

Oral Cavity Cancer

A Guide for Patients and Families

Department of Otolaryngology



**UNIVERSITY OF
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MICHIGAN MEDICINE

Introduction

A team of doctors at the University of Michigan Health Otolaryngology Clinic wrote this booklet for people who have a diagnosis of oral cavity cancer, also known as mouth or oral cancer, and for the family members and friends who care about them. The purpose of this booklet is to give answers to questions about the cancer treatment and recovery process and about what you can expect from your surgery. If you have any additional questions, please ask an Otolaryngology clinic member.

Table of Contents:

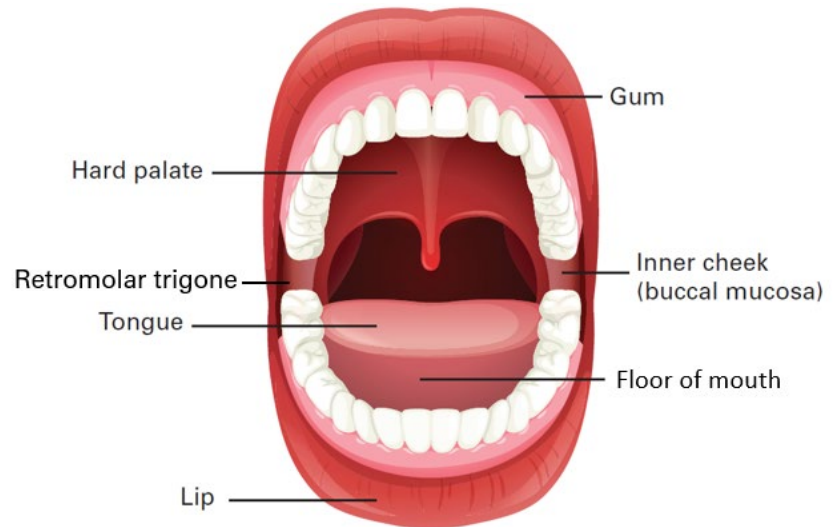
Oral Cavity Cancer.....	3
What is oral cavity cancer?.....	3
What is reconstructive surgery?.....	4
Post-Operative Recovery.....	9
Time in the hospital.....	9
Post-operative complications.....	11
Discharge to home or rehabilitation facility.....	15
Your pathology report.....	15
Life After Cancer Treatment.....	16
Cancer survivorship.....	17
Conclusion.....	19

Oral Cavity Cancer

What is oral cavity cancer?

Oral cavity cancer, also known as mouth or oral cancer, typically starts as a lump, bump, or patch in the mouth. The oral cavity has multiple parts, which include:

- Lips
- Oral tongue
- Buccal mucosa
- Retromolar trigone (small area behind the wisdom teeth)
- Alveolar ridge (ridge in the center of the roof of the mouth)
- Hard palate
- Floor of mouth



The oral cavity is made up of flat, thin squamous cells that line the mouth and throat. **Squamous cells** are flat cells that look like a fish scale under a microscope. Almost all the cancers in the oral cavity are squamous cell carcinomas. **Carcinoma** means cancer that begins in the skin or in tissues that line or cover internal organs. Excessive tobacco and alcohol use both contribute to squamous cell carcinomas. Common symptoms include:

- Painful sores or ulcers in the mouth
- Bleeding from the mouth
- Numbness in the mouth or chin
- Difficulty opening the mouth or speaking
- Bad breath.

How is oral cavity cancer diagnosed?

A **biopsy** (tissue sample) is necessary to confirm that the **lesion** (abnormal tissue) is cancer. This can either take place in clinic if the lesion is easily accessible and the risk of bleeding is low or in the operating room. Further evaluation with a Magnetic Resonance Imaging (MRI) or Computed Tomography (CT) scan may be required to determine if the cancer has spread to nearby lymph nodes or distant sites such as the lungs.

What is the treatment?

The treatment for oral cavity cancer is usually surgery, sometimes followed by chemotherapy and radiation treatment.

Your case will be presented at our **Multidisciplinary Tumor Board**, which is a large conference where doctors review your case and determine the final treatment plan. This board includes:

- Cancer surgeons
- **Oncologists** (doctors with special training in diagnosing and treating cancer)
- **Radiation oncologists** (doctors with special training in treating cancer with radiation)
- **Pathologists** (doctors with special training in identifying diseases)
- **Radiologists** (doctors with special training in creating and interpreting medical pictures of the body using x-rays, or other imaging tests)

What is reconstructive surgery?

The goal of **reconstructive surgery** is to restore function to tissue affected by cancer. If the defect is small, then the wound can be closed by simply stitching or stapling the skin back together. For larger affected areas, a split-thickness or full-thickness skin graft can be used. **Grafts** are pieces of tissue taken from one part of the body and moved to another to resurface defects that are surface

level. However, if the lesion is deep and a bulkier type of tissue is needed, then a free flap from various parts of the body is the best option. A **free flap** is a piece of tissue with its blood vessels, skin, fat, and sometimes muscle, that is removed and attached to another part of the body. Common free flaps used to reconstruct oral cavity defects are listed below:

Radial/ulnar artery forearm free flap (RFFF/UFFF)

The radial forearm flap is taken from the forearm. It is one of the most common free flaps used today for head and neck reconstruction because it is:

- Thin
- Easy to harvest
- Able to be used for multiple types of defects
- Has a long **vascular pedicle** (blood supply)

Using this flap also requires a skin graft to resurface the skin of the forearm where the flap was taken. A device called a wound vacuum will then be placed on top of the skin graft. A **wound vacuum** uses a foam bandage and a vacuum pump to decrease pressure on the wound. It pulls the edges of the wound together to speed up healing. Your arm will be placed in a special splint after surgery to help the skin graft heal properly.

Below: Tongue defects reconstructed with radial and ulnar artery free flaps.

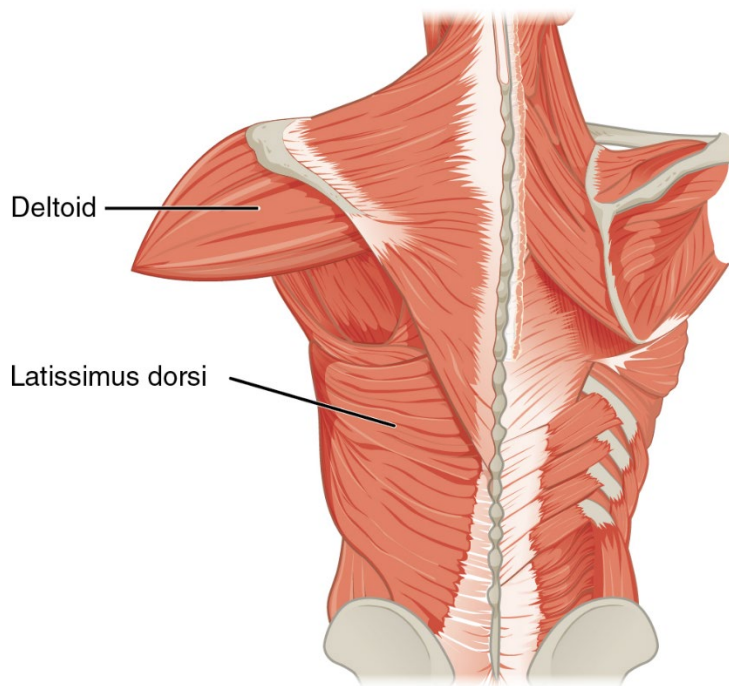


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Latissimus dorsi muscle (LAT) free flap

The **latissimus dorsi** muscle is the largest muscle in the body, allowing for it to be used to reconstruct large defects. It is located on both sides of the upper torso. It can also be combined with the other muscle flaps and flaps that have bone attached in the same region. The place this flap is taken from is closed primarily with stitches or staples, and at least 2 drains will be secured in place.

Below: the latissimus dorsi muscle shown on the back of the body.

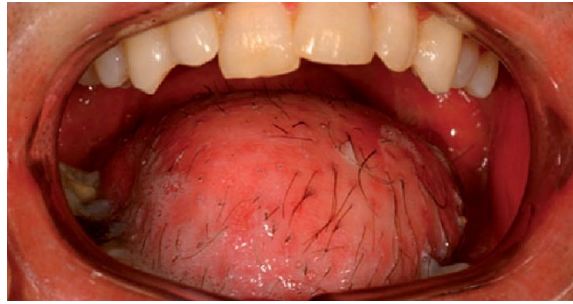


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Anterolateral thigh (ALT) free flap

The anterolateral thigh (ALT) flap is a versatile flap that may be used for any defect that requires soft tissue reconstruction with skin, fascia, or muscle. This flap can be used to rebuild your entire tongue if your cancer involves most of your tongue and requires a total tongue removal (total glossectomy).

Below: Total tongue defect reconstructed with an ALT free flap

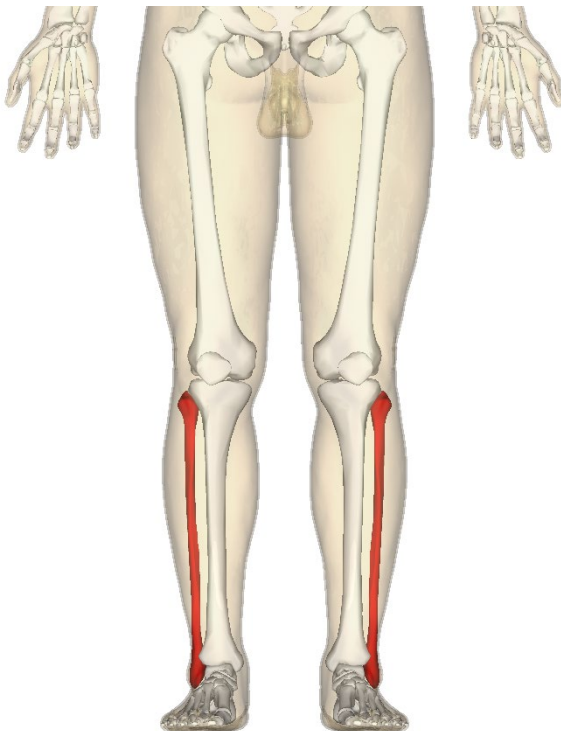


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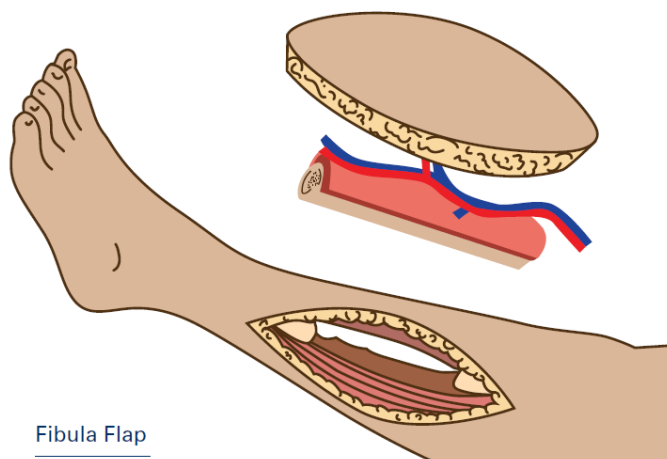
Fibula free flap

The **fibula bone** is the outer lower leg bone that is paired with the tibia, which is the main lower leg bone. Its main function is to help support and stabilize the ankle. It does not bear weight, so a segment can be removed without long-term impacts on standing, walking, or running. The fibula free flap is used if your oral cancer involves your jawbone (mandible) and needs to be removed to fully remove your cancer.

Below: the fibula bone is show on the front of the body in red.



Below: The fibula flap

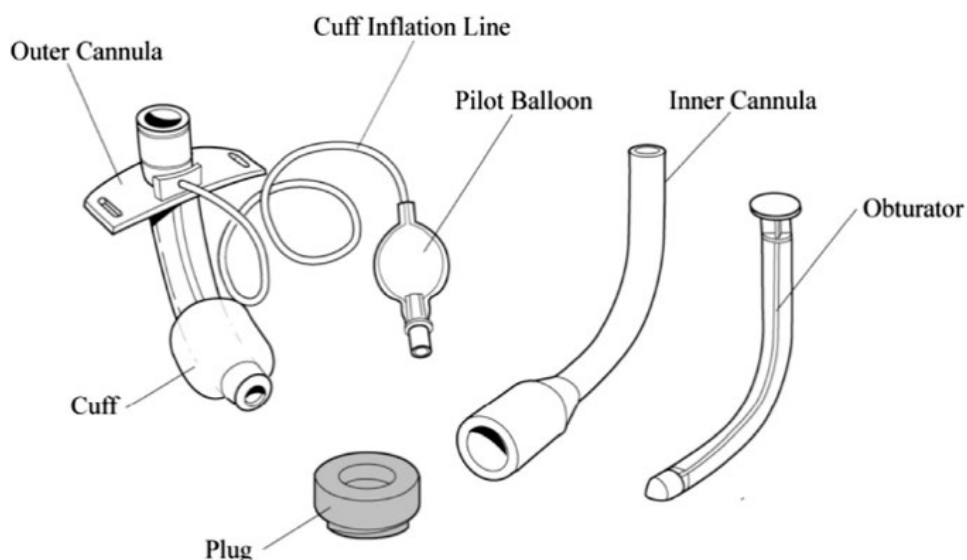


Fibula Flap

Tracheostomy

For some reconstructive surgeries, a temporary tracheostomy tube may be placed in your trachea (windpipe) to help you breathe. You will have significant swelling in your mouth both from the surgery and your flap reconstruction, making it hard to breathe, so the tracheostomy tube will bypass the blockage of airflow.

Below: tracheostomy tube parts



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Below: 6-0 cuffed Shiley tracheostomy tube



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Post-Operative Recovery

Time in the hospital

The first night after your surgery will be challenging as you adjust to:

- The initial shock of undergoing a long 8-hour surgery
- Having a new tracheostomy (if applicable)
- Awakening from anesthesia
- Sleeping poorly

Our team is here to support you during this time. Your pain will be controlled with opioid medications and you will have hourly check-ups and flap checks by your nurse and our overnight call **resident** (doctor getting advanced training).

Common milestones on the first post-operative day:

- Starting nutrition through the feeding tube in your nose or stomach
- Removing the Foley catheter from your bladder
- Deflating the balloon (cuff) on your tracheostomy tube if you have one

Deflating the balloon (cuff) on your trach tube will make you cough and make you uncomfortable, but this is normal. Focus on slow, deep breathing exercises. Between 3-5 days after surgery, your cuffed tracheostomy tube will be changed to a more comfortable tracheostomy tube without a cuff (cuffless). This will either be the same size or a size smaller.

It is important that you tell your nurse if you are having nausea or vomiting when starting your tube feedings. If you are not able to tolerate them, there are tube feeding formulas that you may tolerate better. Our team can also order anti-nausea medications.

You will have drains in your neck or extremities to remove fluid depending on the type of surgery you needed. These will usually be removed when the outputs are lower than 30 milliliters in 24 hours. However, some drains will stay longer than others in order to monitor for a new infection or if the output is too high to be removed at the time of discharge. Most people go home with at least 1-2 drains, especially if the drains are in the leg (ALT/fibula free flap) or back (LAT free flap). You will learn to move around with them attached and you will learn how to measure and care for the drains.

Below: Jackson-Pratt (JP) drains, large and small bulb, that are used for head and neck surgery patients



Common post-operative complications

Hematoma

A **hematoma** is a collection of blood that commonly forms after surgery. It is usually caused by slow oozing of blood from a vein in the surgical area or by active bleeding from an artery where a surgical clip failed. If the hematoma is small, then it can be managed with an ace bandage. If it is large or rapidly expanding (an active artery bleed), then it will require an additional surgery.

Flap problems

Your flap is reconstructing the area of your previous cancer with an artery and vein. Problems with the artery or the vein can happen at any point during your hospital stay, however they are most likely to happen within the first 3 days after surgery. Therefore, your flap is monitored by your nurse with a Doppler machine (ultrasound) every hour for the first 3 days after your surgery. If a problem with the artery or vein is discovered, then you need to return to the operating room urgently for an additional surgery. In rare cases, your original flap may not be able to be fixed, so you will need a new flap with a new artery and vein for reconstruction.

Wound infection or opening

Your surgical incisions may become infected or begin to breakdown a few days after surgery. Signs of infection include:

- Fever
- Chills
- Pus drainage
- Pain redness
- Bad smell coming from the wound

Infections are treated with antibiotics. Wound openings are treated with wound packing 2-3 times per day or a wound vacuum to help it close. There are times

when the wound is partially closed on purpose, and the remainder is left open to pack or place a wound vacuum.

Pharyngocutaneous fistula

Like a wound opening, a **pharyngocutaneous fistula** occurs when a connection forms between the underside of your tongue, or the back of your throat (pharynx), and your external neck skin. Saliva will either drain into your Jackson-Pratt (JP) drains in your neck or through a wound opening. This can be managed with an Ace bandage and antibiotics, which will help seal or close the connection. Your JP drains may be removed and replaced with red rubber catheters (flexible tubes) that are stitched in place. These are irrigated 3-4 times daily with Chlorpactin (very dilute bleach) to thoroughly clean your wound.

Tracheostomy mucous plugging

Your tracheostomy tube can become plugged with mucous if your secretions become too thick. We can thin the secretions in two ways:

- Oxygen with added humidity (moisture) through a tracheostomy mask
- Saline rinsing through your tracheostomy tube

However, mucous plugs still form despite these therapies. You will have trouble breathing if there is a mucous plug and your nurse will be able to recognize this issue immediately.

1. The first step to clear the plug is to perform a saline irrigation with suction.
2. If that is unsuccessful, then your nurse will change your tracheostomy tube inner cannula (tube).
3. If that is unsuccessful, then your nurse will page the overnight call resident who will place a scope down your tracheostomy tube to see the plug and determine how much room you have to breathe.
4. In rare cases, your tracheostomy tube will need to be taken out to remove a large mucous plug.

Pneumonia

Lung infections called pneumonia can occur after surgery. Signs and symptoms include:

- Fever
- Chills
- Coughing up pus
- Low oxygen in your blood
- Chest pain

Pneumonia is treated with antibiotics and extra oxygen as needed.

Deep vein thrombosis (DVT) and pulmonary embolism

A deep vein thrombosis (DVT) is a blood clot in the deep veins of the arms and legs. A pulmonary embolism is a blood clot or in the arteries of the lung (pulmonary arteries).

- Signs of a DVT include one-sided swelling and pain of the arm or leg.
- Signs of a pulmonary embolism are increased oxygen needed due to low oxygen in the blood, increased heart rate, and chest pain.

You are placed on medicine to help prevent DVTs, such as **subcutaneous** (administered into fatty tissue) Heparin and Lovenox, but they can still occur while taking these medications. If you are diagnosed with a blood clot in your arm or leg or lung, then you will be treated with a heparin infusion to thin your blood and prevent further formation of blood clots.

Urinary retention

You will have a Foley catheter (flexible tube) placed through your urethra and into your bladder at the start of your surgery to accurately monitor your urine output. It is kept in place after surgery and will usually be removed the next day. We will then monitor your urine output without the Foley.

- If you are not able to urinate within the first 6 hours, then we will scan your bladder to determine if your bladder is **retaining** (holding) urine.
- If there is greater than 250 ml of urine in your bladder, then we will drain your bladder with a straight disposable catheter.
- If you require more than 4 straight catheters in a row, then your Foley will be reinserted.

Your bladder is like a balloon that will keep filling with urine and can pop due to high pressures if it is not drained.

Alcohol withdrawal

If you drink large amounts of alcohol daily before surgery, then your body may crave this same amount of alcohol after surgery since you are not able to drink in the hospital. This is called **withdrawal**. Signs that your body is craving alcohol and going through withdrawal include:

- Tremors
- Sweating
- Trouble sleeping
- Anxiety
- Agitation
- Confusion
- Increased heart rate
- Increased blood pressure
- Hallucinations

These symptoms require frequent medications. You may need to be transferred to the Intensive Care Unit (ICU) for closer monitoring and infusion of medications that are only available in the ICU. Alcohol withdrawal is serious and can be fatal. Please tell your surgeon if you drink large amounts of alcohol daily.

Discharge to home or rehabilitation facility

Your road to recovery and healing continues while you are at home or your rehabilitation center. At this point, you and your family have learned how to administer tube feedings, take care of your tracheostomy, and care for wounds. Nursing staff at your facility have also been trained in these areas.

If you have questions about your care once you leave the hospital, this is normal. An emergency help line number was printed out on your discharge paperwork, so you can speak to one of our excellent residents and they will help you troubleshoot your problem and determine if you need to return to the hospital for further evaluation.

Call the help line if you notice any of these symptoms:

- Your feeding tube becomes clogged
- You notice neck swelling or a foul smell from your incision
- You start to bleed from your mouth
- Your tracheostomy tube comes out accidentally

Additionally, you will have a video visit with one of our nurse practitioners 2-4 days after you leave the hospital to make sure you are doing well. You will also return to clinic several times to:

- Ensure proper healing
- Remove neck sutures
- Remove drains
- Allow you to drink water for the first time since the night before surgery
- And more

Your Pathology Report

After surgery, your cancer is evaluated under the microscope by a doctor who specializes in **pathology** (disease cause and effect). Your pathology report will

be shared once it is available and your surgeon will review it with you and your family. Your pathology report includes information about:

- Your cancer type
- How aggressive the cancer is
- The spread of the cancer
- If the tumor was completely removed

It is important for the doctors to ensure that they have removed all of the cancer at the time of surgery. This is done by also removing a rim of normal tissue at the edge of the tumor, which is called the **surgical margin**. After reviewing the pathology report, you will be referred for consideration of chemotherapy and radiation after surgery if:

- Your cancer was large and aggressive
- The rim of normal tissue at the edge of the removed tumor (surgical margin) shows cancer cells under the microscope
- Cancer spread to multiple lymph nodes in your neck
- The cancer in your lymph nodes is growing outside of the lymph node (extranodal extension)

Life After Cancer Treatment

You should visit your surgeon, radiation oncologist, or medical oncologist on a regular schedule or earlier if you have any concerning symptoms. After treatment, you will see your cancer provider every:

- 1-3 months during the first year
- 3-6 months during the second year
- 6-8 months during the third and fourth year
- Once per year after 5 years

During these appointments, you will be evaluated for cancer recurrence. You will also need imaging studies for cancer surveillance, such as chest X-ray, CT,

MRI, or PET scan. If something suspicious comes up, then you will need a biopsy.

Cancer Survivorship

Oncologic surveillance / second primary screening

You will have frequent physical exams in clinic during your first 5 years after treatment (schedule outline above) to look for recurrent cancer at or near your previous site of cancer. Additionally, you will likely have imaging of your chest every year to look for distant spread of your cancer to your lungs.

Dental care

You should go to the dentist at least twice per year for check-up exams or cleanings after surgery or radiation. You should also use high-dose fluoride on your teeth daily; this can be with toothpaste or a mouthwash.

Carotid stenosis screening

You will have a duplex scan (ultrasound) every 2 years after radiation to check for artery narrowing from radiation that can increase your risk for **stroke** (blood not getting to your brain). If the artery becomes too narrow, then we will refer you to Vascular Surgery for further evaluation.

Speech/swallowing

Speech and swallowing are often abnormal after head and neck cancer treatment. Speech Language Pathology (SLP) services are provided at our clinic. These services are important to increase hydration and lubrication for dry mouth (xerostomia) as well as breath support for an optimal voice.

Hypothyroidism due to radiation

Your cancer provider or primary care doctor will monitor your Thyroid Stimulating Hormone (TSH) levels every 6-12 months. You may require thyroid

hormone supplementation permanently. Signs and symptoms of hypothyroidism include:

- Feeling colder
- Tired
- Dry/brittle skin and nails
- Depression
- Constipation

Sleep behaviors

Sleep patterns can change and the risk for obstructive sleep apnea (OSA) after head and neck cancer treatment is increased. Please be sure to tell your cancer provider if you have concerns regarding your sleep.

Depression

Depression is also common after head and neck cancer diagnosis and treatment, so we encourage you to tell your cancer provider or primary care doctor about your depression. Ask your doctor for resources and referrals on treating your depression.

Substance use

Quit smoking tobacco and drinking alcohol and do not restart, if possible, to reduce the risk of cancer recurrence. Ask your doctor for resources to help treat tobacco and/or alcohol addiction.

Neck pain, shoulder pain or fibrosis

Range of motion exercises are encouraged, Physical Therapy and Occupational Therapy (PT/OT) services are available to you as needed. Ask your doctor how to find these services.

In Closing

We hope that this booklet has provided you with some useful answers, but please feel free to ask us additional questions as they come up. Feel free to use the lines below for noting anything you might want to ask about later.

Disclaimer: This document contains information and/or instructional materials developed by the University of Michigan Health for the typical patient with your condition. It may include links to online content that was not created by University of Michigan Health and for which University of Michigan Health does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

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