck cancer:

- **Oral cavity cancer** starts in the mouth.
  - Buccal mucosa is the inside the cheeks.
  - Floor of the mouth is under the tongue and between the teeth.
  - Anterior tongue is the front two-thirds of the tongue.
  - Alveolar ridge is the gums and the base of the teeth.
  - Retromolar trigone is the gums behind the wisdom teeth.
  - Hard palate is the roof of the mouth.

- **Nasal cavity cancer** starts in the area at the opening behind the nose and goes down to join the back of the mouth and throat.

- **Oropharyngeal cancer** starts in the voice box.

- **Hypopharyngeal cancer** starts in the lower part of the throat beside and behind the voice box.

- **Paranasal sinus cancer** starts in the opening around the nose called the sinuses.

- **Nasopharyngeal cancer** starts in the upper part of the throat behind the nose.

The most common type of cancer in the head and neck area is called carcinoma. These cancers start in the tissues that line the parts of the nose, mouth and throat.
Lymph Nodes

Lymph is a clear fluid found throughout your body, including your mouth. Lymph cells give other cells food and water, and contain germ-fighting blood cells. Lymph drains from tissue into vessels that transport it to the bloodstream. As lymph travels, it passes through small structures called lymph nodes. Lymph nodes remove germs from lymph. Lymph nodes are commonly removed in head and neck cancer so it is important to know what they are.

Ask Your Doctor to Show You Where Your Cancer Is
Cancer Staging

**Staging** is the way the disease is measured, describing the growth of the primary tumor. A number (0-4) is assigned to each factor. The more serious the growth, the higher the number assigned.

There are three important aspects:

- **T Score:** The size of the cancer inside the mouth (T stage). T0 (zero) means no evidence of primary tumor has been found. T4 means the tumor has spread to nearby structures and is considered an advanced local disease.

- **N Score:** The N score describes the cancer status of nearby lymph nodes. If there has been any spread of the cancer to the lymph nodes (glands) in the neck, there will be an N score (N stage). N0 (zero) means the nodes are cancer free. N1 or above means cancer is in the lymph nodes.

- **M Score:** The M score tells if the cancer has spread to body parts distant from the mouth and neck. Spread of the cancer to other parts of the body is the M score (M stage). M0 (zero) means there are no distant metastases. M1 means one or more distant metastases are present. The lungs are the most common place oral cancer is spread.
**After Staging**

Staging represents a detailed description of the cancer. It will help decide whether you need surgery, radiation, chemotherapy or a combination of these options.

**Questions**

Everyone on your healthcare team will do everything they can to answer your questions accurately and clearly, at any time. This can be a confusing and scary time for you and your family, so we encourage you to bring family or friends to your clinic appointments. It’s a good idea to write down questions for your healthcare providers. If you don’t understand answers to your questions, please ask again.
Diet and Nutrition
Nutrition Before Surgery

Nutrition is an important factor leading up to surgery. Better nutrition before surgery can lead to better outcomes after surgery. There are two main factors for ensuring good nutritional status – adequate calorie intake and sufficient protein intake. Your weight is the best indicator as to whether or not you are eating enough calories.

Ways to Increase Calories and Protein Before Surgery

- Try eating smaller, more frequent meals and snacks.
- If appetite is poor, try at least taking a couple bites of food every hour.
- Think of food like medicine. Scheduling meals and snacks can help increase overall calorie and protein intake.
- Drink fruit juice, milk or other calorie-containing beverages instead of water.
- Consume whole milk in place of skim or 1% milk.
- Add extra fats and oils (cheese, butter, margarine, cream cheese, sour cream or avocado) to food.
- Make milkshakes or smoothies with ice cream or yogurt.
- Add peanut or nut butters for both extra calories and protein.
- Aim to have a good source of protein with each meal and snack. Good sources of protein include meat, fish, eggs, yogurt, milk, beans/legumes, and nuts/seeds.
- Try including a high-calorie and high-protein supplemental nutrition drink (available at local grocery stores) – either premixed or a protein powder mixed with whole milk.

If you have poor oral intake or unintentional weight loss before surgery, a registered dietitian will provide additional resources to improve your nutritional intake.

Nutrition Following Oral Maxillofacial Surgery

Depending on the type of surgery you have, you will either be able to eat a modified textured diet or you will receive nutrition through a feeding tube. Ask your surgeon about which pathway you will take following surgery. Please see the respective post-surgery nutrition plan based on your pathway on the following page.
For Patients Fed Orally

If you are being placed on an oral diet following surgery, you will most likely be instructed to eat a modified texture diet. Some patients may be required to use a syringe depending on their ability to open the mouth. Here is some information regarding possible diets that you may be placed on.

Full Liquids/No Chew Diet
Sometimes referred to as a blenderized diet, these are foods that are cooked until tender then processed in a blender or food processor to the point where they can be consumed in a cup, straw, or syringe. These foods should not require any chewing. Here are some examples:

- Easiest meals include milkshakes, smoothies and blended soups
- Protein sources like yogurt, milk, protein shakes, protein powders, blended meats/cheese
- Canned fruits and vegetables come very soft so are quick and easy to blend
- Pureed meats thinned with gravy, creams, sauces in a blender

**Note:** Be sure to sift out any seeds or skins left over from blending meals

Pureed Diet
Food is to be ground, processed or blended to a soft, smooth consistency; food items tend to be thicker than full liquids. This diet includes any full liquids, as well as the following:

- Pureed meat, fish or poultry (does not need to be thinned)
- Scrambled eggs, cottage cheese, mashed potatoes
- Pureed fruits/vegetables, applesauce, smooth pie filling
- Pureed bread products (pancakes, casseroles, pastas, etc.)

Soft Diet
Food is easily chewed and is not rough in texture. It includes pureed foods and full liquids. Examples of a soft diet include:

- Tender meats with sauce/gravy, baked or broiled fish, egg or tuna salad
- Well-cooked vegetables, canned fruits, ripe bananas, melons, peeled apples or pears
- Cooked noodles, pancakes, casseroles, cooked cereals
- Soups (do not need to be blended), cottage cheese, soft cheese, fruited yogurt
Patients Fed Via Feeding Tube

If the plan is to place a feeding tube during surgery, it will most likely be placed in the nose and extend into the stomach (see picture below). This is called a **nasogastric feeding tube**. Some patients may already have an existing feeding tube that will be used for feeding.

A registered dietitian (RD) will perform a nutrition assessment in order to choose a formula and amount that provides enough calories and protein for healing after surgery. This assessment will be based off height, weight, type of surgery and nutritional status before surgery. It is important to inform the RD or team of food allergies you have.

Following the nutrition assessment, tube feeds will be started using a pump at a low continuous rate (usually 20-30 mL/hr) and advanced slowly to the goal set by the dietitian. Alternately, you may be fed with **gravity feeds**. This means tube feeds will be delivered without a pump. Instead, a clamp is used to control how quickly feeds are given. Gravity feeds are given at intermittent intervals throughout the day, similar to eating three meals a day. You will receive one to two cartons of tube feeds at a time, depending on your goal tube feed amount.
The name of your formula is __________________________________________

You will require ______ cans (_________ mL) of this formula per day.

Suggested feeding regimen: _____ cans (_____ mL) per feeding x _____ feeds + _____ cans (_____ mL) per feeding x _____ feeds.

This regimen will provide: ___________ calories, ___________ protein (grams), and ___________ mL water per day.

Additional water needed for hydration: _______ cups (_________ mL) per day.

The nursing staff will train you on how to administer gravity feeds and you will receive supplies for continuing feeds after discharge. Some patients may use gravity bags or a syringe for tube feeds. A case manager will meet with you before discharge to assess coverage for home tube feeds. If your insurance does not cover tube feeds at home, the dietitian will provide you with over-the-counter substitutes to the formula selected. Generally these include oral nutritional supplements that provide about 300-350 calories and 15-20 grams of protein per bottle.

**Problem Solving When on Tube Feeds**

**Diarrhea, Gas or Bloating**
- May be related to medications (bowel regimens or antibiotics).
- Feedings are being given too quickly.
- Not enough fiber or too much fiber, depending on the formula (check with your doctor or dietitian).

**Nausea**
- May be a side effect of medications or surgery.
- Feedings are given too quickly.
- Ask your doctor for anti-nausea medications.
Clogged Feeding Tube

- Make sure you are flushing your tube with water before and after feeds then every 4 hours otherwise (this will help with hydration as well).
- Call your doctor’s office or home infusion company if problems persist or if you have further questions.

Your surgeon will decide how long you are required to stay on tube feeds. This may depend on the extent of your surgery. Please talk to your surgeon about any questions you have regarding length of time on tube feeds and diet advancement following tube feeding.

Instructions for Tube Feeding at Home

1. Start with a clean work surface and assemble your supplies:
   a. Formula
   b. Feeding bag and tubing
   c. Water
   d. 30-60cc syringe

2. Wash hands.

3. Start your tube feeding in a seated upright position. Your head should be above your stomach.

4. Check tube for placement. Each tube should be marked with ink (or a stitch) at the point where it is inserted into the body. Make sure tube is in right place. If it does not seem to be correctly positioned, call your doctor or visiting nurse.

5. Flush the tube with 30cc of water.

6. Close the roller clamp on the feeding bag.

7. Shake the can of tube feeding and pour it into the bag.

8. Attach the feeding tubing and place the bag above your stomach level. (Some people place it on a nail in the wall.)

9. Open the roller clamp and adjust the rate as tolerated.
**After Feeding**

- Flush your feeding tube with 30cc water. After you detach the feeding bag, rinse it out as directed.

- To prevent nausea, vomiting and aspiration (accidental breathing in of food or fluid into the windpipe), you need to sit with your head and chest above your stomach during and for 30-60 minutes after feeding.
Pre-Surgery
PRE-SURGERY

Your First Office/Clinic Visit

- Check in to the front desk and have a seat in the lobby.
- You will be taken back into an exam room.
- Your blood pressure, heart rate and temperature will be recorded.
- You will be asked about your health and social history.
- A healthcare provider will examine the inside of your mouth.
- A special kind of x-ray will be taken called a **panoramic x-ray** that looks at both the upper and lower jaws and teeth on a single x-ray.
- A small camera, called a **nasopharyngeal scope**, may be passed through your nostril so the healthcare professional can see your vocal cords.
- You may see several healthcare providers on the same day (surgeon, nurse practitioner, nurse, speech language pathologist).
- You will be instructed how to set up your patient portal to view your healthcare information online.
- Please bring your contact information for your dentist, primary care doctor and any specialty doctors/cardiologist you see.

Possible Tests and Check-ups

- Preoperative history and physical
- Blood draw
- A test of your heart called an electrocardiogram (EKG)
- A Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) scan to look for nearby cancer
- A dental exam for dental clearance
- An exam by a cardiologist (a doctor who specializes in the heart)

What is a CT (Computerized Tomography) Scan?

A **CT** scan is a special kind of x-ray that usually takes around 30 minutes to scan one part of your body and longer if more than one area is scanned. You typically can eat, drink and continue to take medication before your CT scan, but if you aren’t sure, please contact your healthcare provider. Your healthcare provider will decide if you need dye injected into your vein to improve the quality of the scan. The test should be painless other than a needle poke to inject the dye.
It may take several days for the results to be available. Your healthcare provider will contact you to discuss the results or review them with you when you return to clinic, or send them to your patient portal.

**What is an MRI (Magnetic Resonance Imaging)?**

Unlike a CT scan, an MRI does not use x-ray radiation, but instead uses magnetic fields to build pictures. The test usually takes about 30 minutes to scan one part of your body and should not be painful. You may eat or drink and continue to take any medications before an MRI. If you are unsure, please contact your healthcare provider.

It may take several days for the results to be available. Your healthcare provider will contact you to discuss the results or review them with you when you return to clinic, or send them to your patient portal.

**What is a PET Scan (Positron Emission Tomography)?**

A PET scan uses a special dye containing radioactive tracers that can be swallowed, inhaled or injected into a vein to help diagnose some conditions in your body, including cancer.

It may take several days for the results to be available. Your healthcare provider will contact you to discuss the results or review them with you when you return to clinic, or send them to your patient portal.

**If You Need Further Evaluation**

Your doctor may ask that you get blood work drawn:

- **White blood count** (WBC) monitors for infection.
- **Hemoglobin** (HGB) monitors for blood loss, evaluates for anemia (low red blood cell count).
- **Hematocrit** (HCT) monitors for blood loss, evaluates for anemia.
• **Platelets** (PLT) monitors for bleeding tendencies.
• **Prothrombin Time** (PT/INR) monitors blood clotting.
• **Glucose** (blood sugar) monitors pancreas function; can be an indicator of how well diabetes is managed.
• **Sodium** (Na) monitors for electrolyte balance.
• **Potassium** (K) monitors for electrolyte balance.
• **Creatinine** (Creat) is a measure of kidney function.
• **Albumin** (ALB) monitors liver function.

Your provider may need to place a scope inside your nose to view the area behind the nose, throat and vocal cords.

**What is a Biopsy?**

A biopsy is a procedure that removes a small amount of tissue for lab testing that can help confirm the cancer diagnosis. All results will generate a pathology report that can be released into your patient portal. Your medical provider will review the results with you.

**What is a Fine Needle Aspiration (FNA)?**

Your doctor may recommend an FNA to a nodule, mass or enlarged lymph node. An FNA is a biopsy technique where a needle is inserted into the area of concern to obtain a tissue or fluid sample to help make a diagnosis. Before the procedure, the area is injected with medication to make it numb and then a needle is quickly inserted to obtain tissue cells. Depending on the type of cells present, additional tests may need to be performed.

FNA is a quick and accurate way to determine the cause of an abnormal nodule or mass. Possible causes include infectious, inflammatory and cancerous diseases.

**Why a Speech and Swallow Exam?**

Cancer and surgery can cause problems with speech and swallowing. Your speech-language pathologist (SLP) will watch and listen as you talk and eat.
A Surgical Plan

Once you and your doctor have agreed you need surgery, you will be scheduled to meet with an anesthesiologist. This doctor is responsible for safely putting you to sleep during surgery. The anesthesiologist will assess if anesthesia is safe for you, review your medications and instruct you on which medications you can take on the day of surgery. You may need to stop taking some medications several days before surgery.

If you are on a blood thinner, you will need to discuss with the prescribing provider how many days before surgery you should stop taking the blood thinner. This is often your primary care provider (family doctor) or your cardiologist (heart doctor).

Social Work Recommendations

How to Prepare for Your In-patient Admission

Discuss your scheduled admission with loved ones. Let them know you will be counting on them for support. Ask each person to help out in small, but specific, ways.

Before admission, you will need to:

• Designate a health care advocate.
• Talk to trusted family members about your medical condition and determine who will best represent you. Select someone who you want making medical decisions on your behalf.
• Contact the clinic social worker (before your admission) or in-patient social worker as soon as possible during your admission process and request assistance in completing an Advance Directives document.
• Make copies of the advance directives available to clinic or hospital staff.

Ask Yourself These Questions About Medical Insurance Coverage

• Do you have insurance?
• Do you have adequate insurance (Medicare A & B & Part D, an Advantage Care plan or Medicaid)?
• If you’re not sure of your insurance status, contact the business office or patient financial counselors (PFC) directly at (877) 326-9155 (toll-free) or (734) 232-2621 (local) for eligibility, application and enrollment assistance.
• Alternatively, contact your insurance company to find out what benefits you have under your current plan, as well as for questions about what will be covered in your specific case. Contact information for your insurance company is available on the back of your insurance card.

• Remember to take notes (especially for names and telephone numbers) for anyone you speak with.

**Transportation**

If you need transportation, family and friends are always a good place to start. How about neighbors and the faith community? Ask yourself, “Who is in my network?”

(Name and telephone contact) can assist with **admission transportation**.

(Name and telephone contact) is my **back-up plan for admission transportation**.

(Name and telephone contact) can assist with **discharge transportation**.

(Name and telephone contact) is my **back-up plan for discharge transportation**.

(Name and telephone contact) can assist with **transportation to follow-up appointment at the clinic**.

(Name and telephone contact) is my **back-up plan for transportation to follow-up appointment clinic**.
Pets

Please make arrangements for pets. Identify someone in your network, who can adequately care for your pets in your absence.

Children

- Please make safe arrangements for all children, particularly minor children. The hospital, nurse or social worker cannot assist with childcare during your admission.
- You may not have young children stay overnight at your bedside during your admission.

Bills and Other Responsibilities

Please contact your financial institutions, utility company, auto insurance company, etc. to schedule/reschedule your financial obligations. A social worker is not able to assist you with this during your admission.

Family at Bedside

Begin to think about the following:
- Who will stay with you in the hospital?
- Will that person sleep at bedside or lodge at a hotel? How do you plan to pay?
- What will they eat and how do they plan to pay for meals?
- Is that person on any medication?
- Can they get their prescription filled before your admission so a medical emergency can be averted?
- Do you require assistance for hotel/lodging?
- Please contact the Patient and Visitor Accommodations Program (PVA) at (800) 544-8684 (toll-free) or (734) 936-0135 (local).
Assistance at Home

Meals
For further assistance, think about who can help with meals after you leave the hospital.

(Name and telephone contact) can assist with preparing meals.

(Name and telephone contact) can assist with delivering meals.

(Name and telephone contact) can assist with groceries.

Company at Home
For further assistance, think about who can stay with you after you leave the hospital.

(Name and telephone contact) can stay with me for _____ days.

I can stay with:

(Name and telephone contact) for _____ days.

If you have concerns or questions about admission and what to expect, please contact the Social Work Department through the Guest Assistance Program at (800) 888-9825 (toll-free) or (734) 764-6893 (local) to connect or for a referral to the right community resource or hospital staff.
Hospital Facilities

**Laundry Room**
- Laundry room is located on unit 6A (UH 6th floor).
- For assistance with laundry, the patient or family can call the 6A clerk at *(734) 936-6256* with patient’s name, Medical Registration Number (MRN) and room number.
- Laundry room is available for use starting at 5 p.m. daily.
- Detergent is included with service, so there is no need to bring your own.
- Patient or family can access the laundry without staff assistance.

**Guest Shower**
Guest showers are located on the right side of the hallway on the 7th floor, by the east elevator.

**Cafeteria**
The cafeteria is located on the 2nd floor. Look for the big aluminum fork (cafeteria entrance).

**Gift Shop**
The gift shop is located on the 2nd floor. From the west elevator, turn right and walk past the big aluminum fork (cafeteria entrance). The gift shop is just past the double doors. From the east elevator, turn right and the gift shop is ahead of you.
Surgery
**Surgery**

**Day Before Surgery**

- The day before surgery you will need to call **(866) 936-8800** (toll-free) between 7:30 - 9:30 a.m. You will need to leave your name, date of birth and a phone number where you can be reached. You will be called back before 4:30 p.m. and given the time you need to check in/arrive, as well as the general time of your surgery.
- **Do not** eat after midnight. You can have sips of water up until 2 hours before your arrival time.

**Day of Surgery**

- On the day of surgery, we suggest you park in parking structure P2 or valet park at University Hospital. Enter the hospital and head to the Surgery Waiting Room and Admitting. It is on the first floor of the hospital by the red column.
- When you check in, you’ll either receive a pager and wait until pre-op is ready for you, or you will be brought back to pre-op.
- Once in pre-op, you will change into a hospital gown, get an IV and then will be asked questions by the pre-operative nurse, operative nurse, doctors and anesthesia personnel. Your name, date of birth, type of surgery, allergies and current medications are common questions.
- Family members will be able to be with you for most of your time in pre-op and will receive a pager for updates during your surgery.

**Surgery**

- When your operating room is ready, the anesthesiologist will give you medicine to make you sleepy. You will move from the pre-op bed to the operating room bed and then wheeled to the operating room.
- The operating room staff will ask your name, date of birth and type of surgery. The anesthesiologist will then give you oxygen to breathe as they give you medications to make you sleep. Once you are asleep, a breathing tube will be inserted by the anesthesiologist to help you breathe.
- You will be positioned for surgery and the areas of surgery will be prepared with a sterile prep to prevent infections. A Foley catheter (flexible tube) to monitor urination will be inserted, as well as additional IVs. A final safety check will be performed before surgery.
• A catheter will be placed in an artery at the wrist, elbow or groin to constantly measure your blood pressure and can be a source for future blood draws. A Dobhoff tube is placed through your nasal cavity into the stomach and is used to administer nutrition. Patches are applied to your chest to monitor your heart. A tube may be placed in your nose or mouth to your lungs. This tube is attached to a machine called a ventilator that is used to help you breathe. This allows for optimal use of sedation and pain medications.

You may be in surgery between 3-12 hours. Before surgery, your doctor can give you a better idea of time. After surgery begins, your family can get updates using your medical record number on displays in the family waiting area and by the pager given to you at check in. In general, updates occur every 2 hours. The pager works throughout the hospital.

**Flaps**

A **flap** is a way to fill a hole which is left when a cancer has been removed. Tissue from one part of your body is removed and placed over the area where the cancer has been removed. A flap can be used to replace large parts of the inside of the mouth, face or neck. There are many different types of flaps and we will cover the most commonly used in our practice. (For more information, see the Types of Flaps section of this guide.)

**Jackson-Pratt Drain**

A Jackson-Pratt Drain is a closed-suction medical device. It is commonly used as a post-operative drain for collecting body fluids from surgical sites. If you need to go home with this drain, a nurse will teach you how to care for it.
**Penrose**

A Penrose is a soft, flexible rubber tube. It is used as a surgical drain to prevent the buildup of fluid in a surgical site. Your doctor will remove this drain when ready.

**Reconstruction Hardware**

When bone is being used to reconstruct an area, screws and plates will be used. They are made of titanium so you will be able to have MRIs and go through airport security and metal detectors without any issues.
Post-Surgery
POST-SURGERY

Recovery

Depending on the type of surgery, you may either go to the post-anesthesia care unit (PACU) or to the surgical intensive care unit (SICU) to recover after surgery. If you go to the PACU, the tube that was placed to breathe for you will be removed and you will start waking up. You will be closely monitored by your healthcare team. Once you are safely awake, you will be transitioned to a floor in the hospital for further management and monitoring.

If you go to the SICU, you may need additional support from the ventilator for 24-48 hours. During this time, you will receive medication to keep you comfortable.

Hospital Stay

The SICU is staffed with a highly skilled team of registered nurses and doctors who specialize in the care of complex medical conditions. During your stay in the SICU, your surgeon will continue to see you and make recommendations, but your immediate post-operative care will be managed by SICU doctors.

You may be kept asleep for 24 hours while the SICU team ensures the safety of the flap. Excessive movement can compromise your flap. You will remain on the ventilator during this time. When you wake up, you will not be able to talk because the breathing tube sits between your vocal cords. If you also have a tracheostomy placed, you will not be able to talk until day 5 following your surgery when we put in a smaller tracheostomy tube. You will have to communicate by writing or other nonverbal communication.

The time spent on the ventilator varies by patient, but we typically like to remove the ventilator in 24-48 hours.

While in the SICU, you will remain connected to lines, tubes and monitoring devices. You may receive a large quantity of IV fluids while in surgery that may leave you swollen. This fluid weight will go away in a week or more. It’s important to do the cough and deep breathing exercises. You will be asked to do these to prevent pneumonia by keeping the small sacs in your lungs open.

As you improve, equipment is removed and you will be encouraged to become more active. You may be able to get out of bed and sit in the chair on the first day following surgery. Activity is very important for increasing your strength, preventing blood clots, and healing.

The entire team will assemble every morning to review your status and make goals for the day.
Step Down

Once you come out of the Intensive Care Unit (ICU), it will be time to prepare yourself to go home. You will start by staying out of bed most of the day to build strength. Sitting in a chair and walking around the unit helps you build strength, breathe better, digest food and circulate blood. You will still have some pain. The goal is to control the pain enough so you feel like you can get up, move, and take part in your own care.

Most people go home with a feeding tube and a tracheostomy (for more information, see the Tracheostomy section of this guide). The tracheostomy is there to protect your airway when there is a lot of swelling in your mouth. The feeding tube allows for food to bypass your mouth to your stomach so you can get the nutrition and medication you need to heal. The nurse will explain everything they are doing as they are doing it, and encourage you to practice your own care. The more you practice the skills, the more comfortable you will be doing the care at home.

You may start with handling the feeding tube, giving your own tube feedings, and administering your medication. You will receive step-by-step instructions on your care at home to refer to after discharge. If you go home with a tracheostomy, the nurse will have you practice how to clean the skin around the tracheostomy, change or clean the inner cannula and how to suction yourself to clear your airway of secretions. You will also be instructed on how to clean and care for any incisions or wounds you may have to care for at home.

Medications

- Take only medications approved by your doctor.
- Try to get all medications in a liquid form. If a medication does not come in a liquid form, your local pharmacist can tell you if it is okay to crush a medication or open a capsule to dilute it. For some medications this doesn’t work and you will need to talk to your doctor about alternatives.

Steps for Taking Medication

1. Wash hands.
2. If medication is in pill form, crush it into fine powder and mix with 30cc of water (if allowed as noted above).
3. If the medication comes as a liquid, you must still mix it with 30cc of water.
4. If the medication comes in a capsule, open the capsule and empty the contents into 30cc of water (if allowed as noted above).
5. Check placement of feeding tube by checking the mark on the tube where it comes out of your nose.
6. Flush the tube with 30cc water.
7. Draw up the medications with syringe.
8. Slowly insert them into tube. Be sure to be sitting upright.
10. Clamp off tube.

**Incision Care**

**If You Have Stitches/Staples**
- Clean twice daily unless instructed differently by your surgery service.
- Clean the incision site with ½ hydrogen peroxide and ½ water using Q-tips or gauze or plain water. Your surgery team will instruct you on the correct wound care for you.
- Loosen and remove any crusts that have formed once softened.
  - Keep area clean and dry.
  - Use ointment twice daily until healed as directed by your surgical team.
  - Avoid exposing your incisions to the sun. Sun tanning can darken incision lines.

**If You Do Not Have Stitches/Staples**
Clean the incision site three times a day unless instructed otherwise. You can cleanse with soap and water, pat dry. Loosen and remove any crusts that have formed once softened.

**If You Have Steri-Strips**
Leave the steri-strips in place. They will begin to tatter and loosen but do not remove them unless approved by your doctor. The edges can be cut as they loosen and curl. Your doctors will advise you as to whether or not you can shower when steri-strips are in place.
Equipment for Home
A discharge planner will arrange for your at-home supplies.

• Catheter – After each use, you will need to rinse out the catheter with water until free of mucous. Use a new catheter with each suctioning episode.

• Portable Suction Machine – We will send a suction machine home with you. It has a rechargeable battery and car adapter. This machine should go with you leave the house. You will receive instructions on how to use and care for the machine before discharge.

Physical Therapist
A physical therapist is a healthcare provider who specialize in the treatment of disease, deformity or weakness using physical methods such as massage, heat treatment and exercise. The physical therapist will teach you exercises to help you keep or regain your strength.

Occupational Therapist
An occupational therapist is a healthcare provider who encourages rehabilitation through daily life activities. They will teach you exercises to use during your hospital stay.

Leaving the Hospital
There are several options for where you can go when you are too well to be in the hospital. A discharge planner will meet with you to discuss your options. Insurance and medical advice are important factors for you to consider.

Home
The nurses will teach you and your friend/family member who will be staying with you, how to take care of you. To prepare to go home, you will start the process by doing all of your own care while you are in the hospital. A home care nurse may be set up to assist you as well, but they will only come to your house a couple of times a week.

Rehabilitation Facility
If you are doing very well surgically and medically, but are still too weak to care for yourself, you may consider going to rehabilitation (rehab) facility. Rehab is designed to help you get your strength back and prepare you to go home.
Skilled Nursing Facility
If you have complex medical needs and need additional assistance taking care of yourself, a nursing home is a good next step. Nurses there will continue to help take care of you, but include you in the care to help get you ready to go home when you are appropriately healed.

First Visit Back to Clinic After Surgery
During your first visit back to the clinic after surgery:
• Stitches, staples or drains that you may have had when you were discharged from the hospital will be removed.
• We will review the results of your pathology with you. The results will help decide if you need to meet with radiation oncology or medical oncology doctors.
• Your medical team will review your long-term plan, such as appointments every 3 months for the first year and how often you may have to get CT scans.

Treatment Options
• **Local therapy** treats cancer in a limited region. It cannot fully treat cancer that is widespread. Local therapies include surgery and radiation therapy.
• **Surgery** is a treatment that removes tumors or entire organs with cancer. This is a common treatment for oral cancers.
• **Radiation therapy** may be the main treatment. Radiation therapy uses high-energy x-rays to treat oral cancer, damaging DNA in cancer cells. Radiation either kills the cancer cells or stops new cancer cells from being made.
• **Systemic therapy** is a cancer treatment for the whole body. These treatments can be in the form of injections or pills.
• **Immunotherapy** is a type of therapy that uses substances to stimulate or suppress the immune system to help the body fight cancer. It works for certain cancer cells. T cells are a type of immune cell that can kill cancer cells.
• A **clinical trial** is a type of research that studies how well a certain treatment works in people. It can give you access to new tests and treatments you otherwise wouldn’t receive. A treatment option may be to join a clinical trial.
Tracheostomy
A tracheostomy is a tube placed in the front of your neck into your airway. It allows air into your lungs when swelling in your mouth has the potential to block off your airway. Most patients who are having major facial surgery will have a tracheostomy and will go home with it in place. When your doctor is certain the swelling in your mouth is decreased enough to allow enough air to get to your lungs, the tracheostomy will be removed. Usually, this is within a few weeks.
Suctioning your Tracheostomy

Follow these steps for suctioning your tracheostomy:
1. Wash hands.
2. Take several deep breaths before, during and after each suction.
3. Prepare supplies (get saline, gauze, suction machine and catheter ready).
4. Turn on suction machine.
5. Take some deep breaths.
6. Squirt 3-5cc saline in tracheostomy.
7. Cough.
8. Insert catheter about 4 inches.
9. Cover vent on the tubing while pulling the catheter out no longer than 10 seconds.
10. Repeat steps 1-9 until airway is clear.

Once you are home, if you are unable to clear airway, remove and clean your inner cannula. You should clear your airway several times a day even if you do not feel congested. **If you do not find relief, call 9-1-1.**

Cleaning your Tracheostomy

Clean your tracheostomy 3 times a day. Follow these steps for cleaning your tracheostomy:
1. Wash hands.
2. Prepare supplies (get saline, gauze, suction machine and catheter ready).
3. Cough/suction to clear any secretions.
4. Using fingers to support tracheostomy, remove inner cannula.
5. If you have a disposable inner cannula, replace it with new one.
6. If you have a non-disposable inner cannula, clean it with a brush and peroxide then rinse with water till clean. Dry the cannula with gauze only. **Do not use tissues.** Lint from tissues can irritate your airway.
7. Replace the inner cannula.
8. Clean around the base of the tracheostomy with a $\frac{1}{2}$ water, $\frac{1}{2}$ peroxide solution. **Do not use well water.**
**Additional Tips**

- Tracheostomy ties should have enough slack so that you can put one finger between the ties and your neck.

- Filters: You may wear a tracheostomy bib to prevent excessive dust, smoke and fumes interfering with your breathing. These can be purchased at medical supply stores. To prevent water from entering your airway when showering, use a shower shield (a cover made specifically for a tracheostomy/stoma), or an infant bib with the plastic side out.

- Don’t smoke, and limit your contact to second-hand smoke. Smoking can delay your healing and add to complications.
Types of Flaps
**TYPES OF FLAPS**

**Anterolateral Thigh Flap (ALT)**

**What does the surgery involve?**
Skin is taken from the front of the thigh and is used to fill a hole which is left when a cancer has been removed. Your surgeon will take a piece of skin and fat from the upper surface of your thigh known as the **donor site**. The skin and fat layer is removed (the **flap**) along with two blood vessels. One of the blood vessels supplies blood to the flap (artery) and other drains blood from it (vein).

Once the flap of skin is removed, it is stitched into the hole created by the removal of the cancer. Blood vessels supplying and draining the flap are then joined to the blood vessels in your neck, keeping the flap alive while it heals. The donor site on your thigh is then closed with stitches. A drain (Jackson Pratt drain or JP drain) will be placed in order to remove any excess fluid or blood from the donor site. Information about JP drains can be found on pg. 2 of the Surgery section of this guide.

![Anterolateral Thigh Flap Diagram](image)
**What will my leg be like afterward?**

There may be a bandage/dressing over the top of the stitches that will be removed by your surgical team. An antibiotic ointment or Vaseline® will be used twice daily to promote healing. The stitches will be removed in about 7-10 days.

**What are potential complications?**

All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

The blood vessels can develop a blood clot. This would mean that the flap isn’t getting any fresh blood, or if the drainage vein clots, the flap becomes congested (dark in color) with old blood. If this occurs, it usually happens the first few days after surgery and you would have to return to the operating room to remove the clot. Clot removal is not always successful and would be considered a flap failure, requiring surgery.

**Deep Circumflex Iliac Artery Flap (DCIA)**

The DCIA flap is one way of filling a hole in the bone in either the upper or lower jaw. It is one of the common ways of replacing bone that has been removed for cancer treatment. The artery supplying blood to the bone is called the deep circumflex iliac artery. This is why the flap is usually known as the DCIA flap.
**What does the surgery involve?**
Your surgeon will take a piece of bone from your pelvis. The pelvis is the large block of bone that lies immediately above the hip joint. Pelvic bone (flap) is removed along with two blood vessels, one which supplies blood to the flap (artery) and one which drains blood from it (vein). Once the necessary piece of bone from the pelvis is removed, it is transferred to the head and neck and secured in position with small plates and screws. The blood vessels supplying and draining the flap are then joined to blood vessels in your neck. These blood vessels keep the flap alive while it heals.

**What happens to the hole in the pelvis?**
The hole in the pelvic bone where the flap is removed is left to heal on its own. It takes months for the pelvis to heal completely, but over time it will be as strong as it was before surgery.

**What can I expect after the operation?**
The area of your pelvis where the bone has been removed is likely to be sore. Pain medication will be prescribed. A JP drain may be placed to help prevent fluid from collecting under the skin. Your healthcare team will remove it when it’s time.

**Will my walking be affected?**
Soon after surgery will you will start sitting in a chair. Slowly, you will start walking longer distances and will be walking normally in a short period of time.

All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

**Fibula Flap**

**What does surgery involve?**
Your surgeon will remove one of the bones from the lower part of your leg. The fibula bone runs on the outside of the leg from the knee joint to the ankle joint. It is a small thin bone that can be removed entirely without affecting your ability to bear weight. The fibula bone is removed (flap) along with two blood vessels, one of which supplies blood to the flap (artery) and one which drains blood from the flap (vein). The bone is transferred to the head and neck and secured into position with small plates and screws. The blood vessels supplying and draining the flap are then joined to blood vessels in your neck. These blood vessels keep the flap alive.
What will my leg be like afterwards?
Occasionally, a piece of skin will be taken in addition to the fibula bone. If the piece of skin that is removed is large, it will need to be replaced with a skin graft. If a skin graft is used, the dressing over the top of it will be removed about 5 days after surgery. The dressing will need to be changed twice a day for about a month.

What can I expect after the operation?
The area of your leg where the bone has been removed will likely be sore. Regular pain medication will be arranged for you during your hospital stay and at time of discharge.

What are possible problems?
All surgeries have risk such as bleeding or infection. The risks are low but you should be aware of what they are.

In a small number of cases, one of the blood vessels supplying or draining the flap can develop a blood clot. This means that the flap isn’t getting fresh blood or if the drainage vein clots, then the flap becomes congested (turning dark in color) with old blood. This complication usually happens within the first few days following surgery and may mean you have to return to the operating room to have the clot removed. Removing the clot is not always successful. If this happens, the flap is considered a failed flap and an alternative surgery will be considered.
**Will my ability to walk be affected?**
In the long-term, removing the fibula bone will not normally produce problems walking. You will work with physical therapy (PT) while you are in the hospital and you will receive a special boot to wear for a month when standing or walking.

**Latissimus Dorsi Flap (Lat Dorsi)**

**What does the surgery involve?**
A large muscle from your upper back is lifted and moved into place. Due to the size of the muscle, the area that is used may seem bulky at first, but will shrink down.

**What happens to the area of the back where the muscle is removed?**
It will be closed up with either stitches or staples. A drain will help prevent accumulation of blood and fluid under the skin.
What are potential complications?
All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

When appropriate, the drain in your back will be removed. If the area continues to drain and collect under the skin, you may get what is called a seroma which may require a procedure to allow further drainage.

Pectoralis Major Flap (Pec Flap)

What is a Pectoralis Major Rotational Flap?
The pectoralis major is also known as a pec major which is a thick fan-shaped muscle at the upper front of the chest wall. It makes up the bulk of the chest muscle in males and is under the breast in females. The pectoralis major pedicled flap maintains its own blood supply and is one of the most common ways of replacing tissue in the head. It can be used to replace large areas, has an excellent blood supply and has good results.

What does surgery involve?
Your surgeon will tunnel a piece of skin and muscle from the pectoralis major, along with its attached blood vessels, and transfer it to the required area of the head and neck. The chest where your pectoralis major is taken from is known as a donor site and will be primarily closed with stitches or skin glue. In order to remove excess fluid or blood from the donor site, a JP drain will be placed and monitored. This will be removed when appropriate.
What will my chest be like afterwards?
Your chest will have a bandage for protection that will be taken off on the second day following surgery. The staples will be removed 7-14 days after surgery. Right after surgery you may experience some pain when moving your arm on the donor side. This may require pain medication. You will have a scar on your chest that will fade with time.

What are the potential complications?
All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

One of the blood vessels that supplies blood or drains the flap can develop a blood clot. This means that the flap doesn’t get fresh blood or cannot drain old blood. If this happens, it’s usually within the first few days following surgery and would require you to return to the operating room to remove the clot. Removing clots is not always successful and on occasion a new reconstruction graft site may be considered.

**Platysma Flap**

A broad sheet of muscle on either side of the neck that can be lifted and rotated into the hole. It can be used inside the mouth or on the outside of the face. It’s a nice choice for the face because the color is often a good match.

What will my neck look like after surgery?
Often on the side of the neck that the Platysma muscle was removed, there will be a bulky area that will go down over time, but will most likely not completely go away.

What can I expect after my operation?
The area of your neck where the flap was removed will be sore. Regular pain medication will be arranged for you during your hospital stay and at time of discharge. You will also work with physical and occupational therapists to learn exercises to keep you strong.

All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.
### Radial Forearm Flap

**What does the surgery involve?**

Tissue is taken from the inside surface of your forearm near the wrist along with two blood vessels, one of which supplies blood to the flap (artery) and one of which drains blood from it (vein). The vessel which supplies blood to the flap is the artery. This has a pulse you can feel at the base of the thumb. The blood vessels supplying and draining the flap are joined to blood vessels in your neck. These blood vessels keep the flap alive while it heals into its new place.

**What will my arm be like after surgery?**

Your arm will have a dressing placed on it and will be in a special sling or splint. The dressing will be replaced about 5 days after surgery. The dressing will need to be changed twice a day for a month. There will be stitches near your elbow that will be removed 10-14 days after surgery. The special splint will need to be worn for 2-4 weeks. You will need to take it off to shower and put it back on when done.
What are possible complications?

All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

The nerve that supplies feeling to the skin over the base and side of the thumb is sometimes bruised when the flap is removed. This can mean that the area ends up with a tingly sensation or numbness that may last for several months following surgery. Occasionally, it can be permanent. You may also notice that your hand does not feel as strong as it was before surgery and sometimes it will feel more cold in the winter months than it used to.

Scapula Flap

What is a Scapula Free Flap?

A scapula free flap is one way of filling a bony hole that is in either the upper or lower jaw. Your surgeon will remove a piece of bone from your shoulder blade (scapula bone) and the skin and transfer it to the head and neck, secured into position with small titanium plates and screws. The blood vessels supplying and draining the flap are then joined to blood vessels in your neck. These blood vessels will keep the flap alive while it heals.
What happens to the area in the shoulder blade where the bone was removed?
The hole in the scapula bone will heal on its own. It could take several months to heal completely, but over time you should be as strong as you were before surgery.

What can I expect after surgery?
The area of your shoulder where the bone was removed will likely be sore. The doctor will prescribe pain medication. There may also be a JP drain to collect any blood. This drain will be removed when appropriate.

What are possible complications?
All surgeries have risk, such as bleeding or infection. The risks are low but you should be aware of what they are.

You might have limited shoulder movement, but this is most often due to swelling in the area. Gentle exercise will help reduce stiffness. Physical therapy might be prescribed to you while you are in the hospital. A blood clot can also form in one of the blood vessels supplying or draining the flap if the flap isn’t getting fresh blood or it cannot drain the old blood. This usually happens in the first few days after surgery.
Neck Dissection
NECK DISSECTION

Neck Dissection

A neck dissection is a surgery to remove lymph nodes and other tissues in the neck. Lymph nodes are glands that are present throughout your body. You may have felt a swollen lymph node in your neck when you had a simple cold or infection. Their job is to filter liquid which naturally leaks out of the blood vessels. This liquid (lymph) travels to the nodes which contain a lot of white blood cells designed to trap and fight germs which can cause an infection. As well as trapping germs, the lymph nodes can also trap cancer cells.

Do I have cancer in my lymph nodes?
It is often not possible to have the answer to this question until after your surgery when the glands that have been removed have been carefully looked at under a microscope. Your healthcare provider will have already felt your neck to see if there are any lumps and you will have a special scan (CT, MRI or PET) to look more closely at the glands. Glands can feel big if there is an infection in the area, so if you can feel a lump in your neck it does not necessarily mean your cancer has spread. If there are only small amounts of cancer cells in the glands, the neck can feel normal and look normal on the scan. This is often why we do not know if the cancer has spread until the glands have been removed and looked at under a microscope.

Will I still be able to fight infections once my lymph nodes have been removed?
Yes. There are thousands of lymph nodes throughout your body which will still be able to fight infection.

When will my neck dissection be carried out?
At the time of your surgery to remove the cancer, your surgeon will make an incision across your neck to gain access to lymph nodes in the neck. The cut usually follows a natural fold that is already in your neck skin. Once the lymph nodes are removed, stitches are placed that will be removed 10-14 days following your surgery. One or more drains are usually placed into the neck skin for a week or two to collect any blood and fluid. A healthcare provider will show you how to take care of the drains.

What are possible complications?
Most of the problems associated with having a neck dissection are the result of damage to one of two nerves:
• **Accessory nerve** – This nerve runs from the top to the bottom of the neck. It helps you to move your shoulder. The nerve has lots of lymph nodes lying very close to it, so it is often handled and sometimes bruised during neck dissection. If the nerve is bruised, it can stop working for several months. If this happens, you may experience pain and some difficulty in moving your shoulder which makes getting dressed more difficult. Rarely, the lymph nodes cannot be completely removed without cutting this nerve which would result in permanent shoulder problems. A physical therapist will work with you during your hospital stay and teach you shoulder strengthening exercises.

• **Facial nerve** – The branch of the facial nerve which makes your lower lip move can be bruised when lymph nodes close to it are removed. If this happens, the lower lip won’t move properly and you may end up with weakness which will give you a crooked smile. Your smile may improve over time, but it can take several months.

**Will I have scars?**
All cuts made through the skin can leave a scar, but the majority will fade with time.

**Grafts**

**Bone Graft**
A bone graft involves removing bone from anywhere in your body, but often comes from your rib or hip. A bone graft replaces an area in your face or jaw where bone has been removed, has missing bone or an area that has not healed properly. Most bone grafts are expected to be reabsorbed and replaced as natural bone heals over a few months.

**Graft Skin**
Graft skin is a portion of healthy skin that is taken from one of several places. Commonly, a thick piece of skin is shaved from the thigh and a clear dressing is placed over the top. It may look bloody under the clear dressing which is normal. This dressing will fall off in about seven days or a healthcare provider may remove it sooner. Once the clear dressing is removed, it is important to place Vaseline® on the area until it heals.

The other common skin donor site is the inside of your arm just above your elbow. This area may have stitches that may need to be removed in 10-14 days.
Follow Up
**FOLLOW-UP**

**Anaplastology – Facial Prosthetics Treatment**

During or after your cancer treatment, your doctor may recommend that you speak with an anaplastologist. This is a clinician who specializes in making custom facial prosthetics. An evaluation appointment will help determine the options available to you, and will provide the information you need to make an educated decision about your treatment path.

**What is a Facial Prosthesis?**

A *prosthesis* is an artificial body part that replaces a missing body feature. A facial prosthesis is most commonly an eye, ear or nose. Facial prostheses are made of *silicone*, which is a medical-grade rubber that mimics the appearance of skin in texture and color. The prosthesis is removable, allowing your doctors to monitor the health of your skin and provides access for you to keep your skin and the prosthesis clean.

**How Does a Prosthesis Attach to My Body?**

There are 3 ways a prosthesis can be held in place, and sometimes it may be attached using a combination of these methods.

- **Adhesive (known as Adhesive-retained)**
  Adhesive is applied to the back of the prosthesis and is attached to your body, much like a bandage. It can be worn all day and removed at night.

- **Magnets or Clips (known as Implant-retained)**
  This method requires the surgical placement of 1-3 small screw-sized implants into your bone in the region of the missing body part. The final prosthesis is then attached by magnets or clips to your body. It is not permanently attached and can be removed for cleaning and daily hygiene.

- **Your Anatomy (known as Anatomically-retained)**
  Sometimes a prosthesis can attach to your body simply by fitting into a cavity and remaining held in place until you’re ready to remove it.
Prosthetic Treatment Timelines

Adhesive-retained Prosthesis Timeline
Should you choose an adhesive-retained prosthesis, approximately 4-5 separate appointments will be needed over the course of about 4 months. Authorization from your insurance company may be needed before prosthetic treatment.

Treatment appointments are as follows:

1. **Impression**
   At this appointment, a silicone material will be spread over the region where we expect the prosthesis to be worn. Photographs and measurements will be taken to aid the anaplastologist in making a wax sculpture of the prosthesis.

2. **Initial sculpting, fitting and coloring**
   At this appointment, you will try on the wax sculpture and be evaluated for fit and appearance. Changes will be made to make the prosthesis fit comfortably and look natural. Photographs will be taken to help finalize the sculpture.

3. **Final sculpting, fitting and coloring**
   At this appointment, the wax sculpture and coloring will be finalized. You and your medical team will all agree on the final shape and fit. Photographs will be taken.
   The number of sculpting, fitting and coloring appointments may vary, based on your circumstances.

4. **Delivery of your prosthesis**
   At this appointment, your silicone prosthesis will be colored and fit to you. You will be taught how to place it, clean and care for it and your skin, and you will get to wear your prosthesis home.

5. **Follow-up**
   At this appointment, your anaplastologist will evaluate how you are adjusting and adapting to wearing your prosthesis. If you have any concerns or questions, they can be addressed at this appointment.
Implant-retained Prosthesis Timeline

Should you choose an implant-retained prosthesis, a longer treatment time can be expected. One to 3 small screws will be placed into your bone during a surgical procedure performed by your surgeon in the operating room. There is an approximate 3-month waiting period while the screws become secure within the bone before the second procedure can be performed to connect the screws to the outside of your body. Once you have healed from this second procedure, you can begin prosthetic treatment as outlined for an adhesive-retained prosthesis.

Some additional appointments may be necessary. First, we need to verify with your surgeon that there is good quality bone in the region for implants to be placed. A current CT scan may be required. It may be necessary to let you continue to heal for approximately 1 year before implants can be placed, especially if you have had radiation therapy as part of your treatment.

Once it has been decided that implants will be placed, you may need to see your anaplastologist for a treatment planning appointment to choose the ideal locations for your implants to be placed.

The implant placement procedure for an implant-retained prosthesis requires 2 surgical procedures, performed by your surgeon, approximately 3 months apart.

1. **Stage 1 Surgery**
   In this procedure, your surgeon will make an incision in the region where the implants will be placed. One to 3 small screws will be implanted into your bone. The incision will then be closed and you will go home later that day.

2. **Stage 2 Surgery**
   In this procedure, your surgeon will use a biopsy punch to open the skin above each of the implants that were placed during the Stage 1 Surgery. A component called an abutment will be connected to the implant; this allows a magnet or bar to be connected to the implants to hold your prosthesis. You will go home later that day.

**Required Hygiene and Maintenance**

It is recommended you wear your prosthesis during the day and remove it at night. Removing your prosthesis allows your skin underneath to breathe, and it gives you an opportunity to clean the prosthesis and your skin. Maintaining healthy skin and a clean prosthesis are very important to the success of your treatment.
Common Questions About Prosthetic Treatment

Please note that you may call your anaplastologist at any time with questions or concerns.

How long will my prosthesis last?
Prostheses usually last 1-2 years, but this timeline varies greatly from person to person. It is highly dependent upon how often you wear your prosthesis, the type of prosthesis, how it is attached to you, and how well you care for your prosthesis. Prostheses wear out from use just as your shoes or clothing do. Small coloring or fit adjustments can be made at any time, but prostheses usually need to be replaced every 1-2 years. Your anaplastologist will keep the mold from which your original prosthesis was made. If the fit of your prosthesis is still good, then the mold can be reused to make another prosthesis. If the fit of your prosthesis has changed, a new impression may need to be taken.

Will my insurance cover treatment?
One of our patient care coordinators will contact your insurance company to obtain any authorizations needed before we begin treatment. Sometimes an insurance company will not authorize treatment before the prosthesis is delivered. Should this be the case, you will be asked to sign a document stating your ability to pay for the prosthesis if it is not covered by your insurance. Insurance companies typically provide coverage for a new prosthesis to be made if needed every 1-2 years.

Can I swim while wearing my prosthesis?
Yes. You should be able to swim while wearing your prosthesis. If you have an adhesive-retained prosthesis, we can help you choose an adhesive that will not come off in the water.

What happens when my skin changes color with the seasons?
Your prosthesis can be recolored during a clinic or follow-up appointment to see your anaplastologist. Unfortunately, your prosthesis cannot be lightened. If the color is too dark, a new prosthesis will need to be made.

Head and Neck Cancer Survivorship Clinic

Congratulations, you are now on the road to recovery! Follow-up care starts when there are no signs of cancer and is important for your long-term health. Initially, you will meet with your doctor often after treatment ends. The guidelines set forth by the National Comprehensive Cancer Network recommend the following surveillance visit schedule:
• For the first 2 years post-surgery: A visit every 3 months with a nasopharyngeal scope every other visit.
• For years 3-5: A visit every 6 months with a scope every visit.
• After year 5: A yearly visit with a scope.

In addition to the visits, you will get a CT scan post-surgery to create a baseline image that future scans will be compared to. We recommend you have your scans at the same facility to provide better comparison. The scans can be coordinated with your survivor return visits. You will get CT neck and CT chest scans yearly.

**What About Reconstruction Options?**

Once your doctor decides you are cancer free and have healed from your surgery, you may have options available to you for reconstruction. Services vary from patient to patient and can be discussed with your surgeon or advanced practice provider.

**Palliative Care**

This is a special kind of patient- and family-centered healthcare that focuses on the effective management of pain and other distressing symptoms while incorporating psychosocial and spiritual care, according to the patient and family needs, values, beliefs and cultures. The goal of palliative care is to anticipate, prevent and reduce suffering, and to support the best quality of life.

**Hospice**

This is a special kind of care that focuses on people who are nearing the end of life. This team of providers maximize comfort for the person who is terminally ill by reducing pain and addressing physical, psychological, social and spiritual needs. The goal is quality of life rather than length of life. Hospice might be a benefit to a terminally ill patient who has 6 months or less to live.
Special Care
What is a Speech-Language Pathologist?

A speech language pathologist is a clinician who evaluates and provides therapy to improve speaking and swallowing function. The speech pathologist works with the team to evaluate and prepare the patient before surgery. After surgery, the speech pathologist works to rehabilitate speech and swallowing function to allow you to return to the highest level of functioning possible.

Speaking and Swallowing Function

Cancers that develop in the oral cavity (tongue, jaw, hard or soft palate, floor of mouth or cheek musculature) are often initially treated with surgery. Following this surgery, you may experience changes in your speaking, eating or swallowing ability. The location and size of the cancer influences the extent to which you may have difficulty speaking or swallowing. Should you require additional treatment such as radiation, there might be additional changes that occur as you progress through this treatment.

Normal Speech Function

Speaking and swallowing are complex functions that require multiple muscles and nerves. Speech is formed as airflow travels out of our lungs, up the windpipe (trachea), through the vocal folds that are set into vibration and produce sound. This sound then travels through the throat and into the mouth where the tongue, palate and lips move to produce specific speech sounds. The majority of speech sounds in English are produced with the soft palate elevated. This closes the passage to the nose and allows the air to travel into the mouth. Movements of the tongue against the hard palate and lips are responsible for forming specific speech sounds.

Normal Swallowing Function

The swallowing of food or liquid requires multiple muscles and nerves to operate in a complex manner to move food or liquid from the mouth through the throat and into the food tube (esophagus). This process requires closing the airway to prevent the food and liquid from entering the windpipe (aspiration). When food or liquid is placed in the mouth, the lips close tightly to prevent the food from falling out of the mouth. The muscles of the tongue and jaw along with the teeth break down the food and prepare it to enter the throat. The soft palate elevates to prevent food and liquid from entering the nasal passage. The back of the tongue along with the muscles of the throat then push...
the food through the throat. At the same time, the voice box moves upward and forward allowing the flap (epiglottis) to flip over and cover the voice box so that food or liquid cannot enter the airway. The muscle at the top of the esophagus then opens up and lets the food pass downward toward the stomach.

Evaluation

**Pre-operative Evaluation**
Before surgery, you may meet the speech pathologist. During this visit, the clinician will evaluate your current speaking and swallowing function. They will explain the nature of the surgery as it affects communication and swallowing. We will also discuss your individual speaking or vocal demands so that we can develop a specific treatment plan to help meet your goals.

**Post-operative Evaluation**
After surgery, the speech-language pathologist will evaluate your swallowing and speaking ability. This evaluation also helps to develop the necessary treatment approach. There are two primary goals of a swallowing evaluation:

- Determine your ability to swallow food and liquid efficiently enough so that you can be adequately nourished and hydrated.
- Determine your ability to swallow food and liquid so that it moves through the throat without entering the windpipe (aspiration). If significant volumes of food or liquid are aspirated into the windpipe or lungs, there is an increased risk of developing pneumonia.

**Feeding Tubes**
Sometimes it is necessary for a temporary feeding tube to be placed at the time of surgery. Typically, this is a nasogastric tube (NG tube) that passes through the nose, down the throat and into the esophagus and stomach. If you have a temporary feeding tube, the swallowing evaluation will help determine when it is appropriate to remove the feeding tube. In some cases, this can be removed at the first post-operative visit. In more complicated surgeries, patients may require continued use of a feeding tube. Some individuals may take some food or liquid by mouth, but require continued supplemental nutrition through the tube to maintain the necessary hydration and nutrition to help recovery.
Swallowing Evaluations

The following are the types of swallowing evaluations that you may undergo:

Clinical Swallowing Examination
The clinical swallowing exam is completed by the speech pathologist in a clinical setting. During this exam, you may be provided various liquids or foods to swallow and the speech pathologist will evaluate your ability to efficiently chew or manipulate food and liquid. The clinician may feel the movements of your jaw or neck during swallowing and observe for signs of coughing or choking that may indicate more swallowing difficulty. The strength and movements of the lips, tongue, jaw and voice box are also evaluated. The speech pathologist may try various strategies during this exam that may make it easier to swallow.

Videofluroscopic Examination of Swallowing (VFSS)
The VFSS is an examination that is completed in the radiology department using fluoroscopy. Fluoroscopy is an x-ray procedure that makes it possible to see internal organs in motion. Liquid barium, as well as barium mixed with other foods such as pudding or a cookie, are given to the patient. Video images are obtained while the patient is swallowing these different food consistencies. This helps the radiologist evaluate the function of the oral cavity and throat, and look at airway protection when the person is swallowing. We can determine whether food or liquid is entering the airway (aspiration) or moving properly into the food tube (esophagus) during a VFSS. Strategies or postures that may improve swallowing are often introduced during this exam to test their effectiveness.

Fiberoptic Endoscopic Examination of Swallowing (FEES)
An FEES exam allows the clinician to see inside a patient’s throat when swallowing food and liquid. This exam involves placing a small endoscope through the nose and positioning it above the voice box. The patient is given small amounts of water or food that are colored with food coloring so that the food is more visible as it passes through the throat. Strategies or postures that may improve swallowing are often introduced during this exam to determine their effectiveness. This exam can be done in clinic and does not require a radiology evaluation.
What to Expect by Location of the Cancer

Tongue Cancers
The tongue is an important part of speaking and swallowing. Cancers may develop in various locations throughout the tongue. Removing a portion of the tongue can impact the clarity of your speech. The size of the tissue requiring surgical removal and the location of that lesion (cancerous tissue) have the greatest impact on speaking. The larger the lesion the greater change in speech and swallowing function can be expected.

Tongue Tip
The tip of the tongue is important in forming precise speech sounds. For example, when we speak, the tongue tip touches the roof of the mouth to form sounds such as “s” or “t.” When removing a lesion involves removing the tip of the tongue, there may be greater difficulty forming speech sounds compared to removing the back part of the tongue where fewer speech sounds are formed.

In smaller tissue removals, individuals will often be able to carry on a conversation but may find that certain speech sounds such as the “s” are distorted. If the lesion is large and requires a larger portion of the tongue removed, there may be greater difficulty with clarity.

The tongue tip is also important in eating and swallowing. The tongue tip moves throughout the front and sides of the mouth to clear any saliva or food debris that accumulates in the area between the teeth and the lips or cheeks. When the tongue cannot clear food or saliva, food may accumulate and you may have to swish fluid in your mouth to rinse it or use your finger to sweep the sides of your mouth.

Base or Back of Tongue
The back of the tongue (tongue base) is very involved in chewing and swallowing. The tongue mashes food against the roof of the mouth to break it down and prepare it to be swallowed. The base of the tongue extends into the throat and drives the food through the throat. The back of the tongue is also important in controlling the amount and speed of which food or liquid enters the throat. If we swallow too much or too fast, we can easily choke. When surgery involves the back of the tongue, food or liquid may collect at the back of the throat. There may also be a loss of sensation or a feeling of numbness on a part of the tongue. This may make it difficult to feel the food or liquid in a portion of your mouth and, as a result, eating will take more time or may need to be done more carefully. You may have a tendency to bite the tongue at that area when chewing.
**Tongue Surgery**

When the surgeon plans your surgery, they are very aware of the impact on speaking and swallowing. The surgeon attempts to maintain as much mobility and bulk of your natural tongue so that the impact on speaking and swallowing is minimized. In small lesions, the tissue can be removed and reconstruction is not necessary. However, if the lesion is large, the tongue will need to be reconstructed so that the tissue can contact the roof of the mouth to form speech and to chew food. In larger resections, if the tongue is not reconstructed, there could be a space in the mouth where food and liquid collect making it difficult to swallow. Also, if a larger wound isn’t covered with some type of tissue the tongue may stick to the floor of the mouth, which would limit the movement of the tongue for speaking.

**Cancers of the Lower Jaw/Mandible**

The mandible (lower jaw) provides the bony support for the teeth and structures of the mouth. When a smaller portion of the bone (marginal mandibulectomy) is removed, there is little impact on speech. There may be some changes in chewing ability especially if teeth are removed at the time of the surgery. Sometimes, the nerves that provide sensation or movement to the lower lip can be affected. In a larger lesion when a segment of the jawbone is removed (segmental mandibulectomy) reconstruction will be needed. In these cases, there is greater impact on chewing and eating. The surgeon will limit your diet to eating only soft or mushy foods for several weeks after surgery. The base of the tongue and the voice box are suspended from parts of the jawbone, and in some cases, there may be a greater chance that swallowing may be affected. Because the jaw supports the other structures of the mouth, you may notice some changes in speaking. Jaw surgeries can lead to a great deal of temporary swelling, which can affect eating and speaking.

**Cancers of the Hard Palate/Maxilla**

The maxilla is the bone that divides the nasal passage from the mouth and forms the roof of the mouth. This bone is also called the hard palate. When we chew, the tongue pushes up against the hard palate to break down the food. When we speak, the tongue contacts the hard palate to articulate speech sounds.

When part or all of the hard palate is removed something has to be put in its place to divide the nose from the mouth. If this were left open, food or liquid would flow freely from the mouth into the nose. Also airflow during speech would move into the nasal cavity, creating a more nasal tone in your speech.
Closing this wound is done either with a flap of bone or soft tissue that the surgeon uses to permanently reconstruct the hard palate. At other times, the hard palate is not reconstructed; rather, a prosthesis called an obturator is used to close the defect. An **obturator** is designed to cover the opening and can be removed by the patient. When the wound is closed with either a flap of tissue or with an obturator, speech production can be quite good. Some individuals will have near normal sounding speech. Others will notice a more nasal tone.

A dentist or prosthodontist makes an obturator. The speech language pathologist may work with the dentist to assist in making the obturator so that speech and resonance are optimized. When tissue is removed, the edges of the wound will heal over time, which means that the obturator will require modifications as the shape of the opening changes.

**Cancers of the Mouth Floor**

The floor of the mouth serves as the support and attachment to the tongue. When surgery involves removing the floor of the mouth, there could be some changes in the movement of the tongue. This is particularly true if the lesion is near where the tongue attaches to the floor of the mouth. If tongue movement is restricted, you may see some reduced clarity of speech or reduced ability to chew food. Temporary swelling is common in these surgeries and can make speaking and eating more difficult at first.

**Cancers of the Soft Palate**

The soft palate is made up of several muscles that function to close off the nasal passage when speaking or swallowing. When surgery involves removing a portion of the soft palate, there is often a change in speaking ability. This may result in a more nasal tone to your speech. Leakage of fluids or food into the nasal passage when eating and drinking can also occur. The extent to which these changes occur is directly related to the amount of tissue that has to be removed. The soft palate may be reconstructed at the time of surgery. At other times, a removable prosthesis is used to block the passage to the nose.

**Therapy**

Many people will require speech or swallowing therapy after surgery as well as during or after radiation. Therapy should be with a clinician with experience treating head and neck cancer. Therapy includes exercises to improve strength and range of motion of the lips, tongue, jaw and throat. Therapy may also train the patient in new techniques and strategies to make swallowing more efficient and reduce the risk of aspiration (food or
fluid accidentally entering the windpipe). Therapy may work toward improving speech production and articulation. The frequency of therapy varies from one individual to another. Patients are often seen for therapy once a week.

**Prosthetic Rehabilitation**

Some people will benefit from an oral prosthesis that makes speaking or eating easier. The speech pathologist works with the dentist or prosthodontist to fabricate a removable prosthesis that clips to the teeth and creates a new, lower contour of the roof of the mouth so that the tongue can come in contact with it and improve the clarity of speech.

**Radiation**

Some treatments require the patient undergo radiation therapy. Radiation can have temporary, as well as longer term, side effects on swallowing. Temporary side effects include mouth sores, which can make eating or speaking temporarily uncomfortable. Longer term, the muscles of the throat and mouth can become stiff or tighten, leading to difficulty chewing and swallowing. Exercises that begin before and continue throughout and after radiation are recommended to maintain the most effective swallowing ability. If you are provided exercises for swallowing as you go through radiation, it is important that you practice these stretches and exercises. Changes in taste and saliva can also occur and impact speaking and swallowing.

**Timing of Evaluations and Therapy**

**Pre-operative**

An evaluation of speaking and swallowing is commonly completed before surgery. At this time, the speech pathologist will evaluate your speaking and swallowing ability, as well as develop an understanding of your personal speaking demands. Sometimes, individuals may have a history of swallowing or speaking problems before surgery and this is important information for your treatment team to understand so that therapy can be tailored appropriately.

**In-Hospital**

If needed, the speech pathologist may complete an evaluation during your hospital stay. Many times this is not possible, as the surgical site needs to heal before therapy can be started.
**Post-operative Outpatient**

Typically, you will be evaluated by the speech pathologist at your first post-operative visit if your surgical site is adequately healed. The surgeon will assess your healing at that visit, and when your tissue is appropriately healed, we can begin evaluations of swallowing and speech. The plan for therapy will be discussed at that time. The timing and amount of therapy needed varies. Therapy once a week for several weeks may be recommended.

**Dentistry**

**Dental Clearance Evaluation**

This is an opportunity for you and your dentist to discuss ways to treat a disease before head and neck cancer treatment begins. Meeting with your dentist before surgery can help prevent complications during treatment and educate you to the signs and symptoms to look for. During this visit, you will discuss your oral and dental care for before surgery (clearance evaluation), during your hospital stay and after discharge.

The goal for you and your dentist during your first meeting is to try and make sure you have the best dental wellness you can. Your dentist will help you reach your best dental potential in an effort to keep good function and comfort in your mouth and try to avoid changes that can affect your social or professional life. You should discuss what is important to you and set goals with your dental providers. Examples of goals may include access to routine dental care close to home.

Topics that may be covered during your visit with your dentist may include:

- **Denture fit** – Your dentures may fit comfortably before surgery, but may not fit after your treatments. Your daily oral care practices are critically important. Brushing routinely with a prescription-strength fluoride may be prescribed, while daily flossing and brushing of your tongue are also very important practices.

- **Oral complications** – The oral complications of head and neck radiation therapy (RT) result from radiation injury to the glands in your mouth that produce saliva, the lining of your mouth, and taste buds. Some complications your dentist may discuss with you are:
  - Inflammation (painful swelling) or sores in the lining of your mouth and gums (mucositis)
  - Cavities
  - Taste loss
  - Infections in your mouth
  - Destruction to the structures around your teeth
  - Decreased ability to open your mouth (trismus)

Some of these complications are short term and some can become permanent.
**Trismus** is a decreased ability to open your mouth and can occur when the jaw muscles are exposed to radiation. Trismus makes eating difficult and can affect your ability to properly clean your teeth and gums. If these muscles are in the field of radiation, you will be shown exercises/stretches to do. Exercises and stretches may be prescribed by your various team members. There are also several oral stretching devices on the market that may be available to you. Your various team members will discuss this with you as needed.

**Mucositis** are mouth sores that may occur during and right after radiation therapy. The soft tissues in your mouth will normally produce new cells on a regular basis. Radiation therapy decreases how quickly the body produces new cells during and for a period of 1-2 months after treatment. Combined with the dryness, your cheeks can become quite uncomfortable. We recommend that you rinse with a salt and baking soda rinse, as this buffers the acids which tend to burn the tissues. Use $\frac{1}{8}$ tsp. salt and $\frac{1}{8}$ tsp. baking soda in a cup of water and rinse. Do this as often as you wish. If you find the tissues are still uncomfortable after this, please let us know and we can discuss other solutions.

**Dysgeusia** is a change in your taste to food or liquids.

**Osteoradionecrosis (ORN)** is non-healing, exposed bone in a previously radiated area of the body. Radiation therapy can affect your jawbone’s ability to heal. There are blood vessels in your bone which supply nutrients to bone cells that are constantly repairing and changing your bone. Radiation can damage these blood vessels, making it hard for bone to heal if there is any surgery done on the bone after radiation. For this reason, treatment such as dental extractions in the area of radiation is usually avoided. If you need to have any of the following: tooth extractions, gum surgery or implant placement, contact us so that we may determine if the needed surgery is in the area of radiation.

**Dental prosthetics** are replacement structures on the inside of your mouth.

**Maxillary Obturator Prosthesis** are for people who have tumors removed from the top of their mouth.

Removing a tumor from the top of your mouth will create a hole or a defect that can go from inside the front part of the mouth to the very back. You cannot see it when looking in your mouth. These open spaces are then connected. Some people can have difficulty with or a change in speech and swallowing as the food is forced into the nose and speech sounds escape into the nasal cavity. Also, the tongue cannot work with the top of the mouth to properly do its job. Speech becomes difficult to understand. These people require a special maxillofacial prosthesis called a maxillary obturator prosthesis, which is much like a denture. It will restore the opening of the top of the mouth and separate the cavities. This restores the person’s speech and swallowing. It requires multiple revisions and adjustments as the person heals from the surgical treatment.
Prosthodontic Treatment

- Patient counseling and instruction
- Physical therapy (oral – physical)
- Dietary counseling
- Hygiene maintenance and instruction
- Fabrication of prosthodontic appliances

Fabrication of Obturators

Fabrication (creating) obturators is usually accomplished in three phases:

- Immediate – A prosthesis may be placed at the time of surgery.
- Transitional – This phase is started 10-14 days after surgery when surgical dressings or immediate prosthesis are removed. The transitional prosthesis is placed and modified until healing is complete. This phase may extend 2-24 months.
- Definitive – this phase begins when healing is complete and involves fabricating the prosthesis intended for long-term use. Definitive treatment may involve fixed prosthesis (crowns) or removable prosthesis.

Any phase of treatment may be altered depending on:

- The nature of the disease and its staging
- Radiation
- Chemotherapy
- Surgical complications
- Morbidity (sickness)

Surgical splints may be used temporarily and usually at the time of surgery to guide soft and hard tissue healing. Options will be discussed with you during your visit with your dentist.

Management of Treatment Complications

- Radiation guards are silicone guards that protect the soft tissue inside your mouth where the radiation is being directed. It is imperative that these guards are fabricated by your dentist before the radiation therapy simulation planning appointment.
• **Cryotherapy** involves sucking on ice chips or cubes (but not chewing them) to help comfort the inflammation (painful swelling) associated with head and neck cancer therapy. Teeth with exposed roots may be more sensitive to cold, so discuss this with your dentist in advance.

• **“Magic Mouthwash”** is a commonly used mixture made by your pharmacist. This mouthwash can help with pain relief, treatment of dryness and inflammation (painful swelling), and treatment of fungal infections. There are several combinations of ingredients and your provider will prescribe the correct one for you.

• **Xerostomia** is a decreased production of saliva or spit in your mouth which can be a side effect of radiation therapy to the area of the salivary glands.

**Dry-mouth Products**

The following are some products for patients with xerostomia (dry mouth). Some people have found these helpful. You may need to order direct from the company/website.

**Over-the-counter Products**

The following products are available over-the-counter and do not need a prescription.

• Salese lozenges - [www.nuvorainc.com/salese.php](http://www.nuvorainc.com/salese.php)
• Biotene gel, gum - [www.biotene.com/](http://www.biotene.com/)
• Entertainer’s Secret® (KLI Corp), spray - [www.entertainers-secret.com/](http://www.entertainers-secret.com/)
• Glandosane® (Kenwood/Bradley) spray
• Moi-Stir® Spray and Oral Swabsticks (Kingswood Labs)
• Optimoist® (Colgate-Palmolive) spray
• Saliva Substitute® (Roxane Labs) liquid
• Salivart® (Gebauer) preservative-free aerosol
• Salix® (Scandinavian Natural Health & Beauty) tablets
• Xero-Lube® Artificial Saliva (Scherer) sodium-free; spray
• Mucopolysaccharide Solutions
• MouthKote® (Parnell), spray
**Prescription Products**
Feel free to share this with your doctor or dentist.

- Caphosol artificial saliva - live.caphosol.com/us/PAT/Home.aspx
- Salagen (pilocarpine - cholinergic agonist medication) - www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000465/

**Additional Product Information**
If you use a mouthwash, make sure it is non-alcohol. Examples: Crest Pro-Health (over-the-counter), Chlorhexidine without Alcohol from Butler GUM (by prescription).

Use a mild toothpaste and be sure to discuss a prescription-strength fluoride with your dentist.

Hydration is important. Drink plenty of water. Try to avoid sugar by not adding it to your water. Sugar can increase your risk for developing cavities to your teeth. Sipping on water throughout the day is encouraged. A spray bottle at your bedside can be helpful for dry mouth at nighttime to avoid frequent urination that may disrupt your sleep further.

**Dry Mouth and Denture Fit**
Saliva helps your denture hold onto the gums. When your mouth is dry the denture can start to feel loose. This is made worse because the supporting tissues under your dentures continue to shrink the rest of your life. The amount of shrinkage is different from person to person. As shrinkage occurs, you may need to have your denture remade or relined more frequently than someone who has enough saliva.

Even with a perfect fit, you may still experience some looseness due to the lack of saliva to help hold the denture in place. A denture adhesive may help. There are many types of adhesives available, and your dentist can offer advice on which one best fits your needs.
Dry Mouth and Oral Infections

Since saliva regulates the germs in the mouth, a person with dry mouth is more prone to infection in the mouth. Your dentist can discuss with you the signs and symptoms to look for.

If you have some natural teeth, tooth decay is the most frequent cause of tooth loss in older adults who have a dry mouth. Without saliva to regulate the germs that cause decay, they can cause damage. Ask your dentist or dental hygienist about ways to reduce tooth decay.

Dental Caries (Decay and Cavities)

Dental caries or cavities are the disease of tooth decay. Pain and infection can result when the disease progresses – the obvious sign of a toothache. Your dental provider can discuss with you products, prescriptions and prevention for cavities.

Oral candidiasis (also known as oral thrush or yeast infection) is a fungal infection of the oral mucosa (soft tissues) that can be noticed on the tissue inside the mouth. It is often associated with decreased salivary flow or immune suppression in combination with radiation therapy or chemotherapy. It can present as obvious white plaques that have a distinct odor and can be wiped off or as a burning sensation in the mouth with associated redness of the soft tissues. You should seek the advice of your dentist if you notice these signs and the proper treatment will receive.

Regular Checkups Are Important – Even With Dentures

You may think that since you no longer have your natural teeth, you only need to see your dentist if you notice a problem. That is a dangerous myth. The supporting tissues under your dentures continue to change throughout the rest of your life. As the gums shrink, the denture and the gums become mismatched. This change happens little by little and is often not noticed by the denture wearer until significant damage has been done to the tissues, sometimes requiring surgery. Your dentist is trained to detect these changes and correct them early. Your dentist will also closely observe your tissues for signs of oral cancer, about half of which occurs in people with dentures.

Visit your dentist regularly (even if you no longer have any natural teeth) for a complete oral examination. Besides checking your dentures, the dentist will look for signs of oral cancer and examine your gum ridges, tongue, palate and jaw joints (temporomandibular joints or TMJ).
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