



Memorial Sloan Kettering  
Cancer Center

PATIENT & CAREGIVER EDUCATION

# About Your Nasal Cavity and Paranasal Sinus Surgery

This guide will help you get ready for your nasal cavity and paranasal sinus surgery at MSK. It will also help you understand what to expect during your recovery.

Use this guide as a source of information in the days leading up to your surgery. Bring it with you every time you come to MSK, including the day of your surgery. You and your healthcare team will refer to it throughout your care.

## Your healthcare team

Doctor: \_\_\_\_\_

Nurse: \_\_\_\_\_

Phone number: \_\_\_\_\_

Fax number: \_\_\_\_\_

## Your caregiver

It's important to choose a person to be your caregiver. They'll learn about your surgery with you and help you care for yourself while you're recovering after surgery. Write down your caregiver's name below.

Caregiver: \_\_\_\_\_



To view this guide online, visit  
[www.mskcc.org/pe/nasal\\_paranasal\\_surgery](http://www.mskcc.org/pe/nasal_paranasal_surgery)

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# About Your Surgery

## Your nasal cavity and paranasal sinuses

Your nasal cavity is a large, air-filled space above and behind your nose, in the middle of your face. It has 2 openings, called the nostrils, that warm and moisturize the air you breathe in.

Inside your nasal cavity, you have 4 types of paranasal sinuses, usually called sinuses (see Figure 1). Your sinuses are a group of hollow, air-filled spaces that surround your nasal cavity. These include:

- **Frontal sinuses**, which are above your eyes.
- **Ethmoid sinuses**, which are between your eyes.
- **Sphenoid sinuses**, which are deep in your nasal cavity, behind your ethmoid sinuses.
- **Maxillary sinuses**, which are on the sides of your nose.

Your nasal cavity and sinuses are covered with a layer of cells that make mucus and warm the air you breathe. They also affect how your voice sounds when you speak.

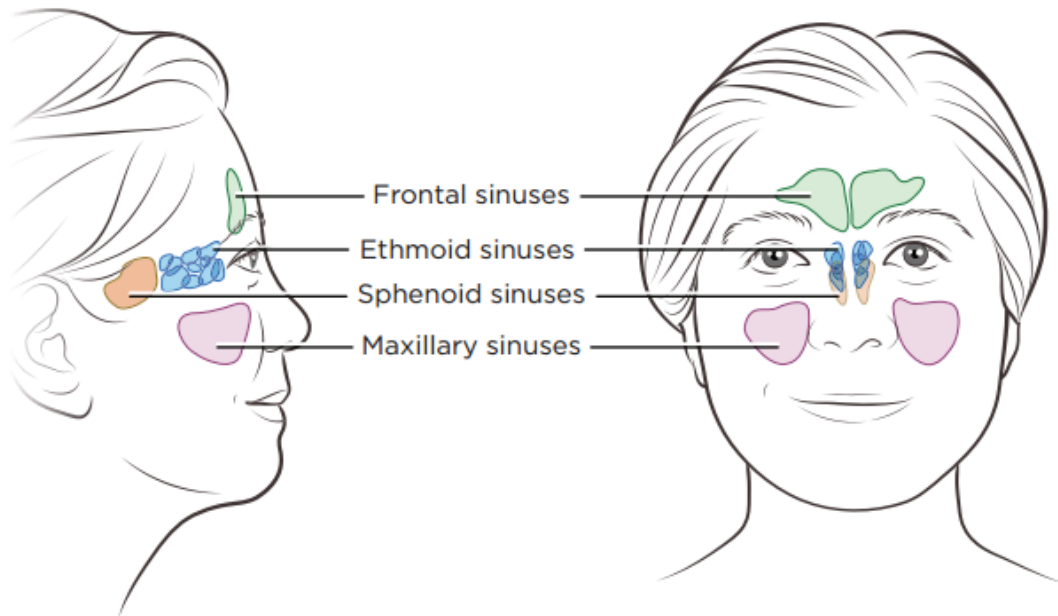


Figure 1. Your paranasal sinuses

# Nasal cavity and sinus surgery

Nasal cavity and sinus tumors are usually treated with surgery. The goal of the surgery is to remove the whole tumor and a small amount of normal tissue around it.

Your nasal cavity and sinuses are small areas that have many muscles, nerves, blood vessels, and other important structures. If any of these other structures need to be removed during your surgery, it can affect how you look and how you perform basic functions. Therefore, another goal of surgery is to help you look the same and be able to breathe, chew, talk, and swallow without difficulty after your surgery.

You'll have many different providers working together before, during, and after your surgery. Depending on your surgery, your treatment team may include:

- Head and neck surgeon, plastic reconstructive surgeon, and neurosurgeon
- Radiation oncologist
- Medical oncologist
- Dentist
- Nurses
- Speech and swallowing therapist
- Clinical dietitian nutritionists
- Case managers
- Social workers

Your healthcare provider will talk with you about which surgery you're having. The type of surgery depends on the where the tumors are, how big they are, and what other structures are involved. Here are descriptions of the different types of surgeries.

## Types of nasal cavity surgery

- Some nasal cavity tumors can be removed with a surgery called **wide local excision**. This surgery removes the tumor and a small amount of normal tissue around it.
- Tumors that are on your nasal turbinates (long, thin bones on the inside walls of your nose) can be removed by a surgery called **medial maxillectomy**.
- Tumors that involve the tissue on the outside of your nose may be removed by removing part of your nose or your entire nose.

## Types of sinus surgery

- Tumors that are small, noncancerous (not cancer), and involve only your ethmoid sinuses are removed with a surgery called **external ethmoidectomy**.
- Tumors that have grown into your maxillary sinus can be removed by a surgery called **maxillectomy**. The extent of the surgery depends on where the tumor is and if it involves nearby tissue and structures. During a maxillectomy, the following things may be partly or completely removed:
  - Bone around your maxillary sinus
  - Bone of your hard palate (roof of your mouth)
  - Upper teeth on one side of your mouth
  - Part of or your entire orbit (eye socket)
  - Part of your cheekbone
  - Part of the bony part of your upper nose

If part of your hard palate is removed, there may be an open connection between your nasal cavity and your oral cavity (mouth). Your dental surgeon will take impressions (make a mold of your upper mouth) before and the day of your surgery. They'll put a temporary surgical obturator (plate) to close the opening in your palate during your surgery. This will help you speak and eat after surgery.

You'll be discharged from the hospital with the temporary surgical obturator in place. About 2 weeks after your surgery, you'll have an appointment with your dental surgeon to remove the surgical obturator. During this appointment, your dental surgeon will fit a removable obturator to your mouth. They'll also give you instructions for cleaning and taking care of the obturator. You'll have regular follow-up appointments with your dental surgeon to check the obturator and adjust the fit if needed.

- Tumors in your ethmoid, frontal, or sphenoid sinuses are removed by a surgery called **craniofacial resection**. This surgery involves removing the tumor through incisions (surgical cuts) on your face and skull. By accessing the tumor from two directions, your surgeons have a better chance of removing the entire tumor. This also helps decrease possible damage to your brain, nerves, and other major structures. You'll have a head and neck surgeon, plastic surgeon, and neurosurgeon working together on your surgical team.

## Endoscopic surgery

This surgery uses endoscopes (thin, flexible, lighted tubes) that are put into your nose to reach your nasal cavity and sinuses. This surgery is used for tumors that are small and less involved with surrounding structures. It may also be used to treat sinus diseases that aren't cancer.

## Lymph node removal

Nasal cavity and sinus tumors sometimes spread to lymph nodes in your neck. Lymph nodes are removed through a surgery called neck dissection. Your surgeon will see if you need a neck dissection based on a medical exam and a computed tomography (CT) or magnetic resonance imaging (MRI) scan.

If you have lymph nodes removed, you'll have a drainage tube in place while you're in the hospital. Your nurses will keep track of the amount of drainage. Once the drainage is less than 20 to 30 milliliters (about 1/2 ounce) in 24 hours, the drain will be removed. This is usually 3 to 5 days after your surgery.

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## Before Your Surgery

The information in this section will help you get ready for your surgery. Read this section when your surgery is scheduled and refer to it as your surgery date gets closer. It has important information about what you need to do before your surgery.

As you read through this section, you can use the space below to write down any questions you want to ask your healthcare provider.

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# Getting ready for your surgery

You and your healthcare team will work together to get ready for your surgery.

Help us keep you safe during your surgery by telling us if any of the following statements apply to you, even if you aren't sure.

- |   |  |
|---|--|
| <input type="checkbox"/> I take a blood thinner, such as: <ul style="list-style-type: none"><li>○ Aspirin</li><li>○ Heparin</li><li>○ Warfarin (Jantoven® and Coumadin®)</li><li>○ Clopidogrel (Plavix®)</li><li>○ Enoxaparin (Lovenox®)</li><li>○ Dabigatran (Pradaxa®)</li><li>○ Apixaban (Eliquis®)</li><li>○ Rivaroxaban (Xarelto®)</li></ul> | <input type="checkbox"/> I take dietary supplements, such as herbs, vitamins, minerals, or natural or home remedies.         |
|   | <input type="checkbox"/> I have a pacemaker, automatic implantable cardioverter-defibrillator (AICD), or other heart device. |
|   | <input type="checkbox"/> I have sleep apnea.   |
|   | <input type="checkbox"/> I've had a problem with anesthesia (medication to make me sleep during surgery) in the past.        |
| <p>There are others, so be sure your healthcare provider knows all the medications you're taking.</p>   | <input type="checkbox"/> I'm allergic to certain medication(s) or materials, including latex.                                |
| <input type="checkbox"/> I take prescription medications (medications my healthcare provider prescribes), including patches and creams.   | <input type="checkbox"/> I'm not willing to receive a blood transfusion.   |
| <input type="checkbox"/> I take over-the-counter medications (medications I buy without a prescription), including patches and creams.  | <input type="checkbox"/> I drink alcohol.  |
|   | <input type="checkbox"/> I smoke or use an electronic smoking device (such as a vape pen, e-cigarette, or Juul®).            |
|   | <input type="checkbox"/> I use recreational drugs.   |

## About drinking alcohol

The amount of alcohol you drink can affect you during and after your surgery. It's important to talk with your healthcare providers about how much alcohol you drink. This will help us plan your care.

- If you stop drinking alcohol suddenly, it can cause seizures, delirium, and death. If we know you're at risk for these complications, we can prescribe medications to help keep them from happening.
- If you drink alcohol regularly, you may be at risk for other complications during and after your surgery. These include bleeding, infections, heart problems, and a longer hospital stay.



Here are things you can do before surgery to keep from having problems:

- Be honest with us about how much alcohol you drink.
- Try to stop drinking alcohol once your surgery is planned. Tell us right away if you:
  - Get a headache.
  - Feel nauseous (like you're going to throw up).
  - Feel more anxious (nervous or worried) than usual.
  - Cannot sleep.

These are early signs of alcohol withdrawal and can be treated.

- Tell us if you cannot stop drinking.
- Ask us questions about drinking and surgery. We will keep all your medical information private, as always.

## About smoking

If you smoke, you can have breathing problems when you have surgery. Stopping for even a few days before surgery can help.

We will refer you to our Tobacco Treatment Program if you smoke. You can also reach the program by calling 212-610-0507. To learn more, visit [www.msk.org/tobacco](http://www.msk.org/tobacco)

## About sleep apnea

Sleep apnea is a common breathing disorder that causes you to stop breathing for short periods of time while sleeping. The most common type is obstructive sleep apnea (OSA). With OSA, your airway becomes completely blocked during sleep. OSA can cause serious problems during and after surgery.

Please tell us if you have sleep apnea or if you think you might have it. If you use a breathing device (such as a CPAP device) for sleep apnea, bring it with you the day of your surgery.

## Using MyMSK

MyMSK ([my.mskcc.org](http://my.mskcc.org)) is your MSK patient portal account. You can use MyMSK to send and receive messages from your healthcare team, view your test results, see your appointment dates and times, and more. You can also invite your caregiver to create their own account so they can see information about your care.

If you don't have a MyMSK account, you can visit [my.mskcc.org](http://my.mskcc.org), call 646-227-2593, or call your doctor's office for an enrollment ID to sign up. You can also watch our video *How to Enroll in MyMSK: Memorial Sloan Kettering's Patient Portal* ([www.mskcc.org/pe/enroll\\_mymsk](http://www.mskcc.org/pe/enroll_mymsk)). For help, contact the MyMSK Help Desk by emailing [mymsk@mskcc.org](mailto:mymsk@mskcc.org) or calling 800-248-0593.

## Within 30 days of your surgery

### Presurgical Testing (PST)

Before your surgery, you'll have an appointment for presurgical testing (PST). The date, time, and location will be printed on the appointment reminder from your surgeon's office. You can eat and take your usual medications the day of your appointment.

During your PST appointment, you'll meet with a nurse practitioner (NP) who works closely with anesthesiology staff (specialized healthcare providers who will give you anesthesia during your surgery). Your NP will review your medical and surgical history with you. You may have tests, such as an electrocardiogram (EKG) to check your heart rhythm, a chest x-ray, blood tests, and any other tests needed to plan your care. Your NP may also recommend that you see other healthcare providers.

Your NP will talk with you about which medications you should take the morning of your surgery.

It's helpful to bring the following things to your PST appointment:

- A list of all the medications you're taking, including prescription and over-the-counter medications, patches, and creams.
- Results of any tests done outside of MSK, such as a cardiac stress test, echocardiogram, or carotid doppler study.
- The name(s) and telephone number(s) of your healthcare provider(s).

### Identify your caregiver

Your caregiver plays an important role in your care. Before your surgery, you and your caregiver will learn about your surgery from your healthcare providers. After your surgery, your caregiver will take you home when you're discharged from the hospital. They'll also help you care for yourself at home.



#### For caregivers

Resources and support are available to help manage the responsibilities that come with caring for a person going through cancer treatment. For support resources and information, visit [www.mskcc.org/caregivers](http://www.mskcc.org/caregivers) or read *A Guide for Caregivers*. You can find it online at [www.mskcc.org/pe/guide\\_caregivers](http://www.mskcc.org/pe/guide_caregivers) or ask your healthcare provider for a copy.

## **Complete a Health Care Proxy form**

If you haven't already completed a Health Care Proxy form, we recommend you complete one now. If you've already completed one or have any other advance directives, bring them to your next appointment.

A health care proxy is a legal document that identifies the person who will speak for you if you can't communicate for yourself. The person you identify is called your health care agent.

Talk with your healthcare provider if you'd like to complete a health care proxy. You can also read the resources *Advance Care Planning* and *How to Be a Health Care Agent* for information about health care proxies, other advance directives, and being a health care agent. You can find them online at [www.mskcc.org/pe/advance\\_care\\_planning](http://www.mskcc.org/pe/advance_care_planning) and [www.mskcc.org/pe/health\\_care\\_agent](http://www.mskcc.org/pe/health_care_agent) or ask your healthcare provider for a copy.

## **Do breathing and coughing exercises**

Practice taking deep breaths and coughing before your surgery. Your healthcare provider will give you an incentive spirometer to help expand your lungs. For more information, read the resource *How to Use Your Incentive Spirometer*. You can find it in the "Educational Resources" section of this guide.

## **Exercise**

Try to do aerobic exercise every day. Aerobic exercise is any exercise that makes your heartbeat faster, such as walking, swimming, or biking. If it's cold outside, use stairs in your home or go to a mall or shopping center. Exercising will help your body get into its best condition for your surgery and make your recovery faster and easier.

## **Follow a healthy diet**

Follow a well-balanced, healthy diet before your surgery. If you need help with your diet, talk with your healthcare provider about meeting with a clinical dietitian nutritionist.

## **7 days before your surgery**

### **Follow your healthcare provider's instructions for taking aspirin**

If you take aspirin or a medication that contains aspirin, you may need to change your dose or stop taking it 7 days before your surgery. Aspirin can cause bleeding.

Follow your healthcare provider's instructions. **Don't stop taking aspirin unless they tell you to.** For more information, read *How To Check if a Medicine or Supplement Has*

*Aspirin, Other NSAIDs, Vitamin E, or Fish Oil.* You can find it in the “Educational Resources” section of this guide.

## **Stop taking vitamin E, multivitamins, herbal remedies, and other dietary supplements**

Stop taking vitamin E, multivitamins, herbal remedies, and other dietary supplements 7 days before your surgery. These things can cause bleeding. For more information, read the resource *Herbal Remedies and Cancer Treatment*. You can find it in the “Educational Resources” section of this guide.

## **2 days before your surgery**

### **Stop taking nonsteroidal anti-inflammatory drugs (NSAIDs)**

Stop taking NSAIDs, such as ibuprofen (Advil® and Motrin®) and naproxen (Aleve®), 2 days before your surgery. These medications can cause bleeding. For more information, read *How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil*. You can find it in the “Educational Resources” section of this guide.

## **1 day before your surgery**

### **Note the time of your surgery**

A staff member from the Admitting Office will call you after 2:00 PM the day before your surgery. If your surgery is scheduled for a Monday, they’ll call you on the Friday before. If you don’t get a call by 7:00 PM, call 212-639-5014.

The staff member will tell you what time to arrive at the hospital for your surgery. They’ll also remind you where to go. This will be one of the following locations:

- ☐ Presurgical Center (PSC) on the 2<sup>nd</sup> floor  
1275 York Avenue (between East 67<sup>th</sup> and East 68<sup>th</sup> Streets)  
New York, NY 10065  
Take the M elevator to the 2<sup>nd</sup> floor
- ☐ Presurgical Center (PSC) on the 6<sup>th</sup> floor  
1275 York Avenue (between East 67<sup>th</sup> and East 68<sup>th</sup> Streets)  
New York, NY 10065  
Take the B elevator to the 6<sup>th</sup> floor

## **Shower**

Wash yourself with soap and water the night before your surgery.

## Instructions for eating and drinking: 8 hours before your arrival time



- Stop eating 8 hours before your arrival time, if you have not already.
  - Your healthcare provider may tell you to stop eating earlier. If they do, follow their instructions.
- 8 hours before your arrival time, do not eat or drink anything except these clear liquids:
  - Water.
  - Soda.
  - Clear juices, such as lemonade, apple, and cranberry juices. Do not drink orange juice or juices with pulp.
  - Black coffee or tea (without any type of milk or creamer).
  - Sports drinks, such as Gatorade®.
  - ClearFast CF(Preop)® or Ensure® Pre-Surgery clear carbohydrate drink.
  - Gelatin, such as Jell-O®.

You can keep having these until 2 hours before your arrival time.

## The day of your surgery

Remember, starting 8 hours before your arrival time, do not eat or drink anything except the things listed earlier.

## Instructions for drinking: 2 hours before your arrival time



Stop drinking 2 hours before your arrival time. This includes water.

## Take your medicines as instructed

A member of your care team will tell you which medicines to take the morning of your surgery. Take only those medicines with a sip of water. Depending on what you usually take, this may be all, some, or none of your usual morning medicines.

## Things to remember

- Wear something comfortable and loose-fitting.
- If you wear contact lenses, wear your glasses instead. Wearing contact lenses during surgery can damage your eyes.
- Don't wear any metal objects. Remove all jewelry, including body piercings. The tools used during your surgery can cause burns if they touch metal.
- Don't wear any lotion, cream, deodorant, makeup, powder, perfume, or cologne.
- Leave valuable items at home.
- If you're menstruating (have your monthly period), use a sanitary pad, not a tampon. You'll get disposable underwear, as well as a pad if needed.

## What to bring

- A button- down or loose-fitting top.
- Your breathing device for sleep apnea (such as your CPAP device), if you have one.
- Your Health Care Proxy form and other advance directives, if you completed them.
- Your cell phone and charger.
- Only the money you may want for small purchases (such as a newspaper).
- A case for your personal items (such as eyeglasses, hearing aid(s), dentures, prosthetic device(s), wig, and religious articles), if you have one.
- This guide. Your healthcare team will use it to teach you how to care for yourself after surgery.

## Where to park

MSK's parking garage is on East 66<sup>th</sup> Street between York and First Avenues. If you have questions about prices, call 212-639-2338.

To reach the garage, turn onto East 66<sup>th</sup> Street from York Avenue. The garage is about a quarter of a block in from York Avenue, on the right-hand (north) side of the street. There's a tunnel you can walk through that connects the garage to the hospital.

There are also other garages on East 69<sup>th</sup> Street between First and Second Avenues, East 67<sup>th</sup> Street between York and First Avenues, and East 65<sup>th</sup> Street between First and Second Avenues.

## **Once you're in the hospital**

You'll be asked to say and spell your name and birth date many times. This is for your safety. People with the same or a similar name may be having surgery on the same day.

When it's time to change for surgery, you'll get a hospital gown, robe, and nonskid socks to wear.

## **Meet with a nurse**

You'll meet with a nurse before surgery. Tell them the dose of any medications you took after midnight (including prescription and over-the-counter medications, patches, and creams) and the time you took them.

Your nurse may place an intravenous (IV) line in one of your veins, usually in your arm or hand. If your nurse doesn't place the IV, your anesthesiologist will do it in the operating room.

## **Meet with an anesthesiologist**

You'll also meet with an anesthesiologist before surgery. They will:

- Review your medical history with you.
- Ask if you've had any problems with anesthesia in the past, including nausea or pain.
- Talk with you about your comfort and safety during your surgery.
- Talk with you about the kind of anesthesia you'll get.
- Answer your questions about your anesthesia.

## **Get ready for your surgery**

When it's time for your surgery, you'll need to remove your hearing aids, dentures, prosthetic device(s), wig, and religious articles, if you have them. You'll either walk into the operating room or be taken in on a stretcher. A member of the operating room team will help you onto the operating bed and place compression boots on your lower legs. These gently inflate and deflate to help blood flow in your legs.

Once you're comfortable, your anesthesiologist will give you anesthesia through your IV line and you'll fall asleep. You'll also get fluids through your IV line during and after your surgery.

## During your surgery

After you're fully asleep, a breathing tube will be placed through your mouth and into your windpipe to help you breathe. A urinary (Foley) catheter will also be placed to drain urine (pee) from your bladder.

Once your surgery is finished, your incision will be closed with staples or sutures (stitches). You may also have Steri-Strips™ (thin pieces of surgical tape) or Dermabond® (surgical glue) over your incisions. Your incisions may be covered with a bandage.

Your breathing tube is usually taken out while you're still in the operating room.

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## After Your Surgery

The information in this section will tell you what to expect after your surgery, both during your hospital stay and after you leave the hospital. You'll learn how to safely recover from your surgery.

As you read through this section, you can use the space below to write down any questions you want to ask your healthcare provider.

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## In the Post-Anesthesia Care Unit (PACU)

When you wake up after your surgery, you'll be in the PACU. A nurse will be keeping track of your body temperature, pulse, blood pressure, and oxygen levels. You may be getting oxygen through a thin tube that rests below your nose or a mask that covers your nose and mouth. You'll also have compression boots on your lower legs.

### Pain medication

You'll get IV pain medication while you're in the PACU. You'll be able to control your pain medication using a button called a patient-controlled analgesia (PCA) device. For more information, read the resource *Patient-Controlled Analgesia (PCA)*. You can find it online at [www.mskcc.org/pe/pca](http://www.mskcc.org/pe/pca) or ask your healthcare provider for a copy.

### Tubes and drains

You'll have 1 or more of the following:

- ☐ Drainage tubes near your incisions. These help drain fluid from the area to help your wounds heal.
- ☐ A Foley catheter through your urethra, into your bladder. This drains urine (pee) from your bladder.
- ☐ A face mask and humidifier. This helps keep your airways moist.
- ☐ A nasogastric (NG) feeding tube, if needed. This is a tube that goes through your nose, into your stomach. It's used to give you nutrition. If you need a NG tube, it will be placed while you're asleep during surgery and removed once you're ready.
- ☐ Splints in your nose (Doyle splints). These help prevent scarring in your nose. They'll be removed during your first appointment after surgery.

### Moving to your hospital room

Depending on the type of surgery you had, you may stay in the PACU for a few hours or overnight. After your stay in the PACU, a staff member will take you to your hospital room.

## In your hospital room

The length of time you're in the hospital after your surgery depends on your recovery. A member of your healthcare team will tell you what to expect.

When you're taken to your hospital room, you'll meet one of the nurses who will care for you while you're in the hospital. Soon after you arrive in your room, your nurse will help you out of bed and into your chair.

While you're in the hospital, your healthcare providers will teach you how to care for yourself while you're recovering from your surgery.

Read the resource *Call! Don't Fall!* to learn what you can do to stay safe and keep from falling while you're in the hospital. You can ask your healthcare provider for a copy or find it online at [www.mskcc.org/pe/call\\_dont\\_fall](http://www.mskcc.org/pe/call_dont_fall)

## Managing your pain

You'll have some pain after your surgery. At first, you'll get your pain medication through your epidural catheter or IV line. You'll be able to control your pain medication using a PCA device. Once you're able to eat, you'll get oral pain medication (medication you swallow).

Your healthcare providers will ask you about your pain often and give you medication as needed. If your pain isn't relieved, tell one of your healthcare providers. It's important to control your pain so you can use your incentive spirometer and move around. Controlling your pain will help you recover better.

You'll get a prescription for pain medication before you leave the hospital. Talk with your healthcare provider about possible side effects and when to start switching to over-the-counter pain medications.

## Moving around and walking

Moving around and walking will help lower your risk for blood clots and pneumonia (lung infection). It will also help you start passing gas and having bowel movements (pooping) again. Your nurse, physical therapist, or occupational therapist will help you move around, if needed.

## Exercising your lungs

It's important to exercise your lungs so they expand fully. This helps prevent pneumonia.

- Use your incentive spirometer 10 times every hour you're awake. For more information, read the resource *How to Use Your Incentive Spirometer*. You can find it in the "Educational Resources" section of this guide.

- Do coughing and deep breathing exercises. A member of your care team will teach you how.

## **Eating and drinking**

For your first meal after your surgery, you'll have only clear liquids. After that, you'll slowly start following a puréed diet, then a mechanical soft diet. For more information, read the resource *Eating Guide for Puréed and Mechanical Soft Diets*. You can find it in the "Educational Resources" section of this guide.

If you have questions about your diet, ask to see a clinical dietitian nutritionist.

## **Caring for your tubes and drains**

A staff member will care for your tubes and drains while you're in the hospital. If you'll be leaving the hospital with tubes or drains, they'll also teach you how to care for them so you can do it yourself at home. It may be helpful if your caregiver learns too.

## **Showering**

If you have drainage tubes near your incision, you can shower, but don't get the drainage tubes wet. A staff member will help you. You can take a normal shower 24 hours after your drainage tubes are removed.

If you don't have drainage tubes near your incision, don't take a shower for first 48 hours after your surgery. You can take a sponge bath. A staff member will help you.

## **Planning for discharge**

Your nurse will teach you the self-care you'll need to continue caring for yourself at home. This may involve irrigating your mouth and nose, if needed. You'll also learn exercises to prevent trismus. This is the inability to open your jaw that can develop from scarring or changes in the muscles around your jaw. For more information, read the resource *Managing Trismus After Treatment for Head and Neck Cancer*. You can find it in the "Educational Resources" section of this guide.

If you stay in the hospital for less than 1 week, you'll leave the hospital with staples or stitches in your incision. They'll be removed during a follow-up appointment after surgery. If you stay in the hospital for longer than 1 week, some or all of your staples or stitches will be removed before you leave.

## Leaving the hospital

By the time you're ready to leave the hospital, your incision will have started to heal. Before you leave, look at your incision with one of your healthcare providers. Knowing what it looks like will help you notice any changes later.

On the day of your discharge, plan to leave the hospital around 11:00 AM. Before you leave, your healthcare provider will write your discharge order and prescriptions. You'll also get written discharge instructions. One of your healthcare providers will review them with you before you leave.

If your ride isn't at the hospital when you're ready to be discharged, you may be able to wait in the Patient Transition Lounge. A member of your healthcare team will give you more information.

## At home

Read the resource *What You Can Do to Avoid Falling* to learn what you can do to stay safe and keep from falling at home and during your appointments at MSK. You can find it online at [www.mskcc.org/pe/avoid\\_falling](http://www.mskcc.org/pe/avoid_falling) or ask your healthcare provider for a copy.

## Filling out your Recovery Tracker

We want to know how you're feeling after you leave the hospital. To help us continue caring for you, we'll send a group of questions to your MyMSK account every day for 10 days after you leave the hospital. These questions are known as your Recovery Tracker.

Fill out your Recovery Tracker every day before midnight (12:00 AM). It only takes 2 to 3 minutes to complete. Your answers to these questions will help us understand how you're feeling and what you need.

Based on your answers, we may reach out to you or ask you to call your surgeon's office to give us more information. You can always contact your surgeon's office if you have any questions. For more information, read the resource *About Your Recovery Tracker*. You can find it in the "Educational Resources" section of this guide.

## Managing your pain

People have pain or discomfort for different lengths of time. You may still have some pain when you go home and will probably be taking pain medication. Some people have soreness, tightness, or muscle aches around their incision for 6 months or longer. This doesn't mean something is wrong.

Follow the guidelines below to help manage your pain at home.

- Take your medications as directed and as needed.
- Call your healthcare provider if the medication prescribed for you doesn't ease your pain.
- Don't drive or drink alcohol while you're taking prescription pain medication. Some prescription pain medications can make you drowsy. Alcohol can make the drowsiness worse.
- As your incision heals, you'll have less pain and need less pain medication. An over-the-counter pain reliever such as acetaminophen (Tylenol®) or ibuprofen (Advil®) will ease aches and discomfort.
  - Follow your healthcare provider's instructions for stopping your prescription pain medication.
  - Don't take more of any medication than the amount directed on the label or as instructed by your healthcare provider.
  - Read the labels on all the medications you're taking, especially if you're taking acetaminophen. Acetaminophen is an ingredient in many over-the-counter and prescription medications. Taking too much can harm your liver. Don't take more than 1 medication that contains acetaminophen without talking with a member of your healthcare team.
- Pain medication should help you resume your normal activities. Take enough medication to do your activities and exercises comfortably. It's normal for your pain to increase a little as you start to be more active.
- Keep track of when you take your pain medication. It works best 30 to 45 minutes after you take it. Taking it when you first have pain is better than waiting for the pain to get worse.

Some prescription pain medications (such as opioids) may cause constipation (having fewer bowel movements than usual).

## Preventing and managing constipation

Talk with your healthcare provider about how to prevent and manage constipation. You can also follow the guidelines below.

- Go to the bathroom at the same time every day. Your body will get used to going at that time. If you feel like you need to go, though, don't put it off.
- Try to use the bathroom 5 to 15 minutes after meals. After breakfast is a good time to go. That's when the reflexes in your colon are strongest.
- Exercise, if you can. Walking is an excellent form of exercise.
- Drink 8 to 10 (8-ounce) glasses (2 liters) of liquids daily, if you can.
  - Choose liquids such as water, juices (such as prune juice), soups, and ice cream shakes.
  - Avoid liquids with caffeine (such as coffee and soda). Caffeine can pull fluid out of your body.

If these things don't help, talk with your healthcare provider. They may recommend an over-the-counter or prescription medication.

For more information, read the resource *Constipation*. You can find it online at [www.mskcc.org/pe/constipation](http://www.mskcc.org/pe/constipation) or ask your healthcare provider for a copy.

## Caring for your incision

Your healthcare provider will give you written instructions on how to care for your incisions before you leave the hospital.

It's normal for the skin below your incision to feel numb. This happens because some of your nerves were cut during your surgery. The numbness will go away over time.

Call your healthcare provider's office if:

- The skin around your incision is very red.
- The skin around your incision is getting more red.
- You see drainage that looks like pus (thick and milky).
- Your incision smells bad.

If you go home with staples or stitches in your incision, your healthcare provider will take them out during your first appointment after surgery. It's OK to get them wet.

If you had radiation therapy to your neck before your surgery, your healthcare provider will take out your staples or stitches 2 to 3 weeks after your surgery.

## **Eating and drinking**

Your healthcare team will tell you if you need to follow a special diet at home. If you have questions about your diet, ask to see a clinical dietitian nutritionist.

## **Nasal changes after sinus surgery**

If you had sinus surgery, you'll have congestion (stuffiness) and drainage. This can come and go. Your healthcare provider will help you manage these during your appointments after surgery.

You may have less of a sense of smell for some time after your surgery. This can also affect your sense of taste. These things will come back as you heal.

## **Nasal precautions after sinus surgery**

If you had a sinus surgery, follow the precautions below for the first 4 to 6 weeks after your surgery.

- Don't put anything in your nose.
- Don't drink through a straw.
- Don't lower your head below your shoulders.
- Sneeze with your mouth open.
- Cough with your mouth open.

Your healthcare provider will tell you if this applies to you.

## **Physical activity and exercise**

When you leave the hospital, your incision will look like it's healed on the outside, but it won't be healed on the inside. For the first 4 to 6 weeks after your surgery:

- Don't lift anything heavier than 10 pounds (4.5 kilograms).
- Don't do any strenuous activities (such as jogging and tennis).
- Don't play any contact sports (such as football).

Doing aerobic exercise, such as walking and stair climbing, will help you gain strength and feel better. Walk at least 2 to 3 times a day for 20 to 30 minutes. You can walk outside or indoors at your local mall or shopping center.

It's normal to have less energy than usual after your surgery. Recovery time is different for each person. Increase your activities each day as much as you can. Always balance activity periods with rest periods. Rest is an important part of your recovery.



## **Driving**

Ask your healthcare provider when you can drive. Most people can start driving again 1 week after surgery. Don't drive while you're taking pain medication that may make you drowsy.

You can ride in a car as a passenger at any time after you leave the hospital.

## **Going back to work**

Talk with your healthcare provider about your job and when it may be safe for you to start working again. If your job involves lots of movement or heavy lifting, you may need to stay out a little longer than if you sit at a desk.

## **Traveling**

If you had sinus or skull base surgery, don't fly in a plane for 6 weeks after your surgery. Your healthcare team will tell you if this applies to you.

## **Getting your test results**

The tissue that was removed during your surgery will be examined by a pathologist after your surgery. The test results are usually ready in 1 week, but they can take longer depending on the tests that are done. Your healthcare provider will discuss the results with you during your first follow-up appointment after your surgery.

## **Follow-up appointments**

Your healthcare provider will talk with you about your long-term follow-up care. Your first appointment after your surgery will be about 7 to 10 days after you're discharged from the hospital. During this visit, your nurse will teach you how to care for your nose and sinuses at home, if needed.

If you have a sinus surgery, you'll have regular appointments with your doctor during the first month after surgery. They'll help keep your nose and sinuses clear which can help you heal and keep you comfortable.

You'll have regular appointments with your dental team for several months after your surgery. If you have an obturator, they'll adjust it as needed to help you be able to chew, swallow, and speak. If needed, a facial prosthesis will be made to help you look the same as you did before your surgery.

If needed, a speech pathologist from the Speech and Hearing Center will work with you. A speech pathologist treats:

- Voice loss
- Swallowing disorders

- Impaired speech

Your speech pathologist will help you regain as much of your speech and swallowing as possible.

If you have any questions or concerns, you can contact your healthcare provider's office at any time after you've been discharged from the hospital.

## **Managing your feelings**

After surgery for a serious illness, you may have new and upsetting feelings. Many people say they felt weepy, sad, worried, nervous, irritable, and angry at one time or another. You may find that you can't control some of these feelings. If this happens, it's a good idea to seek emotional support. Your healthcare provider can refer you to MSK's Counseling Center. You can also reach them by calling 646-888-0200.

The first step in coping is to talk about how you feel. Family and friends can help. Your healthcare providers can reassure, support, and guide you. It's always a good idea to let us know how you, your family, and your friends are feeling emotionally. Many resources are available to you and your family. Whether you're in the hospital or at home, we're here to help you and your family and friends handle the emotional aspects of your illness.

Your treatment may change your appearance. This can be especially upsetting. There are many resources to help you and your family during your recovery. Some are here at MSK and others are in your community. Ask your doctor, nurse, or social worker about options.

The Resources for Life After Cancer (RLAC) Program provides support and education for people who are finished with treatment. To learn more about the programs they offer, call 646-888-8106 or go to [www.mskcc.org/experience/living-beyond-cancer/services-survivors](http://www.mskcc.org/experience/living-beyond-cancer/services-survivors)

Depression can occur at any time when you have a cancer diagnosis. It's important to recognize the symptoms. Help is available to treat and manage it. Signs of depression are:

- Feelings of helplessness and sadness lasting longer than usual
- Inability or difficulty to concentrate, carry out normal activities, or both
- Change in mood
- Change in sleep pattern
- Change in appetite

If you have any of these symptoms and they last more than 2 weeks, tell your healthcare provider.

## When to call your healthcare provider



Call your healthcare provider if:

- You have a fever of 100.5 °F (38 °C) or higher.
- You have chills.
- You're having trouble breathing.
- The skin around your incision is warmer than usual.
- The skin around your incision is getting redder.
- The area around your incision is starting to swell.
- The area around your incision is getting more swollen.
- You have drainage or fluid coming from your incision site.
- You have any questions or concerns.

### Contact information

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call.

If you're not sure how to reach your healthcare provider, call 212-639-2000.

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## Support Services

This section has a list of support services that may help you get ready for your surgery and recover safely.

As you read through this section, you can use the space below to write down any questions you want to ask your healthcare provider.

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# MSK support services

## **Admitting Office**

212-639-7606

Call if you have questions about your hospital admission, including requesting a private room.

## **Anesthesia**

212-639-6840

Call if you have questions about anesthesia.

## **Blood Donor Room**

212-639-7643

Call for more information if you're interested in donating blood or platelets.

## **Bobst International Center**

332-699-7968

MSK welcomes patients from around the world. If you're an international patient, call for help arranging your care.

## **Chaplaincy Service**

212-639-5982

At MSK, our chaplains are available to listen, help support family members, pray, contact community clergy or faith groups, or simply be a comforting companion and a spiritual presence. Anyone can request spiritual support, regardless of formal religious affiliation. The interfaith chapel is located near the main lobby of Memorial Hospital and is open 24 hours a day. If you have an emergency, please call the hospital operator and ask for the chaplain on call.

## **Counseling Center**

646-888-0200

Many people find that counseling helps them. We provide counseling for individuals, couples, families, and groups, as well as medications to help if you feel anxious or depressed. To make an appointment, ask your healthcare provider for a referral or call the number above.

## **Food Pantry Program**

646-888-8055

The food pantry program provides food to people in need during their cancer treatment. For more information, talk with your healthcare provider or call the number above.

## **Integrative Medicine Service**

646-888-0800

Integrative Medicine Service offers many services to complement (go along with) traditional medical care, including music therapy, mind/body therapies, dance and movement therapy, yoga, and touch therapy.

**MSK Library**

library.mskcc.org

212-639-7439

You can visit our library website or speak with the library reference staff to find more information about your specific cancer type. You can also visit LibGuides on MSK's library website at [libguides.mskcc.org](http://libguides.mskcc.org)

**Patient and Caregiver Education**

[www.mskcc.org/pe](http://www.mskcc.org/pe)

Visit the Patient and Caregiver Education website to search our virtual library. There you can find written educational resources, videos, and online programs.

**Patient Billing**

646-227-3378

Call if you have questions about preauthorization with your insurance company. This is also called preapproval.

**Patient Representative Office**

212-639-7202

Call if you have questions about the Health Care Proxy form or if you have concerns about your care.

**Perioperative Nurse Liaison**

212-639-5935

Call if you have questions about MSK releasing any information while you're having surgery.

**Private Duty Nursing Office**

212-639-6892

You may request private nurses or companions. Call for more information.

**Resources for Life After Cancer (RLAC) Program**

646-888-8106

At MSK, care doesn't end after active treatment. The RLAC Program is for patients and their families who have finished treatment. This program has many services, including seminars, workshops, support groups, counseling on life after treatment, and help with insurance and employment issues.

## **Sexual Health Programs**

Cancer and cancer treatments can have an impact on your sexual health. MSK's Sexual Health Programs can help you take action and address sexual health issues before, during, or after your treatment.

- Our **Female Sexual Medicine and Women's Health Program** helps women who are dealing with cancer-related sexual health challenges, including premature menopause and fertility issues. For more information, or to make an appointment, call 646-888-5076.
- Our **Male Sexual and Reproductive Medicine Program** helps men who are dealing with cancer-related sexual health challenges, including erectile dysfunction. For more information, or to make an appointment, call 646-888-6024.

## **Social Work**

212-639-7020

Social workers help patients, family, and friends deal with issues that are common for cancer patients. They provide individual counseling and support groups throughout the course of treatment and can help you communicate with children and other family members. Our social workers can also help refer you to community agencies and programs, as well as financial resources if you're eligible.

## **Tobacco Treatment Program**

212-610-0507

If you want to quit smoking, MSK has specialists who can help. Call for more information.

## **Virtual Programs**

[www.mskcc.org/vp](http://www.mskcc.org/vp)

MSK's Virtual Programs offer online education and support for patients and caregivers, even when you can't come to MSK in person. Through live, interactive sessions, you can learn about your diagnosis, what to expect during treatment, and how to prepare for the various stages of your cancer care. Sessions are confidential, free, and led by expert clinical staff. If you're interested in joining a Virtual Program, visit our website at [www.mskcc.org/vp](http://www.mskcc.org/vp) for more information.

For more online information, visit the Cancer Types section of [www.mskcc.org](http://www.mskcc.org)

## **External support services**

There are many other support services available to help you before, during, and after your cancer treatment. Some offer support groups and information, while others can help with transportation, lodging, and treatment costs.

Visit [www.mskcc.org/pe/external\\_support\\_services](http://www.mskcc.org/pe/external_support_services) for a list of these support services. You can also talk with an MSK social worker by calling 212-639-7020.



## Educational Resources

This section has the educational resources mentioned in this guide. These resources will help you get ready for your surgery and recover safely after surgery.

As you read through these resources, you can use space below to write down any questions you want to ask your healthcare provider.

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# About Your Recovery Tracker

This information explains your Recovery Tracker and how to use it.

## What is the Recovery Tracker?

After your surgery, you may have some pain or other symptoms. To help us care for you, we'll send a group of questions to your MyMSK account. These questions are known as your Recovery Tracker. Your responses to these questions will help us understand how you're feeling after your surgery.

## How do I use it?



Please visit [www.mskcc.org/pe/recovery\\_tracker\\_video](http://www.mskcc.org/pe/recovery_tracker_video) to watch this video.

- You must be signed up for MyMSK. You can access MyMSK at [my.mskcc.org](http://my.mskcc.org). If you're not sure if you signed up for MyMSK or if you don't remember how to use it, ask your healthcare provider or call 646-227-2593 for help.
  - If you don't have a MyMSK account, you can visit [my.mskcc.org](http://my.mskcc.org), call 646-227-2593, or call your doctor's office for an enrollment ID to sign up. You can also watch our video *How to Enroll in MyMSK: Memorial Sloan Kettering's Patient Portal* ([www.mskcc.org/pe/enroll\\_mymask](http://www.mskcc.org/pe/enroll_mymask)).
- After you leave the hospital, we'll send questions to your MyMSK account every day for 5 to 10 days.
- Make sure to answer the questions in your recovery tracker every day before midnight (12:00 AM). After midnight, the questions will be removed and you'll get new questions the next day.

- Answering the questions in your Recovery Tracker will only take you 2 to 3 minutes to complete. You can have your caregiver help you fill them out.

## What happens to the information I enter?

- Your responses will be sent to your MSK healthcare team. Based on your responses, someone may contact you or you may be told to call your surgeon's office to provide more information.
- Your information is secure. It will be stored at Memorial Sloan Kettering (MSK) and only your healthcare team will see it.



**If you need medical care right away, call 911 or go to your local emergency room.**

## Contact Information

If you have a question or concern, call your surgeon's office from 9:00 AM to 5:00 PM Monday through Friday. After 5:00 PM, during the weekend, or on holidays, call 212-639-2000 and ask for the doctor on call for your surgeon.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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About Your Recovery Tracker - Last updated on November 23, 2020

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## PATIENT & CAREGIVER EDUCATION

# How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil

This information will help you check if your medicines or dietary supplements have aspirin, other NSAIDs, vitamin E, or fish oil as an active ingredient. NSAID stands for nonsteroidal anti-inflammatory drug.

It's important to stop taking these medicines and supplements before many cancer treatments. They affect your platelets (blood cells that clot to prevent bleeding) and can raise your risk of bleeding.

Other dietary supplements, such as vitamins and herbal remedies, can also affect your cancer treatment. Read *Herbal Remedies and Cancer Treatment* ([www.mskcc.org/pe/herbal\\_remedies](http://www.mskcc.org/pe/herbal_remedies)) to learn more.

**Make sure your healthcare provider always knows all the prescription and over-the-counter medicines and supplements you're taking.** This includes patches and creams.

A prescription medicine is one you can only get with a prescription from your healthcare provider. An over-the-counter medicine is one you can buy without a prescription.

# What is an active ingredient?

An active ingredient is the part of a medicine or supplement that makes it work. Some medicines and supplements have just one active ingredient. Others have more. For example:

- Ibuprofen is the active ingredient in Advil® and Motrin®. Ibuprofen is an NSAID.
- Naproxen is the active ingredient in Aleve®. Naproxen is an NSAID.
- Acetaminophen is the active ingredient in Tylenol®.
- Aspirin, acetaminophen, and caffeine are the active ingredients in Excedrin®.

Generic medicines sometimes use their active ingredient as their name. But people often call medicines and supplements by a brand name, even if they're generic. This can make it hard to know their active ingredients.

## How to find a medicine or supplement's active ingredients

You can always find the active ingredients by reading the label.

### Over-the-counter medicines

Over-the-counter medicines list their active ingredients in the “Drug Facts” label (see Figure 1). Active ingredients are always the first thing on the Drug Facts label.

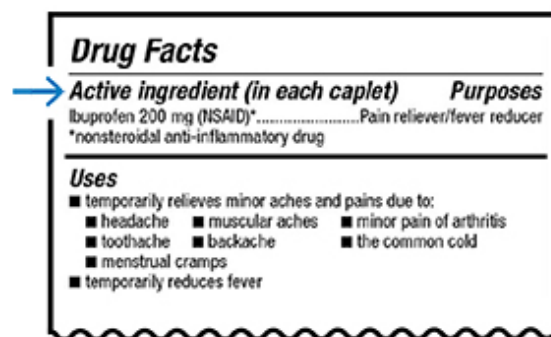


Figure 1. Active ingredients on an over-the-counter medicine label

## Prescription medicines

Prescription medicines list their active ingredients on the label. Their active ingredients and their generic name are the same thing.

Labels often look different depending on which pharmacy you use. Here's an example of where to find a medicine's active ingredients (generic name) on a label from MSK's pharmacy (see Figure 2).

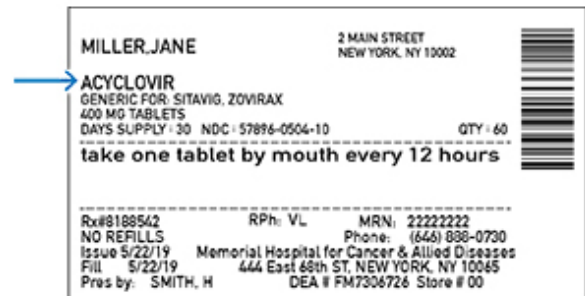


Figure 2. Active ingredients on a prescription medicine label

## Dietary supplements

Dietary supplements list their active ingredients in the "Supplement Facts" label (see Figure 3). The active ingredients always have an amount per serving and % daily value included.

	Amount Per Serving	% Daily Value
Vitamin A (as retinyl acetate and 50% as beta-carotene)	5000 IU	100%
Vitamin C (as ascorbic acid)	60 mg	100%
Vitamin D (as cholecalciferol)	400 IU	100%
Vitamin E (as di-alpha tocopheryl acetate)	30 IU	100%
Thiamin (as thiamin mononitrate)	1.5 mg	100%
Riboflavin	1.7 mg	100%
Niacin (as niacinamide)	20 mg	100%
Vitamin B <sub>6</sub> (as pyridoxine hydrochloride)	2.0 mg	100%
Folate (as folic acid)	400 mcg	100%
Vitamin B <sub>12</sub> (as cyanocobalamin)	6 mcg	100%
Biotin	30 mcg	10%
Pantothenic Acid (as calcium pantothenate)	10 mg	100%

Other ingredients: Gelatin, lactose, magnesium stearate, microcrystalline cellulose, FD&C Yellow No. 6, propylene glycol, propylparaben, and sodium benzoate.

Figure 3. Active ingredients on a supplement label

## Active ingredients to look for

If your medicine or supplement has any of these active ingredients, you may need to stop taking it before, during, or after your cancer treatment or surgery. Follow your care team's instructions.

Active ingredients to look for		
<ul style="list-style-type: none"><li>• Acetylsalicylic acid</li><li>• Alpha-linolenic acid (ALA)</li><li>• Aspirin</li><li>• Acetaminophen*</li><li>• Celecoxib</li><li>• Diclofenac</li><li>• Diflunisal</li><li>• Docosahexaenoic acid (DHA)</li><li>• Eicosapentaenoic acid (EPA)</li></ul>	<ul style="list-style-type: none"><li>• Etodolac</li><li>• Fish oil</li><li>• Fenoprofen Flurbiprofen</li><li>• Ibuprofen</li><li>• Indomethacin</li><li>• Ketoprofen</li><li>• Ketorolac</li><li>• Meclofenamate</li><li>• Mefenamic acid</li><li>• Meloxicam</li></ul>	<ul style="list-style-type: none"><li>• Nabumetone</li><li>• Naproxen</li><li>• Omega-3 fatty acids</li><li>• Omega-6 fatty acids</li><li>• Oxaprozin</li><li>• Piroxicam</li><li>• Sulindac</li><li>• Tolmetin</li><li>• Vitamin E</li></ul>

\* The full name acetaminophen isn't always written out. Look for the common abbreviations listed below, especially on prescription pain relievers.

Common abbreviations for acetaminophen		
<ul style="list-style-type: none"><li>• APAP</li><li>• Acetamin</li></ul>	<ul style="list-style-type: none"><li>• AC</li><li>• Acetam</li></ul>	<ul style="list-style-type: none"><li>• Acetaminop</li><li>• Acetaminoph</li></ul>

## About acetaminophen (Tylenol)

In general, acetaminophen is safe to take during cancer treatment. It doesn't affect platelets. That means it will not raise your chance of bleeding. If you're getting chemotherapy, talk with your healthcare provider before taking acetaminophen.

There is a limit to how much acetaminophen you can take in a day. Always follow the instructions from your care team or on the medicine's label.



Acetaminophen is in many different prescription and over-the-counter medicines. It's possible to take too much without knowing. **Always read the label on the medicines you take.** Do not take more than 1 medicine that has acetaminophen at a time without talking with a member of your care team.

## Instructions before your cancer treatment

Tell your healthcare provider if you take aspirin, other NSAIDs, vitamin E, or fish oil. They'll tell you if you need to stop taking it. You'll also find instructions in the information about your treatment.

### Before your surgery

Follow these instructions if you're having surgery or a surgical procedure. **If your healthcare provider gives you other instructions, follow those instead.**

- If you take aspirin or a medicine that has aspirin, you may need to change your dose or stop taking it 7 days before your surgery. Follow your healthcare provider's instructions. **Do not stop taking aspirin unless your healthcare provider tells you to.**
- If you take vitamin E, fish oil, or a supplement that has vitamin E or fish oil, stop taking it 7 days before your surgery or as directed by your healthcare provider.
- If you take an NSAID or a medicine that has an NSAID, stop taking it 48 hours (2 days) before your surgery or as directed by your healthcare provider.

## Before your radiology procedure

Follow these instructions if you're having a radiology procedure (including Interventional Radiology, Interventional Mammography, Breast Imaging, and General Radiology). **If your healthcare provider gives you other instructions, follow those instead.**

- If you take aspirin or a medicine that has aspirin, you may need to stop taking it 5 days before your procedure. Follow your healthcare provider's instructions. **Do not stop taking aspirin unless your healthcare provider tells you to.**
- If you take an NSAID or a medicine that has an NSAID, you may need to stop taking it 24 hours (1 day) before your procedure. Follow your healthcare provider's instructions.

## Before and during your chemotherapy

Chemotherapy can lower your platelet count, which can increase your risk of bleeding. No matter if you're just starting chemotherapy or have been getting it, talk with your healthcare provider before taking aspirin, other NSAIDs, vitamin E, or fish oil.

If you have any questions, contact a member of your care team directly. If you're a patient at MSK and you need to reach a provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil - Last updated on November 29, 2023

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## Eating Guide for Puréed and Mechanical Soft Diets

This information explains what you can eat while you're on a puréed or mechanical soft diet.

### About Puréed and Mechanical Soft Diets

You may have to follow a puréed or mechanical soft diet if you:

- Have trouble chewing or swallowing
- Had mouth surgery
- Have trouble moving or have lost feeling in parts of your mouth, such as your lips or tongue

If you're on a **puréed diet**, you will eat foods that you don't need to chew, such as mashed potatoes and pudding. You can also blend or strain other foods to make them smoother. Liquids, such as broth, milk, juice, or water may be added to foods to make them easier to swallow.

If you're on a **mechanical soft diet**, you will eat foods that require less chewing than on a regular diet. You can eat foods with different textures and thicknesses, including chopped, ground, and puréed foods.

For more information about what to eat on a puréed or mechanical diet, read the "Puréed or Mechanical Soft Diet Guidelines" section of this resource.

If you're eating less than usual or losing weight, call your dietitian.

If you don't know which diet is right for you, or have any questions, talk with your doctor or speech or swallowing specialist. You can also speak with a dietitian in the Department of Food and Nutrition by calling 212-639-7312.

### Guide for Good Nutrition

Eat foods that have all the nutrients your body needs to keep you healthy. Your body needs:

- Proteins
- Carbohydrates
- Fats
- Fiber
- Vitamins and minerals

Also, make sure that you drink plenty of liquids. Your goal should be to drink 8 (8-ounce) glasses of water a day. However, talk with your doctor or dietitian to find out if drinking more or less liquid would be right for you.

### Protein

Protein helps your body build tissue and heal after surgery. Foods rich in protein include:

- Meat
- Fish
- Poultry (chicken, turkey)
- Milk, including dairy milk, or powdered milk
- Cheese

- Yogurt (especially Greek yogurt)
- Eggs and egg whites
- Beans and bean purée
- Nuts and nut butters
- Soy products, such as soy milk, tofu, and edamame (soy beans)
- Protein powders
- Liquid nutritional supplements, such as Ensure®, Ensure Plus®, Boost®, or Boost Plus®

## Carbohydrates

Carbohydrates are starches and sugars. They should make up at least half of the calories you eat. Most of the carbohydrates in your diet should come from:

- Starchy vegetables (potatoes, green peas, squash)
- Whole grains (oatmeal, brown rice)
- Cereals
- Breads
- Pasta

## Fat

Fat is the most concentrated source of calories. For example, 1 teaspoon of oil has 45 calories while 1 teaspoon of sugar has 20 calories. Some fat in our diets is necessary and healthy. Fats are in:

- Meats
- Dairy
- Coconut and canned coconut milk or cream
- Nuts and nut butters
- Seeds
- Vegetable oils
- Avocados
- Olives
- Fried and sautéed foods
- Baked goods

Some fats are healthier for you than others. Unsaturated fats are healthier for you than saturated fats.

Unsaturated fats are found in:

- Olive oil
- Canola oil
- Peanut oil
- Fish oil
- Avocado

Saturated fats are found in:

- Meat
- Full-fat dairy products (whole milk, cheeses, heavy cream, cream cheese)
- Butter
- Coconut and coconut products, such as coconut oil
- Palm oil

Eating too much fat can make you gain weight. If your goal is to gain weight, try to eat healthier (unsaturated) fats. If you're trying to lose weight, or are already at a healthy weight, choose low-fat foods when planning your meals.

## Fiber

There are 2 kinds of fiber: soluble and insoluble. Soluble fiber is found in barley, oats, and in skinless fresh fruits. Soluble fiber can help make your bowel movements softer and slow your digestion.

Insoluble fiber is found in the skins of fruits and vegetables, legumes (beans, lentils), seeds, and whole grains. It's not broken down in your intestines and adds bulk to your bowel movements (stool). This can help you have more regular bowel movements. Even if fruits and vegetables are blended or juiced, the fiber is still there if the pulp hasn't been removed.

It's important to get enough of both kinds of fiber.

For more information about managing constipation, read the "Managing Symptoms and Side Effects Through Nutrition" section of *Eating Well During and After Your Cancer Treatment*.

## Vitamins and minerals

Vitamins and minerals are found in all foods in different amounts. People who eat a well-balanced diet will most likely not need a vitamin supplement. Talk with your doctor if you're thinking about taking a supplement.

## Lactose

Lactose is a sugar found in milk and milk products, such as yogurt, cheese, and ice cream. Many people have trouble digesting lactose, which is called lactose intolerance. This may cause gas, cramping, or diarrhea (loose or watery bowel movements).

If this is a problem for you, you may want to try dairy products that have little or no lactose. You can look for low-lactose or lactose-free milk and cheese products in your supermarket's dairy section. Lactaid® is a brand that has several of these products.

Many people are able to get nutrients from dairy products by eating cheese or yogurt. These foods have less lactose than milk or ice cream. You can also try the following non-dairy, lactose-free foods and beverages:

- Rice milk or cheese
- Soy products, such as soy milk, cheese, and yogurt
- Almond products, such as almond milk, cheese, or yogurt
- Tofu

## Puréed or Mechanical Soft Diet Guidelines

Here are some foods to include and avoid while you're on a puréed or mechanical soft diet.

### Puréed diet

Type of Food	Include	Avoid
<b>Milk and Dairy Products</b>	<ul style="list-style-type: none"> <li>• Milk, smooth yogurt (plain or without fruit pieces), buttermilk, evaporated or condensed milk, milkshakes, and malts</li> <li>• Puréed cottage cheese, thin ricotta cheese, mild or processed cheeses melted into a sauce</li> <li>• Ice cream and frozen yogurt</li> <li>• Liquid nutritional supplements, such as Ensure or Carnation Breakfast Essentials</li> <li>• Smoothies made with bananas, peaches, or sorbets</li> </ul>	<ul style="list-style-type: none"> <li>• Solid cheeses, regular cottage cheese, farmer cheese, and pot cheese</li> </ul>
<b>Vegetables</b>	<ul style="list-style-type: none"> <li>• Vegetable juices like V8 or tomato juice, puréed cooked vegetables, and baby food vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• All others, even well-cooked vegetables that don't require a lot of chewing</li> </ul>
<b>Fruits</b>	<ul style="list-style-type: none"> <li>• Fruit juices and nectars (without pulp)</li> <li>• Smooth applesauce, puréed fruits, baby food fruit</li> </ul>	<ul style="list-style-type: none"> <li>• All others, including mashed banana and canned fruits</li> </ul>
<b>Starches</b>	<ul style="list-style-type: none"> <li>• Cooked cereals, Cream of Wheat®, Farina®, Cream of Rice®</li> <li>• Smooth or blended oatmeal, baby oatmeal, or baby cereal</li> <li>• Hominy grits</li> <li>• Whipped or smooth mashed potatoes</li> <li>• Puréed pasta, puréed rice</li> </ul>	<ul style="list-style-type: none"> <li>• All others</li> </ul>
<b>Meat or Meat Substitutes</b>	<ul style="list-style-type: none"> <li>• Strained or puréed meat, fish, and poultry</li> <li>• Smooth chicken, tuna, and egg salad (no celery or onion)</li> <li>• Soufflés, hummus, and puréed beans</li> </ul>	<ul style="list-style-type: none"> <li>• All others, including scrambled, fried, poached, hard-boiled, and soft-boiled eggs</li> </ul>
<b>Fats</b>	<ul style="list-style-type: none"> <li>• Butter, margarine, sour cream, cooking fats and oils, and gravies</li> <li>• Whipped toppings and heavy cream</li> <li>• Mashed or blended avocado with puréed foods items</li> </ul>	<ul style="list-style-type: none"> <li>• All others</li> </ul>
<b>Soups</b>	<ul style="list-style-type: none"> <li>• Broth and bouillon</li> <li>• Soups with puréed or strained vegetables</li> <li>• Strained or puréed cream soups</li> <li>• Puréed chicken noodle or chicken and rice soup</li> </ul>	<ul style="list-style-type: none"> <li>• All others</li> </ul>

Type of Food	Include	Avoid
<b>Sweets and Desserts</b>	<ul style="list-style-type: none"> <li>• Smooth custards and puddings</li> <li>• Sherbet, ice cream, and frozen yogurt</li> <li>• Flavored fruit ices, popsicles, fruit whips, flavored gelatins</li> <li>• Clear jelly, honey, sugar, and sugar substitutes</li> <li>• All syrups (such as chocolate syrup and maple syrup)</li> <li>• Mousse</li> </ul>	<ul style="list-style-type: none"> <li>• All others, including anything made with coconuts, nuts, or whole fruits</li> </ul>
<b>Beverages</b>	<ul style="list-style-type: none"> <li>• All beverages</li> </ul>	<ul style="list-style-type: none"> <li>• Any containing raw eggs</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>• Salt, pepper, ketchup, mustard, and mayonnaise</li> <li>• Herbs and spices</li> <li>• Liquid sauces, such as barbeque or teriyaki sauce</li> </ul>	<ul style="list-style-type: none"> <li>• Nuts</li> <li>• Coconuts</li> <li>• Olives</li> <li>• Pickles</li> <li>• Seeds</li> </ul> <p>* Do not eat spicy or acidic foods if you have mouth sores.</p>

### Sample menu for a puréed diet

Here are some examples of puréed diet options for each meal of the day. If you need help planning your meals, call the Department of Food and Nutrition to speak with a dietitian.

Meal or Snack	Puréed Diet
<b>Breakfast</b>	<ul style="list-style-type: none"> <li>• Fruit juice without pulp</li> <li>• Puréed banana</li> <li>• Cooked cereal with milk</li> <li>• Puréed cooked egg</li> <li>• Milk</li> <li>• Coffee or tea</li> </ul>
<b>Mid-morning snack</b>	<ul style="list-style-type: none"> <li>• Vanilla or flavored yogurt</li> </ul>
<b>Lunch</b>	<ul style="list-style-type: none"> <li>• Any puréed or strained soup</li> <li>• Puréed chicken salad</li> <li>• Puréed green beans</li> <li>• Puréed fruit</li> <li>• Puréed rice</li> <li>• Tea with sugar</li> </ul>
<b>Mid-afternoon snack</b>	<ul style="list-style-type: none"> <li>• Ensure plus</li> </ul>
<b>Dinner</b>	<ul style="list-style-type: none"> <li>• Puréed or strained soup</li> <li>• Puréed meat or fish</li> <li>• Mashed potato</li> <li>• Puréed vegetables with olive oil or butter</li> <li>• Applesauce</li> </ul>
<b>Evening Snack</b>	<ul style="list-style-type: none"> <li>• Vanilla Pudding</li> </ul>

## Mechanical soft diet

You should moisten the following mechanical foods with a sauce, gravy or condiments.

Type of Food	Include	Avoid
<b>Milk and Dairy Products</b>	<ul style="list-style-type: none"> <li>• Milk, buttermilk, eggnog, yogurt (plain and with fruit), milkshakes, evaporated and condensed milk, and malts</li> <li>• Cottage cheese, soft cheeses (such as ricotta or farmer), pot cheese sauces, and grated and shredded cheeses</li> <li>• Ice cream and frozen yogurt</li> <li>• Liquid nutritional supplements, such as Ensure or Carnation Breakfast Essentials</li> </ul>	<ul style="list-style-type: none"> <li>• Hard cheeses and cheeses that have nuts and seeds in them.</li> </ul>
<b>Vegetables</b>	<ul style="list-style-type: none"> <li>• Any well-cooked, diced vegetables, such as carrots, peas, green beans, beets, butternut or acorn squash, and wax beans moistened with a sauce or oil</li> <li>• Chopped or creamed spinach</li> <li>• Puréed vegetables</li> <li>• Baby food vegetables</li> <li>• Vegetable juices, such as V8 and tomato juice</li> </ul>	<ul style="list-style-type: none"> <li>• Raw vegetables</li> <li>• Stir-fried vegetables</li> <li>• Fried vegetables</li> <li>• Lettuce</li> </ul>
<b>Fruits</b>	<ul style="list-style-type: none"> <li>• Ripe bananas</li> <li>• Any canned fruits</li> <li>• Any cooked fruits (without the skins), mashed or diced into small pieces</li> <li>• Applesauce, puréed fruits, and baby food fruits</li> <li>• Nectars and fruit juices</li> </ul>	<ul style="list-style-type: none"> <li>• Fresh fruits</li> <li>• Fruit skins</li> <li>• Fruits with pits</li> <li>• Dried fruits</li> </ul>
<b>Starches</b>	<ul style="list-style-type: none"> <li>• Any diced soft breads, such as soft rolls, muffins, soft French toast, and pancakes – moisten these with butter and syrup</li> <li>• Dry cereal soaked in a small amount of milk</li> <li>• White or brown rice with a sauce or gravy</li> <li>• Casseroles</li> <li>• Cooked cereals, Cream of Wheat, Farina, Cream of Rice, oatmeal, hominy grits, and couscous</li> <li>• Diced soft pastas or noodles, pasta salad, pastina, orecchiette, macaroni and cheese, and diced ravioli or tortellini</li> <li>• Soft whole grains (such as barley, farro) moistened with sauce or gravy</li> <li>• Mashed, baked, or creamed potatoes, and sweet potatoes</li> </ul>	<ul style="list-style-type: none"> <li>• Rye-crisps, dry crackers, popcorn, taco shells, and Melba toasts</li> <li>• Breads and muffins with seeds or nuts, pita bread, rye and pumpernickel breads, bagels, French or sourdough breads, and toast</li> <li>• Chow mein noodles</li> <li>• Any cakes or breads made with nuts, seeds, raisins, or dates</li> <li>• Kasha (buckwheat), wild rice, shredded wheat, and granola</li> <li>• Hash browns, fried potatoes, potato skins, and French fries</li> </ul>



Type of Food	Include	Avoid
<b>Meat or Meat Substitutes</b>	<ul style="list-style-type: none"> <li>• Ground, finely chopped tender meat or poultry with sauce or gravy</li> <li>• Soft chicken salad, creamed tuna salad (without celery), and egg salad (without celery)</li> <li>• Diced meat loaf, meatballs, salmon loaf, and croquettes</li> <li>• Casseroles</li> <li>• Diced baked or broiled fish (fillet of sole, roughy, flounder, and salmon)</li> <li>• Well-cooked beans and tofu</li> <li>• Scrambled eggs or diced hard-cooked eggs</li> <li>• Cheese quiche without the crust</li> </ul>	<ul style="list-style-type: none"> <li>• Whole cuts or diced meat or poultry</li> <li>• Hot dogs, sausage, knockwurst, bratwurst, pork chops, steak, and bacon</li> <li>• Fried fish</li> <li>• Haddock, halibut, and tuna</li> <li>• Shellfish</li> <li>• Chili with beans</li> </ul>
<b>Fats</b>	<ul style="list-style-type: none"> <li>• Butter, margarine, and cooking fats and oils</li> <li>• Gravy, whipped toppings, salad dressings, and mayonnaise</li> <li>• Finely chopped olives</li> <li>• Avocado</li> <li>• Creamy nut butters</li> </ul>	<ul style="list-style-type: none"> <li>• Nuts (such as almonds, cashews, peanuts, and pecans)</li> <li>• Seeds</li> <li>• Coconuts</li> <li>• Whole olives</li> <li>• Crunchy nut butters</li> </ul>
<b>Soups</b>	<ul style="list-style-type: none"> <li>• Broth and bouillon</li> <li>• Soups with puréed or strained vegetables</li> <li>• Strained or puréed cream soups</li> <li>• Diced chicken noodle soup</li> </ul>	<ul style="list-style-type: none"> <li>• Any soups with chunks of meat or crunchy vegetables</li> </ul>
<b>Sweets and Desserts</b>	<ul style="list-style-type: none"> <li>• Seedless jellies, honey, sugar, sugar substitutes, and syrup</li> <li>• Ice cream, frozen yogurt, puddings, and custards</li> <li>• Pies (without crust), pastries, and cakes without seeds, nuts, or dried fruits moistened with a milk or seedless jelly</li> <li>• Diced soft cookies moistened with milk</li> <li>• Mousse</li> </ul>	<ul style="list-style-type: none"> <li>• Any sweets and desserts with coconut, nuts, or dried fruits</li> <li>• Granola bars</li> <li>• Pies with crust</li> <li>• Chewy, crunchy, or hard candy</li> <li>• Jelly or jam with seeds</li> <li>• Crunchy cookies</li> <li>• Licorice, taffy, and caramel</li> </ul>
<b>Drinks</b>	<ul style="list-style-type: none"> <li>• Water, coffee, tea, carbonated drinks, hot cocoa, fruit punch, and coconut water</li> <li>• Gatorade®, Pedialyte®, Isopure® lemonade without pulp</li> </ul>	<ul style="list-style-type: none"> <li>• Any drink with raw eggs</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>• Salt, pepper, ketchup, mustard, and mayonnaise</li> <li>• Herbs and spices</li> <li>• Jelly</li> </ul>	<p>* Do not eat spicy or acidic foods if you have mouth sores.</p>

## Sample menu for a mechanical soft diet

Here are some examples of meals you can have when you're on a mechanical soft diet. If you need help planning your meals, call the Department of Food and Nutrition to speak with a dietitian.

Meal or Snack	Mechanical Soft Diet
<b>Breakfast</b>	<ul style="list-style-type: none"><li>• Soft, diced peaches</li><li>• Cereal softened in milk</li><li>• Diced, soft pancakes with syrup and butter</li><li>• Scrambled eggs</li><li>• A soft butter roll cut into small pieces</li></ul>
<b>Mid-morning snack</b>	<ul style="list-style-type: none"><li>• Yogurt</li></ul>
<b>Lunch</b>	<ul style="list-style-type: none"><li>• Vegetable barley soup</li><li>• Chicken salad or egg salad</li><li>• Diced, well-cooked spinach</li><li>• Canned fruit cocktail</li></ul>
<b>Mid-afternoon snack</b>	<ul style="list-style-type: none"><li>• Ensure plus</li></ul>
<b>Dinner</b>	<ul style="list-style-type: none"><li>• Soup</li><li>• Baked fish filet (boneless) with sauce</li><li>• Diced, soft potatoes</li><li>• Diced, well-cooked broccoli with olive oil or butter</li><li>• Canned, diced pears</li></ul>
<b>Evening Snack</b>	<ul style="list-style-type: none"><li>• Rice Pudding</li></ul>

## Planning Your Meals

Changing your eating habits can be hard. It's best to plan ahead for meals. This can help make sure you have enough of the right foods to eat at mealtimes. Here are some questions to think about when planning your meals:

- Where will you be eating? (At home, a restaurant, work, someone else's house)
- If you're eating at a restaurant, can you call ahead and request special meals?
- Will you have a kitchen and refrigerator available? Can you boil water? Can you microwave? Can you use a blender or food processor?
- Can you carry a thermos with food already prepared and ready to eat?

## Eating at home with family and friends

Most foods can be changed to meet your needs. For example, a portion of soup can be put aside, then strained or blended.

Many main dishes, such as noodles, stews, and casseroles, can be put into a blender with some liquid. You can use milk, gravy, tomato sauce, broth, juice, or water. Add liquid until the food is the right consistency.

## Kitchen items to help prepare foods

Here are some items that you may find helpful to prepare your foods at home:

**Blender:** You can use a blender for all types of foods including meats, vegetables and fruits, but you may have to add liquid to make the food the right texture. Blenders are great for soups and shakes. However, they're not always the best to use for making 1 portion.

**The Magic Bullet® and Nutribullet®:** These are small blenders that don't take up a lot of space. The Vitamix® and Ninja® are other powerful blenders that can purée a variety of foods.

**Hand-held blender:** You can use a hand-held blender to quickly purée your favorite soups right in the pot. It can also be used to soften well-cooked foods in a small bowl for 1 or 2 portions.

**Food processor:** Food processors are useful for shredding, slicing, chopping, or blending foods. It comes in different sizes. If you often prepare just 1 portion of food, buy a small processor.

**Household mesh strainer or sieve:** You can use this to strain fruits and vegetables, but not meats. They are inexpensive, good to make 1 portion, and don't need electricity. However, this method can be slow.

**Baby-food grinder:** This item can often be found in stores that sell baby clothes or furniture. They are good for all foods and require no liquid. The small ones are ideal for grinding 1 portion of food. They can be hand or battery-operated.

However, when using a baby-food grinder, food may not come out as smooth as some people may need. Ask your dietitian, doctor, or speech or swallowing therapist if it's right for you.

## Eating Out

Eat at restaurants that offer a variety of foods and that will cater to people on special diets. Many places will purée or prepare foods for your needs. Call ahead and speak to a manager or chef. You may be surprised at how helpful they will be. You may also want to order sides of broth, gravy, or milk to moisten your foods.

Here are some ideas of things you can order. Some of these may need to be mashed or blended for the puréed diet:

### **Breakfast**

- Fruit and vegetable juices
- Fruits
- Hot cereal
- Cold cereal softened in milk (for mechanical soft diets)
- Scrambled eggs or chopped, hard-boiled eggs for mechanical soft diets
- Soft breads, such as muffins and pancakes, soaked in liquid to soften them for mechanical soft diets
- Coffee, tea, or hot chocolate

### **Lunch and dinner**

- Fruit and vegetable juices
- Soups, which can be easily blended or strained in the restaurant. Egg drop soup is a good source of protein

### **Main dishes**

- Ground meat products, such as hamburger patties, meatloaf, and meatballs
- Soft, flaky fish (such as fillet of sole, flounder, or tilapia) steamed, baked, or broiled
- Noodles and macaroni dishes, blended for puréed diets
- Soufflés
- Cottage cheese and soft fruit platters
- Sandwiches, such as tuna or egg salad on soft bread

### **Vegetables**

- Baked or mashed potatoes
- Any soft cooked vegetables, such as cooked carrots
- Creamed spinach
- Vegetable soufflé
- Guacamole (some may be spicy)
- Hummus

### **Desserts**

- Ice cream or frozen yogurt
- Gelatin desserts
- Milkshakes
- Mousse
- Puddings and custards
- Applesauce or other soft fruits
- Fruit sorbets

It's also possible to eat away from home, such as at work or at a friend's house. Here are some tips for taking food with you while you're away from home:

- Bring a food grinder or small food processor. If electricity is needed, make sure it's available where you're going.
- Buy a thermos. Make soup or hot cereal and carry it with you.
- Ask if there is a microwave where you're going. You can make food at home and freeze it in portion-sized, microwave-safe containers or Zip-Loc® bags. Bring the food with you in an insulated pack and heat it when you want to eat.

- Freeze soups or puréed foods in ice cube trays. Cover the tray with foil or plastic wrap to prevent freezer burn. When you're hungry, use 2 or 3 cubes for a small meal or snack, or more cubes for a larger meal.
- Fruit ices

## Your Caloric Needs

Your caloric needs are the number of calories you need every day to maintain your weight. You get calories from food and drinks. Eating the number of calories your body needs can help you maintain your weight.

You can adjust the amount of calories you eat in order to reach your weight goal:

- If you need to gain weight, you can increase the number of calories you eat or drink.
- If you need to lose weight, you can decrease the number of calories you eat or drink.

Each person has needs a different number of calories. This is based on:

- Age
- Sex
- Height and weight
- Level of physical activity

Generally, people who are older or less active need fewer calories. Your doctor and dietitian can help you find out how many calories you need every day

The easiest way to check if you're eating enough is to weigh yourself. Try to weigh yourself twice a week and write down how much you weigh. This will help you keep track of your weight loss or gain.

## Tips for adding more calories to your diet

If you need to eat more calories, here are some easy tips:

- Eat small meals 6 to 8 times a day instead of 3 main meals.
- Add 2 to 4 tablespoons of canned coconut milk or cream to smoothies, shakes, cereals, or yogurts for extra calories. You can also add it to rice or diced chicken for extra calories, flavor, and moisture.
- Choose creamy soups rather than soups with clear broths.
- Have puddings and custards rather than gelatin desserts, such as Jell-O®.
- Add sauces, gravies, or extra vegetable oil to your meals.
- Drink apricot, pear, or peach fruit nectars. They are less acidic than other nectars.
- Drink fruit shakes or fruit smoothies made with yogurt or ice cream.
- Make ice cubes from milk or fruit nectar. Use these high-calorie ice cubes in smoothies or to keep your shakes cold. As they melt, they will add calories to your beverages.
- Drink high-calorie drinks, such as milkshakes, soy milkshakes, or pasteurized eggnog.
- Drink a liquid nutritional supplement, such as Ensure or Boost, instead of milk to make a nutritious, high-calorie milkshake.
- Add honey to smoothies, tea, yogurt, hot cereals, shakes, or ice cream.
- If you aren't on a low-fat diet, add sour cream, half and half, heavy cream, or whole milk to your foods. You can add it to mashed potatoes, sauces, gravies, cereals, soups, and casseroles.
- Add mayonnaise to your eggs, chicken, tuna, pasta, or potatoes to make a smooth, moist salad.

- Add avocado to dishes or smoothies.
- Add nut butters, such as peanut butter, to shakes and smoothies.

## Tips for adding more protein to your diet

If you need to increase the amount of protein in your diet, here are some easy tips:

- Add tofu to cooked vegetables, soups, smoothies, or in place of chicken or meat if you're having difficulty eating animal proteins.
- Add cooked eggs to your soups, broths, and cooked vegetables. Purée the cooked eggs, if needed.
- Use plain Greek yogurt in smoothies, cream sauces, or wherever you would use sour cream.
- Use a plain protein powder, such as a whey protein powder, in liquids and shakes.
- Add cheese (shredded or grated) to your soups, cooked eggs, vegetables, and starches.
  - For example, adding full-fat ricotta cheese can moisten a dish and add calories and protein. Add cottage cheese to smoothies, purées, or canned fruits.
- Use fortified milk (see recipe in the “Recipes” section) rather than regular milk to double the amount of protein in it. Use this milk in shakes, hot cereals, mashed potatoes, hot chocolate, or with instant puddings to create a high-protein, high-calorie dessert. You can also add non-fat dried milk powder alone to purées and smoothies to add more calories and protein.
- Grind some nuts with a coffee grinder and add to them to your smoothies, hot cereals, puddings, or yogurts.

## Liquid nutritional supplements

If you can't make your own shakes, there are many nutritional supplements that you can buy. Some are high calorie, ready-prepared drinks that have vitamins and minerals added to them. Others are powders that you can mix into other foods or drinks. Most are also lactose-free, which means that you can have them even if you're lactose intolerant.

Check your local market or drug store to see if they carry any of the brands below. You can also order them online for home delivery.

Liquid Nutritional Supplement	Calories	Protein (g)	Water (mL)	Lactose Free
Ensure (8 ounces)	220	9	196	Yes
Ensure Active Clear™ (10 ounces)	180	9	274	Yes
Ensure Plus™ (8 ounces)	350	13	180	Yes
Ensure Enlive (8 ounces)	350	20	180	Yes
Ensure Compact (4 ounces)	220	9	85	Yes
Ensure Pudding (4 ounces)	170	10	NA	Yes
Glucerna® (8 ounces)	200	10	200	Yes
Boost (8 ounces)	240	10	200	Yes
Boost Plus (8 ounces)	360	16	185	Yes
Boost Compact (4 ounces)	240	10	87	Yes

Liquid Nutritional Supplement	Calories	Protein (g)	Water (mL)	Lactose Free
Boost Glucose Control® (8 ounces)	190	16	200	Yes
Boost Nutritional Pudding (5 ounces)	240	7	93	Yes
Carnation Breakfast Essentials® Powder (1 packet)	130	5	NA	No
Carnation Breakfast Essentials Ready-to-Drink (11 ounces)	250	14	285	No
Boost VHC (8 ounces)	530	22.5	168	Yes
Scandishake® (1 packet)	440	5	NA	No
Scandishake Lactose Free (1 packet)	430	8	NA	Yes
Resource® Boost Breeze (8 ounces)	250	9	196	Yes
Resource Benecalorie® (1.5 ounces)	330	7	NA	Yes
Resource Beneprotein® Instant Protein Powder (7 grams)	25	6	NA	Yes

## Managing Treatment Side Effects

During and after chemotherapy and radiation therapy, some people have side effects that make it hard to eat. Here are some tips to help you manage these side effects.

### Taste changes

Food may taste different during and after chemotherapy or radiation therapy. In the weeks after finishing chemotherapy, your taste should slowly go back to normal. It may take a little longer for your taste to come back after radiation therapy.

Try some of these tips to deal with taste changes:

- Try different foods. You might find a new food that you like.
- Retry foods every week or 2 to see if the taste has returned.
- Eat fish, eggs, cheese, or milk instead of meat. These may taste better.
- Try different seasonings, including herbs and spices. Use salt if you aren't on a low-salt diet.
- Adjust the sugar levels in the food to your taste.
- If the food you're eating tastes metallic, use plastic utensils or glassware for cooking.
- Try cold foods or foods at room temperature.
- Marinate your foods in fruit nectars, duck sauce, or citrus juice.
- Take care of your mouth. Brush your teeth and tongue when you wake up, after each meal, and at bedtime.

### Sore mouth

People who have had chemotherapy or radiation may have a sore mouth. If this is a problem for you, try the following:

- Eat mild foods, such as milks, custards, or puddings.

- Ask your doctor for a mouth spray to control pain while you eat.
- Do not eat foods that are:
  - Acidic, such as orange juice and tomato sauce.
  - Spicy
  - Salty
  - Too hot
  - Too cold
- Liquid or soft foods, such as soufflés or casseroles, may be easier to swallow than solid foods. Try foods with different textures to see what feels best.

## Dry mouth

Eating can be hard when your mouth is dry and doesn't make enough saliva. Try these tips:

- Choose soft, moist foods.
- Add gravies, sauces, applesauce, or other liquids to your foods. Have a spoonful of warm soup, or other liquid, between mouthfuls of food.
- Try foods made with gelatin, such as mousses. They slide down the throat more easily.
- Always carry a bottle of water with you. You can also try carrying a small, clean spray bottle filled with water. Spray water in your mouth throughout the day to keep it moist.
- Try eating sugar-free mints or sugar-free gum to make more saliva.
- If you're having trouble maintaining your weight, drink liquids that have calories instead of water, such as fruit juices, fruit nectars, and liquid nutritional supplements (Ensure).

## Call Your Doctor if You:

- Are coughing a lot during meals
- Get food stuck in your mouth or throat
- Have trouble breathing
- Have a lot of phlegm

## Recipes

Many of these recipes came from people who were on these diets. We hope they are helpful.

For additional recipes, tips, and ideas, check out the book *Eat Well Stay Nourished*. It was written by Support for People with Oral and Head and Neck Cancer (SPOHNC). You can order it online at [www.spoync.org/recipe\\_resource\\_guide.php](http://www.spoync.org/recipe_resource_guide.php) or by calling 800-377-0928.



## Drinks

These are good drink options if you want to increase your calories. Try various fruits and juices.

---

### Fortified milk

Use this recipe to increase the calorie and protein content of a glass of milk. Also, use it as a substitute for milk in your favorite recipes for soups or custards.

#### Ingredients

- 1 cup of non-fat dried milk powder
- 1 quart of skim or 1% milk (use whole milk if you need extra calories)

#### Recipe

1. Combine all the ingredients.
2. Stir well.

You can store any leftover fortified milk in your refrigerator.

---

### Milkshake

#### Ingredients

- 1 cup of milk
- 1 cup of ice cream or frozen yogurt

#### Recipe

1. Put all the ingredients in a blender.
2. Blend well.

You can also add malted milk powder, syrups, nut butters, or fruits. Try other flavors and consistencies you may enjoy.

---

### Choco-Banana Swirl

#### Ingredients

- $\frac{2}{3}$  cup of vanilla yogurt
- $\frac{2}{3}$  cup of vanilla ice cream or frozen yogurt
- $\frac{1}{4}$  cup of chilled and sliced ripe banana (about half of a medium banana)
- 2 teaspoons of chocolate-flavored syrup

#### Recipe

1. Put all the ingredients in a blender.
2. Blend until the mixture is smooth.

---

### Fruit Smoothie

#### Ingredients

- $\frac{2}{3}$  cup of vanilla yogurt
- $\frac{1}{2}$  cup of fruit nectar
- $\frac{2}{3}$  cup of chilled or frozen fruit of your choice
- 1 tablespoon of honey
- 4 ice cubes

#### Recipe

1. Put all the ingredients in a blender.
2. Blend until the mixture is smooth.

---

### Blender Breakfast

This drink is easy to make and is full of calcium, vitamins, and fiber.

#### Ingredients

- 1 banana, peach, or nectarine, peeled and cut into chunks
- $\frac{1}{2}$  cup of milk or fortified milk (you can also use  $\frac{1}{2}$  cup of low-fat yogurt instead)
- 1 teaspoon of sugar or honey
- 1 tablespoon of natural bran

#### Recipe

1. Put all the ingredients in a blender.
2. Blend until the mixture is smooth.
3. Pour into a tall glass.

## Sauces

Use these sauces to moisten your foods and make them more tasty. Some are used in other recipes in this resource.

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### Basic White Sauce

#### Ingredients

- 1 cup of skim, 1%, whole, or fortified milk
- 2 tablespoons of any kind of oil or butter
- 2 to 3 tablespoons of flour

#### Recipe

1. Mix the flour and oil or butter in a saucepan.
2. Cook over low heat, stirring constantly until the mixture is smooth and bubbly.
3. Remove from heat.
4. Stir in the milk.
5. Boil for 1 minute, stirring constantly.
6. After a few minutes, it will begin to thicken. The more flour you add, the thicker the sauce will be.

You can also make a basic brown sauce, use  $\frac{2}{3}$  cup of low-sodium beef or chicken broth instead of milk.

## Soups

Eating soup is a good way to get more liquid and vegetables in your diet. Try some of these recipes or change the ingredients to make it right for you.

If you're on a puréed diet, you must put the soup through a blender or strainer. People on a mechanical soft diet can tolerate some of these soups without having to blend them.

---

### Creamy Soup

This is a recipe for a basic creamy soup. Add whichever vegetables and spices you like.

#### Ingredients

- 1 cup of cooked Basic White Sauce (see recipe above)
- $\frac{1}{2}$  cup of puréed vegetables or baby food vegetables
- Salt and pepper to taste

Follow the recipe for Basic White Sauce. Mix in the puréed vegetables. Add salt and butter to taste.

You can also try adding other cooked or puréed vegetables, such as green beans, carrots, broccoli, squash, peas, mushrooms, or asparagus. Try adding dill, garlic, thyme, onion, or celery.

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### Vegetarian Creamy Tofu Soup

#### Ingredients

- 2 ounces of tofu
- 8 ounces of creamy soup (see recipe above)

#### Recipe

1. Put all the ingredients in a blender.
2. Blend until the mixture is smooth.

---

### Avocado Soup

#### Ingredients

- 1 ripe, medium avocado (flesh only)
- 1 small onion, cut up
- $\frac{1}{2}$  teaspoon of salt
- 3 cups of chicken or vegetable broth
- 1 cup of yogurt
- 3 tablespoons of lemon juice (strained, if fresh)

Purée the avocado and onion with 1 cup of broth. Add the salt, remaining broth, and lemon juice, and mix for a few seconds. Then add the yogurt and sour cream and blend until smooth. Serve cold.

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## Spa Vegetable Soup

This is an easy way to make vegetable soup. You can change the vegetables as much as you like.

### Ingredients

- 3 cups of chicken or vegetable broth
- 1 carrot, sliced
- 1 cup of broccoli florets
- 1 cup of cauliflower florets
- ½ cup of red cabbage, thinly sliced (or try spinach)
- 1 green onion, thinly sliced
- Salt and pepper to taste

### Recipe

1. In a saucepan, bring the broth to a boil.
2. Add the carrot and simmer for 20 minutes.
3. Add the remaining vegetables and simmer until completely cooked through.
4. Place in a blender and purée.
5. Season with salt and pepper to taste.

You can also:

- Add other herbs and spices, as you want.
- Try adding tofu chunks to increase the amount of protein.
- Drizzle some olive oil into the soup as you purée it for extra calories.

## Cereals

Try these recipes for a healthy start to your day.

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### Cooked Cereals

- When making instant hot cereals, use milk instead of water to provide more nutrients and calories. You can use skim, 1%, whole, soy, almond, rice, or fortified milk. Some people also add heavy cream or half and half for extra calories.
- Add applesauce, puréed banana, cinnamon, honey, yogurt, nut butters, or brown sugar and blend.

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## High-protein Oatmeal

### Ingredients

- 1 cup of cooked oatmeal, prepared as instructed on the package
- ½ cup of fortified milk
- 2 teaspoons of sugar, honey, or brown sugar
- 1 small jar of baby food bananas
- Cinnamon to taste (optional)

Mix all the ingredients together and serve hot.

---

## Soufflé

This is appropriate for a puréed or mechanical soft diet.

### Ingredients

- ¼ cup of butter
- ¼ cup of flour
- 1 ½ cup of milk or fortified milk
- ¼ teaspoon of salt
- ½ teaspoon of Worcestershire sauce (optional)
- 4 eggs, separated (yolks and whites in different bowls)
- ½ pound of low-fat cheddar cheese

### Recipe

1. Preheat the oven to 350° F.
2. Melt the butter in a saucepan.
3. Stir in the flour until it's well blended.
4. Remove from heat.
5. Add the milk and cook until thickened.
6. Turn off the heat.
7. Add the cheese and stir until melted.
8. Let the mixture cool
9. Beat in the egg yolks one at a time.
10. In a separate bowl, whip the egg whites until they're stiff.
11. Fold (mix gently, in small amounts at a time) the whipped egg whites into the sauce.
12. Pour the mixture into a 2-quart size casserole dish.
13. Bake for 30 to 45 minutes.

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## Cottage Cheese Pie

This recipe is only for those on a mechanical soft diet.

### Ingredients

- 3 medium eggs or egg substitute
- 2 sprigs of parsley, chopped
- 1 pound of cottage cheese
- 1 small onion, diced
- ½ cup of Parmesan cheese
- ½ cup of mozzarella cheese, diced or grated
- Salt and pepper to taste
- Cornmeal

### Recipe

1. Preheat oven to 350° F.
2. Mix eggs, cottage cheese, onion, Parmesan cheese, mozzarella cheese, and parsley together in a bowl.
3. Grease a 9-inch glass pie pan with oil.
4. Sprinkle cornmeal lightly to cover the entire pan.
5. Pour the mixture into the pie pan.
6. Bake for 45 minutes.
7. Place a toothpick into the center of the pie. If it comes out dry, then it's done.

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## Quiche Custard

This is a puréed diet version.

### Ingredients

- ¼ of an onion, chopped finely
- 1 tablespoon of butter
- 1 tablespoon of Parmesan cheese
- ¼ cup of milk, fortified milk, or soy milk
- ¼ cup of heavy cream
- 1 egg or egg substitute
- ¼ cup of cheese (swiss, cheddar, or mozzarella)
- Pinch of salt
- Pinch of nutmeg

### Recipe

1. Preheat the oven to 350° F.
2. Sauté the onion in the butter until the butter melts.
3. Place onion, milk, cream, and egg in blender.
4. Blend until onions are puréed.
5. Place the cheeses into a small, greased casserole dish.
6. Pour egg mixture and seasonings over the cheese.
7. Place the casserole dish in a large pan with hot water.
8. Bake until the mixture sets, about 25 to 30 minutes.

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## Main Dishes

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### Sweet Potato Pie

This dish can be eaten as is by people on a mechanical soft diet. It must be mashed or puréed for those who are on a puréed diet.

### Ingredients

- 1 ½ cups of cooked mashed sweet potatoes (or one 15-ounce can of pumpkin purée)
- 1 can of evaporated skim milk
- ½ teaspoon of nutmeg
- 1 teaspoon of cinnamon
- ½ cup of sugar (increase to 1 cup if you prefer a sweeter pie or want to add more calories)
- Cornmeal

### Recipe

1. Preheat the oven to 350° F.
2. Mix the sweet potatoes (or pumpkin) with the evaporated milk and spices.
3. Add the sugar and mix.
4. Grease a 9-inch pie pan with oil.
5. Sprinkle the pan with cornmeal to cover it.
6. Shake off the extra cornmeal.
7. Bake for 45 minutes.
8. Place a toothpick into the center of the pie and pull it out. If it comes out dry, then it's done.

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## Lentil and Carrot Stew

### Ingredients

- 6 ounces of dry lentils
- 3 cups of water
- 4 medium carrots, peeled, quartered lengthwise, and cut into 1-inch pieces (2 ½ cups)
- 1 onion, diced
- 1 small stalk of washed, trimmed, and chopped celery (¼ cup)
- 3 bay leaves
- 1 teaspoon of salt (optional)
- 1 bunch of fresh cilantro or parsley, washed
- 2 teaspoons of olive oil

### Recipe

1. Sort the lentils and throw away any stones or damaged lentils.
2. Wash them in a sieve under cold water.
3. Drain out all the water.
4. Place the lentils in a large pot.
5. Add the water, carrots, onions, celery, bay leaves, and salt.
6. Remove the cilantro or parsley leaves and set them aside as a garnish.
7. Chop the stems and roots and add them to the pot.
8. Bring the mixture to a boil over high heat.
9. Reduce the heat to low, cover, and cook at a very gentle boil for 55 minutes.
10. Let the mixture cool.

If you're on a puréed diet, place it in a blender and process until smooth. Garnish with the cilantro or parsley leaves when serving.

---

## Chicken Tamale Pie

### Ingredients

- ½ cup of cornmeal (or polenta)
- 2 cups of chicken broth
- 1 to 2 cups of cooked chicken, cut up
- 1 cup (8-ounce can) of tomato sauce
- Dash of garlic powder
- Dash of oregano
- Dash of thyme
- Grated Parmesan or Cheddar cheese

### Recipe

1. Preheat the oven to 350° F.
2. Cook the cornmeal in the chicken broth until it's thick.
3. Cool it slightly and spread it into a greased casserole dish.
4. Grind or purée the chicken according to your needs.
5. Spread the chicken on top of the cornmeal mixture.
6. Season the tomato sauce with garlic, oregano, and thyme.
7. Spread the tomato sauce on top of the chicken.
8. Sprinkle cheese over the layer of tomato sauce.
9. Bake for 30 minutes or until the cheese melts

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## Meatloaf

### Ingredients

- 1 ½ pounds of lean ground beef or turkey
- 2 cloves of garlic, minced
- 1 cup of dry bread crumbs
- 1 egg, beaten
- ¼ cup of minced onion
- 1 tablespoon of Worcestershire sauce
- 1 teaspoon of chopped parsley
- 2 tablespoons of tomato sauce
- 1 teaspoon of salt (optional)

### Recipe

1. Preheat the oven to 350° F.
2. Mix all the ingredients thoroughly.
3. Spread the mixture in an ungreased 9 x 5 x 3-inch loaf pan.
4. Bake for 1 ½ hours.

If you're on a puréed diet, you can place the cooked meat loaf in a blender with some liquid and blend it to the consistency you need.

## Side Dishes

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### Winter Squash and Carrot Purée

#### Ingredients

- 1 butternut squash (3 pounds, cut in half, lengthwise with the seeds removed)
- 4 carrots, thinly sliced
- 1 clove of garlic, thinly sliced
- ¼ teaspoon of thyme
- 1 tablespoon of unsalted butter, cut into small pieces
- 2 cups of water
- Salt and pepper to taste

#### Recipe

1. Preheat the oven to 350° F.
2. Set the squash, cut side down, on a lightly oiled baking sheet.
3. Bake it for 45 minutes or until soft.
4. Combine the carrots, garlic, thyme, and water in a saucepan.
5. Cover and bring to a boil, then simmer over low heat for 20 minutes or until the carrots are tender.
6. Transfer the contents from the pan to a food processor and purée.
7. Scoop the squash out of its skin and purée it with the carrots.
8. Season with salt and pepper to taste.
9. Spread the purée on a buttered, shallow baking dish.
10. Dot with the butter.
11. Bake for 20 minutes or until hot and serve.

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### Butternut Squash Purée

#### Ingredients

- 1 large butternut squash
- 1 tablespoon of maple syrup
- 1 teaspoon of butter or margarine

#### Recipe

1. Peel the squash and cut it into small pieces.
2. Boil until tender.
3. Mash the squash with a fork.
4. Mix the mashed squash with maple syrup and butter or margarine.

---

### Lima Bean Purée

#### Ingredients

- 8 ounces of large, dry lima beans
- 3 cups of water or vegetable broth
- ½ teaspoon of salt
- 1 teaspoon (or more) of olive oil

#### Recipe

1. Sort the beans, throwing away any stones or damaged beans.
2. Wash the beans in a sieve under cold water and drain.
3. Place them in a saucepan or pot.
4. Add the water and salt.
5. Bring the mixture to a boil.
6. Cover, reduce the heat to low, and boil gently for 45 minutes, until the beans are very tender.
7. Transfer the mixture (there should be about 3 cups, including the liquid) to a food processor.
8. Add the oil and process for 20 to 30 seconds until very smooth.
9. You can also use your favorite beans or chickpeas in place of the lima beans.

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## Desserts

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### Peach Sauce

Drain the syrup from any size can of peaches. Blend the peaches until they are smooth. Store in the refrigerator.

You can put this sauce over ice cream or frozen yogurt, or you can eat it on its own. Those on a mechanical soft diet can also use it to soften cakes.

---

### Puréeed Fresh Fruits

You can purée any fruit in a baby food grinder, blender, or food processor. Make sure to remove any peels, seeds or stems. Sprinkle apples with lemon juice to avoid browning. You can add cinnamon or mix a few different kinds of fruit together for a fruit punch flavor.

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## Ricotta Cherry Mousse

### Ingredients

- 1 pound (2 cups) of ricotta cheese
- 3 tablespoons of sifted powdered sugar
- ¼ teaspoon of almond extract
- 1 teaspoon of vanilla extract
- 2 cups of dark cherries, sliced, with pits removed (or use frozen unsweetened cherries if fresh ones are not available)
- ½ cup of semisweet chocolate chips, ground to a coarse meal in a blender

### Recipe

1. Put the ricotta in a medium-size mixing bowl.
2. Beat the ricotta with an electric mixer at high speed for about 3 minutes.
3. Slowly add sugar.
4. Stir in the extracts.
5. Cover and chill.
6. Fifteen minutes before you serve the mousse, fold in the cherries.

Serve it topped with the ground chocolate.

---

## Peaches and Cream

### Ingredients

- 1 banana
- 1 peach
- ½ cup of ice cubes
- 2 tablespoons of plain yogurt
- Peach nectar

### Recipe

1. Place the banana, peach, ice cubes, and yogurt into a blender.
2. Blend until smooth.
3. Add enough peach nectar to reach the 16-ounce mark on the blender.
4. Blend until smooth.

For more information about puréed and mechanical soft diets, speak to a dietician, or call the Department of Food and Nutrition at 212-639-7312.





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PATIENT & CAREGIVER EDUCATION

# Herbal Remedies and Cancer Treatment

This information explains herbal remedies and how they can affect your treatment.

## About Herbal Remedies

Herbal remedies are any herbs, botanical (plant-based) supplements, or dietary supplements you take for their health benefits. These may come as tablets, capsules, powders, teas, liquid extracts, and fresh or dried plants.

Some herbal remedies can help prevent or manage side effects of cancer or your treatment. The herbal remedies that can help you depend on what symptoms you have and what treatment you're getting.

Even though herbal remedies can feel safe, they may not all be safe. Herbal remedies do not go through the same testing as prescription medications to make sure they work and are safe.

Some herbal remedies may be harmful. This is because they can:

- Affect how your other medications work.
- Raise or lower your blood pressure.
- Thin your blood and increase your risk of bleeding.
- Keep radiation therapy from working as well as it should.
- Change how your body reacts to sedation (medication to make you calmer) or general anesthesia (medication to make you sleepy).

Talk with your healthcare provider about any herbal remedies or other

supplements you are taking. They can provide an open and safe space to talk about these products.

For more information about herbs and supplements, visit [www.aboutherbbs.com](http://www.aboutherbbs.com) or call MSK's Integrative Medicine Service at 646-608-8550.

## **Stop taking herbal remedies before your treatment**

**Stop taking herbal remedies and other dietary supplements 7 days (1 week) before you:**

- Have surgery.
- Start chemotherapy.
- Start radiation therapy.
- Have certain procedures. Your healthcare provider will let you know if you need to stop taking herbal remedies before your procedure.

Herbal remedies and other dietary supplements can cause bleeding and affect your treatment. Follow your healthcare provider's instructions for when to restart taking herbal remedies.

You can still use some herbs in your food and drinks, such as using spices in cooking and drinking tea. Herbal remedies are stronger than the herbs you cook with.

## **Common Herbal Remedies and Their Effects**

These are some commonly used herbs and their side effects on cancer treatments.

### **Echinacea (EH-kih-NAY-shuh)**

- Can cause rare but serious allergic reactions, such as a rash or trouble breathing.
- Can keep medications that weaken your immune system from working as well as they should.

## **Garlic**

- Can lower your blood pressure and cholesterol levels.
- Can increase your risk of bleeding.

## **Ginkgo (also known as Ginkgo biloba)**

- Can increase your risk of bleeding.

## **Ginseng (JIN-seng)**

- Can keep sedation or general anesthesia from working as well as they should.
- Can increase your blood pressure.
- Can increase your risk of bleeding.
- Can lower your blood glucose (sugar) level.

## **Turmeric (TER-mayr-ik)**

- Can keep chemotherapy from working as well as it should.

## **St. John's Wort**

- Can keep some medications from working as well as they should.
- Can make your skin more sensitive to radiation or laser treatment.

## **Valerian (vuh-LEER-ee-un)**

- Can make sedation or general anesthesia affect you more than they should.

## **Herbal formulas**

- Herbal formulas contain many different herbs and dosages.
- Stop taking these products 7 days (1 week) before treatment. Do not start taking herbal formulas again until your healthcare provider tells you it is safe.

This information does not cover all herbal remedies or possible side effects. Talk with your healthcare provider if you have any questions or concerns.

## Contact Information

- To schedule a consultation with a healthcare provider in Integrative Medicine, call 646-608-8550.
- To make an appointment for Integrative Medicine Service's therapies, classes, and workshops, call 646-449-1010.

For more information, visit [www.mskcc.org/IntegrativeMedicine](http://www.mskcc.org/IntegrativeMedicine) or read *Integrative Medicine Therapies and Your Cancer Treatment* ([www.mskcc.org/pe/integrative\\_therapies](http://www.mskcc.org/pe/integrative_therapies)).

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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Herbal Remedies and Cancer Treatment - Last updated on May 5, 2022

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## PATIENT & CAREGIVER EDUCATION

# How To Use Your Incentive Spirometer

This information will help you learn how to use your incentive spirometer (in-SEN-tiv spy-rah-MEE-ter). It also answers some common questions about it.

## About your incentive spirometer

After your surgery you may feel weak and sore, and it may be uncomfortable to take deep breaths. Your healthcare provider may recommend using a device called an incentive spirometer (see Figure 1). It helps you practice taking deep breaths.

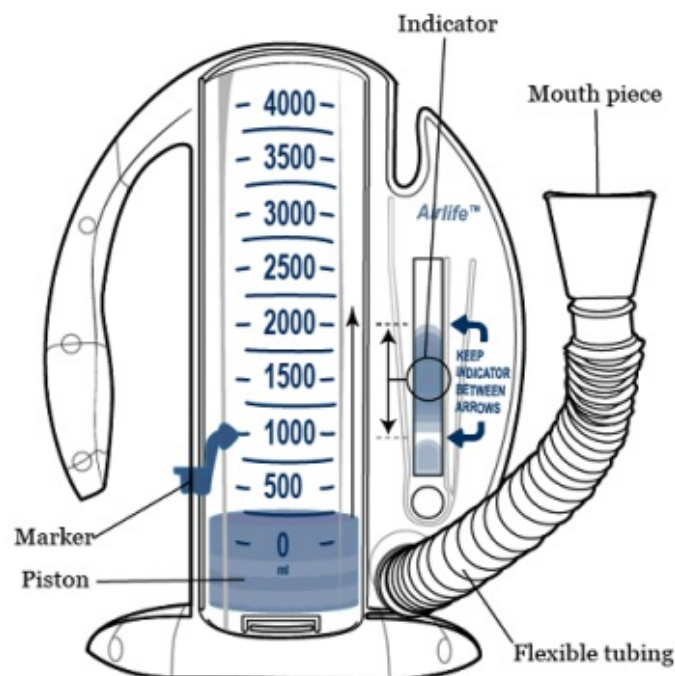


Figure 1. Parts of an incentive spirometer

It's important to use your incentive spirometer after your surgery. Using an incentive spirometer:

- Helps your lungs expand so you can take deep, full breaths.
- Exercises your lungs and makes them stronger as you heal from surgery.

**If you have a respiratory infection, do not use your incentive spirometer around other people.** A respiratory infection is an infection in your nose, throat, or lungs, such as pneumonia (noo-MOH-nyuh) or COVID-19. This kind of infection can spread from person to person through the air.

## How to use your incentive spirometer

Here is a video that shows how to use your incentive spirometer:



Please visit [www.mskcc.org/pe/incentive\\_spirometer\\_video](http://www.mskcc.org/pe/incentive_spirometer_video) to watch this video.

## Setting up your incentive spirometer

Before you use your incentive spirometer for the first time, you will need to set it up. First, take the flexible (bendable) tubing out of the bag and stretch it out. Then, connect the tubing to the outlet on the right side of the base (see Figure 1). The mouthpiece is attached to the other end of the tubing.

## Knowing what number to aim for on your incentive spirometer

Your healthcare provider will teach you how to use your incentive spirometer before you leave the hospital. They will help you set a goal and tell you what number to aim for when using your spirometer. If a goal was not set for you, talk with your healthcare provider. Ask them what number you should aim for.

You can also check the package your incentive spirometer came in. It may have a chart to help you figure out what number to aim for. To learn more, read “What number I should aim for?” in the “Common questions about your

incentive spirometer” section.

## Using your incentive spirometer

When using your incentive spirometer, make sure to breathe through your mouth. If you breathe through your nose, your spirometer will not work right.

Follow these steps to use your incentive spirometer. Repeat these steps every hour you’re awake. Follow the instructions from your healthcare provider if they’re different from the ones here.

1. Sit upright in a chair or in bed. Hold your incentive spirometer at eye level.
2. Put the mouthpiece in your mouth and close your lips tightly around it. Make sure you do not block the mouthpiece with your tongue.
3. With the mouthpiece in your mouth, breathe out (exhale) slowly and fully.
  - Some people may have trouble exhaling with the mouthpiece in their mouth. If you do, take the mouthpiece out of your mouth, and then exhale slowly and fully. After you exhale, put the mouthpiece back in your mouth and go on to step 4.
4. Breathe in (inhale) slowly through your mouth, as deeply as you can. You will see the piston slowly rise inside the spirometer. The deeper you breathe in, the higher the piston will rise.
5. As the piston rises, the coaching indicator on the right side of the spirometer should also rise. It should float between the 2 arrows (see Figure 1).
  - The coaching indicator measures the speed of your breath. If it does not stay between the 2 arrows, you’re breathing in either too fast or too slow.
    - If the indicator rises above the higher arrow, you’re breathing in too fast. Try to breathe in slower.
    - If the indicator stays below the lower arrow, you’re breathing in too slow. Try to breathe in faster.

6. When you cannot breathe in any further, hold your breath for at least 3 to 5 seconds. Hold it for longer if you can. You will see the piston slowly fall to the bottom of the spirometer.
7. Once the piston reaches the bottom of the spirometer, breathe out slowly and fully through your mouth. If you want, you can take the mouthpiece out of your mouth first and then breathe out.
8. Rest for a few seconds. If you took the mouthpiece out of your mouth, put it back in when you're ready to start again.
9. Repeat steps 1 to 8 at least 10 times. Try to get the piston to the same level with each breath. After you have done the exercise 10 times, go on to step 10.
10. Use the marker on the left side of the spirometer to mark how high the piston rises (see Figure 1). **Look at the very top of the piston, not the bottom. The number you see at the top is the highest number the piston reached. Put the marker there.** This is how high you should try to get the piston the next time you use your spirometer.
  - Write down the highest number the piston reached. This can help you change your goals and track your progress over time.

**Take 10 breaths with your incentive spirometer every hour you're awake.**

Cover the mouthpiece of your incentive spirometer when you're not using it.

## **Tips for using your incentive spirometer**

Follow these tips when using your incentive spirometer:

- If you had surgery on your chest or abdomen (belly), it may help to splint your incision (surgical cut). To do this, hold a pillow firmly against your incision. This will keep your muscles from moving as much while you're using your incentive spirometer. It will also help ease pain at your incision.
- If you need to clear your lungs, you can try to cough a few times. As



you're coughing, hold a pillow against your incision, as needed.

- If you feel dizzy or lightheaded, take the mouthpiece out of your mouth. Then, take a few normal breaths. Stop and rest for a while, if needed. When you feel better, you can go back to using your incentive spirometer.
- You may find it hard to use your incentive spirometer at first. If you cannot make the piston rise to the number your healthcare provider set for you, it's OK. Reaching your goal takes time and practice. It's important to keep using your spirometer as you heal from surgery. The more you practice, the stronger your lungs will get.

## **Common questions about your incentive spirometer**

### **How often should I use my incentive spirometer?**

How often you will need to use your incentive spirometer is not the same for everyone. It depends on the type of surgery you had and your recovery process.

Most people can take 10 breaths with their spirometer every hour they're awake.

Your healthcare provider will tell you how often to use your spirometer. Follow their instructions.

### **How long after my surgery will I need to use my incentive spirometer?**

The length of time you will need to use your incentive spirometer is not the same for everyone. It depends on the type of surgery you had and your recovery process.

Your healthcare provider will tell you how long you need to use your spirometer. Follow their instructions.

## **How do I clean my incentive spirometer?**

An incentive spirometer is a disposable device and only meant to be used for a short time. Because of this, you may not find cleaning instructions in the package your spirometer came in. If you have questions about cleaning your spirometer, talk with your healthcare provider.

## **What do the numbers on my incentive spirometer measure?**

The large column of your incentive spirometer has numbers on it (see Figure 1). These numbers measure the volume of your breath in milliliters (mL) or cubic centimeters (cc). The volume of your breath is how much air you can breathe into your lungs (inhale).

For example, if the piston rises to 1500, it means you can inhale 1500 mL or cc of air. The higher the number, the more air you're able to inhale, and the better your lungs are working.

## **What number I should aim for?**

The number you should aim for depends on your age, height, and sex. It also depends on the type of surgery you had and your recovery process. Your healthcare provider will look at these things when setting a goal for you. They will tell you what number to aim for.

Most people start with a goal of 500 mL or cc. Your healthcare provider may change your goal and have you aim for higher numbers as you heal from surgery.

The package your incentive spirometer came in may have a chart. You can use the chart to set your goal based on your age, height, and sex. If you cannot find this information, ask your healthcare provider what your goal should be.

## What does the coaching indicator on my incentive spirometer measure?

The coaching indicator on your incentive spirometer measures the speed of your breath. As the speed of your breath changes, the indicator moves up and down.

Use the indicator to guide your breathing. If the indicator rises above the higher arrow, it means you're breathing in too fast. If the indicator stays below the lower arrow, it means you're breathing in too slow.

Aim to keep the indicator between the 2 arrows (see Figure 1). This means your breath is steady and controlled.

## When to call your healthcare provider

Call your healthcare provider if you have any of these when using your incentive spirometer:

- Feel dizzy or lightheaded.
- Pain in your lungs or chest.
- Severe (very bad) pain when you take deep breaths.
- Trouble breathing.
- Coughing up blood.
- Fluid or blood coming from your incision site when you cough.
- Trouble using your spirometer for any reason.

If you have any questions, contact a member of your care team directly. If you're a patient at MSK and you need to reach a provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

How To Use Your Incentive Spirometer - Last updated on November 24, 2023

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PATIENT & CAREGIVER EDUCATION

# Managing Trismus After Treatment for Head and Neck Cancer

This information will help you manage trismus after treatment for head and neck cancer. Trismus, also known as lockjaw, is when you have trouble opening your mouth fully.

After surgery or radiation therapy to your head and neck, your jaw may feel tight. Your mouth may be hard to open. Following the instructions in this resource will help relax your jaw muscles. This will help your mouth and jaw move and work like they did before your treatment.

## About Your Jaw

Your jaw is made up of a pair of bones. These bones form the framework of your mouth and teeth (see Figure 1).

- Your **maxilla** is your upper jawbone.
- Your **mandible** is your lower jawbone.
- Your **temporomandibular joint (TMJ)** is where your mandible connects to your skull.
- Your **masseter muscle** is the muscle that connects your mandible to your skull.

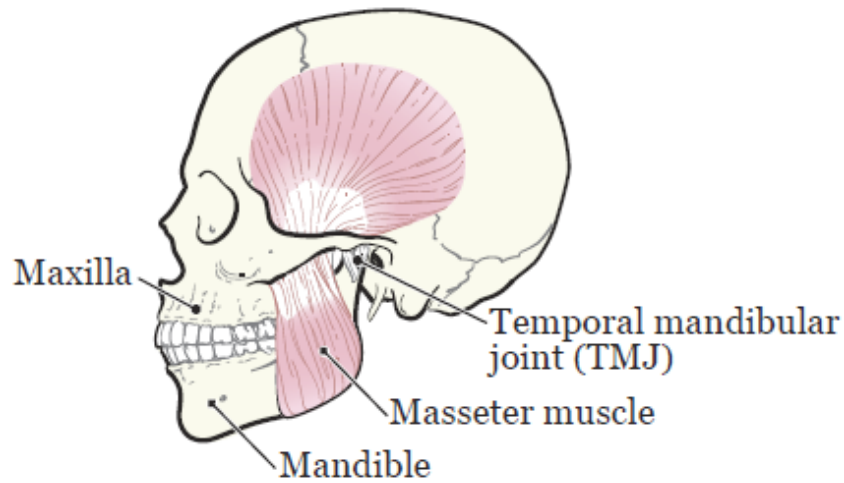


Figure 1. The bones and muscles of your jaw

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Many muscles and nerves around your jaw work together to open and close your mouth. Most people can open their mouth 35 to 55 millimeters (1.4 to 2.2 inches). This is about the width of 3 fingers (see Figure 2).



Figure 2. Normal width of an open mouth

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## About Trismus

Trismus can happen anytime during, right after, or even years after your treatment. It can happen:

- If you have a tumor in the bones, muscles, or nerves that open your mouth.
- After surgery to your head and neck.
- After radiation therapy to your head and neck.

- After chemoradiation (KEE-moh-RAY-dee-AY-shun) therapy to your head and neck. Chemoradiation is when you receive chemotherapy along with radiation therapy.

These cancer treatments can cause fibrosis (fy-BROH-sis), which is an abnormal thickening or scarring of tissue. Fibrosis can develop as your tissues start to heal after surgery. It can also build up years after radiation therapy or chemoradiation therapy.

Trismus can get in the way of your daily activities and affect your quality of life. You may have problems with:

- Oral hygiene (cleaning your mouth and teeth). This can lead to bad breath, cavities, and infections.
- Chewing and swallowing. This can make it hard to eat and drink.
- Talking.
- Kissing.
- Having a breathing tube placed (for example, if you ever need general anesthesia).
- Having routine dental treatment.
- Feeling anxious (nervous or worried) or depressed (unhappy).

Once trismus develops, depending on how bad it is, it can be very hard to treat and manage. It's important to identify trismus as soon as it develops, so you can get the right treatment for it.

## How to Manage Trismus

There are 5 main ways to help manage trismus:

- Massage (gently rub) your jaw muscles.
- Exercise your jaw muscles.
- Keep good posture.

- Keep good oral hygiene.
- Use jaw mobilizing devices, if needed.

Even if you do not have any symptoms of trismus, you should do these things. They are important in helping your mouth move and work like it did before your treatment. If you do develop trismus, doing these things will help manage your symptoms.

Follow the instructions in the sections below. **If you had surgery, ask your healthcare provider if it's safe before you start.**

## Massage your jaw muscles

Place your index (pointer) and middle finger on your cheekbone. Keeping your lips together, relax your jaw (don't clench your teeth).

Run your fingers down over your masseter muscle, which ends at your bottom jaw (see Figure 3). As you move your fingers, find areas that feel tender or tight. **Massage these areas with your fingers in a circular motion for 30 seconds. Do this 2 to 3 times every day.**

Try not to clench your jaw when you're stressed or out of habit. This will help keep your jaw muscles relaxed.



Figure 3. Massage your jaw muscles



## Exercise your jaw muscles

Your healthcare provider will tell you when to start doing these exercises. Follow their instructions. Starting too soon or too late can affect how well your mouth and jaw will work in the future.

Follow these tips when doing your exercises.

- It may be helpful to use a timer or clock to make sure you hold the stretches long enough.
- Breathe normally. Do not hold your breath during the exercises.
- Do the exercises slowly and smoothly. Do not make any fast or jerky movements.
- Watch your movements in a mirror to make sure you're doing them correctly.

You can do these exercises while sitting or standing. When doing these exercises, you should feel a gentle stretch. They should not cause pain. If an exercise is causing pain or discomfort, try doing it more gently. If you still have pain or discomfort, stop right away and call your healthcare provider.

## Active range of motion and stretching exercises

**Do these exercises 3 times every day. Hold your head still while doing them.**

1. Open your mouth as wide as you can, until you feel a gentle stretch but no pain (see Figure 4). **Hold this stretch for 10 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**

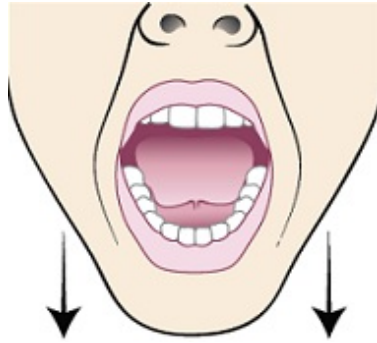


Figure 4. Mouth open wide

2. Move your lower jaw to the left (see Figure 5). **Hold this stretch for 3 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**
3. Move your lower jaw to the right (see Figure 6). **Hold this stretch for 3 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**



Figure 5. Move your jaw to the left



Figure 6. Move your jaw to the right

## Passive stretching exercise

**Do this exercise 3 times every day.**

1. Put on a pair of disposable medical gloves. If you do not have gloves, wash your hands well with soap and water. Wet your hands and apply soap. Rub your hands together well for at least 20 seconds, then rinse. Dry your hands with a paper towel and use that same towel to turn off the faucet. If you don't have paper towels, it's OK to use clean cloth towels. Replace them when they are wet.
2. Place your thumb under your top front teeth.

3. Place the index (pointer) finger of your other hand on your bottom front teeth (see Figure 7).
4. Open your mouth as wide as you can. Push your fingers gently against your teeth to give extra resistance. This will help to keep your mouth from closing. You should feel a gentle stretch, but no pain. **Hold this stretch for 5 to 10 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**

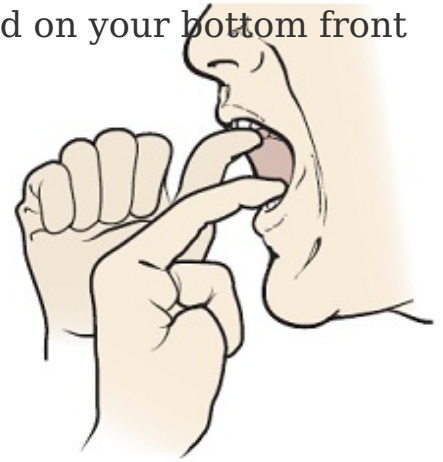


Figure 7. Place your thumb and index finger on your teeth

## Keep good posture

Good posture means sitting and standing with your ears, shoulders, hips, knees, and ankles aligned (see Figure 8). You need to keep your neck and shoulders strong and flexible to have good posture. The following exercises will help you do this.



Figure 8. Good posture

You can do them while sitting or standing with your arms at your sides. Try to check your posture at least once an hour while you're awake. It's very important to do this when you're sitting for a long time, such as working in front of a computer.

## Neck stretches

**Do these exercises once a day.**

Do these exercises until you feel a gentle stretch or pull. You should not feel pain when doing them.

1. Bend your head forward (see Figure 9). **Hold this position for 30 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**

2. Bend your head backward (see Figure 10). **Hold this position for 30 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**



Figure 9. Bend your head forward



Figure 10. Bend your head back

3. Turn your head to the right (see Figure 11). **Hold this position for 30 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**
4. Turn your head to the left (see Figure 12). **Hold this position for 30 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**



Figure 11. Turn your head to the right



Figure 12. Turn your head to the left

5. Bring your left ear to your left shoulder (see Figure 13). **Hold this position for 30 seconds, then relax. Take 1 full breath between each repetition. Repeat this 5 times.**
6. Bring your right ear to your right shoulder (see Figure 14). **Hold this position for 30 seconds, then relax. Take 1 full breath between**

**each repetition. Repeat this 5 times.**



Figure 13. Bend your head to the left



Figure 14. Bend your head to the right

## **Chin tuck**

**Do this exercise 3 times every day.**

1. Sit or stand with your back and head leaning against the wall.
2. Tuck your chin in and try to flatten the back of your neck against the wall (see Figure 15). **Hold this position for 5 seconds, then relax.**
3. Return to the starting position.
4. **Take 1 full breath between each repetition. Repeat this 10 times.**

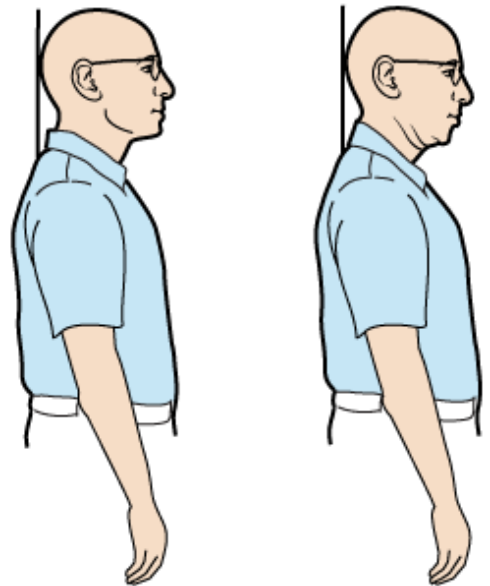


Figure 15. Chin tuck

## **Shoulder blade squeeze**

**Do this exercise 3 times every day.**

1. Tuck your chin in (just like in the chin tuck exercise above).
2. Push your shoulders down and away from your ears. This stops you from shrugging.
3. Squeeze your shoulder blades together as tightly as possible (see Figure 16). **Hold this position for 5 seconds, then relax.**
4. Return to the starting position.

**5. Take 1 full breath between each repetition. Repeat this 10 times.**

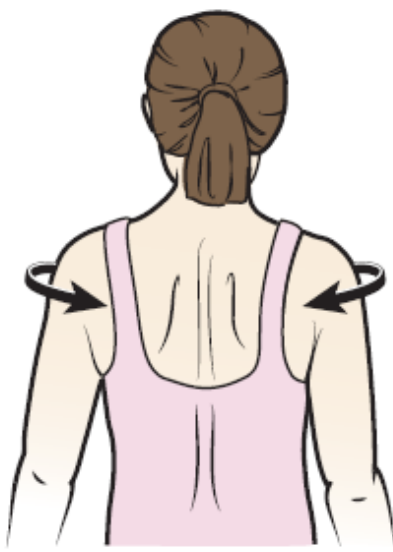


Figure 16. Squeeze your shoulder blades together

## **Keep good oral hygiene**

- Brush your teeth and tongue when you wake up, after each meal, and before you go to bed.
- If you have removable dentures or a dental prosthesis, take it out and clean it each time you clean your mouth. Do not sleep with it in your mouth.
- Floss your teeth once a day before you go to bed.

## **Use jaw mobilizing devices**

A jaw mobilizing device is a handheld device that helps to stretch your jaw. Some examples of jaw mobilizing devices are:

- The TheraBite® Jaw Motion Rehabilitation System™.
- The OraStretch® Press System.
- The Jaw Dynasplint® System.

Using a jaw mobilizing device, along with exercising your jaw muscles, can help:

- Improve your jaw's range of motion.
- Strengthen your jaw muscles.
- Reduce pain and swelling.

Your healthcare provider will tell you if you need to use a jaw mobilizing device. They will recommend one that is right for you and give you instructions on how to use it.

## If You Develop Tightness When Opening Your Mouth

The earlier you start treatment for trismus, the easier it will be to help your jaw work better. If you notice any tightening in your jaw, call your healthcare provider right away. They can refer you to a specialist, such as:

- **Physical therapists, speech and swallowing specialists, or both.** They can help you keep your ability to open your mouth. They can also help you get back any ability you may have lost. They use many techniques, such as exercise, stretching, and massage. They may also recommend special jaw mobilizing devices to help you open your mouth.
- **Rehabilitation medicine doctors.** They check to see how well you can open your mouth. They may give you medication for pain or spasms (sudden intense cramping in your muscle), suggest other treatments, or recommend medical devices to help you.

Your healthcare provider will talk with you about which referral(s) may be most helpful for you.



If you have any questions, contact a member of your care team directly.  
If you're a patient at MSK and you need to reach a provider after 5 p.m.,  
during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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