



Memorial Sloan Kettering
Cancer Center

PATIENT & CAREGIVER EDUCATION

About Your Mandibulectomy and Fibula Free Flap Reconstruction

This guide will help you get ready for your mandibulectomy (MAN-dih-bul-EK-toh-mee) at Memorial Sloan Kettering (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/mandibulectomy_fibula_free_flap

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About Your Surgery

Mandibulectomy and free-flap reconstruction

A mandibulectomy is a surgery to remove all or part of your jaw (mandible). You may have a mandibulectomy if you have a tumor involving your jaw.

Your jaw may be rebuilt using bone from another part of your body (the donor site). The bone may be taken from your fibula, which is the smaller of the 2 bones in your lower leg. An artery, vein, and soft tissue will also be removed with the bone. This is called a fibula free flap (see Figure 1).

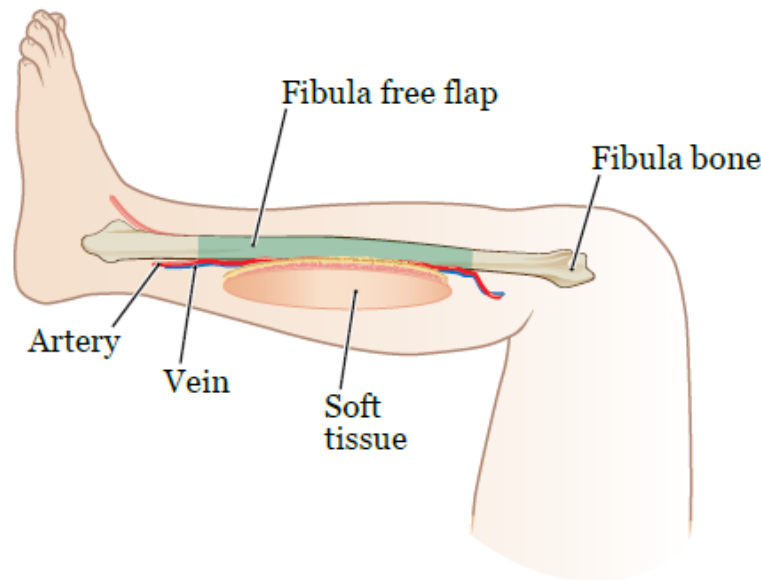


Figure 1. Fibula free flap

Most jaw reconstructions use the leg as the donor site. Some surgeries rebuild your jaw using a bone from a different donor site or don't use bone in your reconstruction. Your plastic surgeon will talk with you about how they'll rebuild your jaw.

You may also need a skin graft to cover your donor site. A skin graft is made by taking the top layer of skin from one part of your body and moving it to the surgical site that needs to be covered. If a skin graft is needed, it will be removed from another area, usually the buttock or thigh. Your plastic surgeon will talk with you about the plan for your surgery.

Before your surgery

You'll meet with your head and neck surgeon, your plastic surgeon, and your dentist. They'll make sure it's safe for you to have surgery. They'll also take computed tomography (CT) scan(s) and x-rays to assess the amount of tumor in your jaw. These will be used to make a model of your new jaw before surgery.

You may also have:

- Photographs taken of your face that will be used during the reconstruction.
- Scans that use special dye (angiograms), such as magnetic resonance (MR) or CT, of your donor site to evaluate the blood vessels in your donor site.

During your surgery

Your surgery will be done by 3 surgical teams: a head and neck team, a plastics team, and dental team.

Your head and neck surgeon will remove the tumor from your jaw and the soft tissue around it. At the same time, your plastic surgeon will remove the bone, tissue, and skin from your donor site. This will take 3 to 4 hours. Your head and neck surgeon will send the tumor and surrounding tissue to the Pathology Department for testing. Once your head and neck surgeon has completed their part of the surgery, the reconstruction can be done.

Your plastic surgeon will transfer the tissue from your donor site to reconstruct your jaw. The bone from your donor site will be shaped to match, as closely as possible, the piece of your jaw that was removed. Once this is complete, your plastic surgeon will attach the artery and vein from the donor site to an artery and vein in your head and neck area. This is done under a microscope. They'll fix the new jaw bone in place with plates and screws and cover it with the soft tissue. Your plastic surgeon will then place stitches in your face and neck to connect them to the soft tissue. The reconstructive part of the surgery usually takes 6 to 8 hours.

During your reconstruction, your dentist may place temporary arch bars and rubber bands in your mouth (see Figure 2). These will keep your teeth and jaw correctly aligned. Your dentist will remove the rubber bands 5 to 7 days after your surgery and the arch bars 14 days after your surgery.

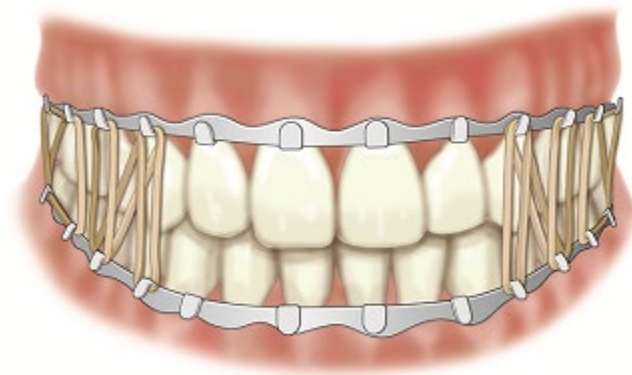


Figure 2. Arch bars and rubber bands

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.

- | | |
|---|--|
| <ul style="list-style-type: none"><input type="checkbox"/> I take a blood thinner, such as:<ul style="list-style-type: none">○ Aspirin○ Heparin○ Warfarin (Jantoven® and Coumadin®)○ Clopidogrel (Plavix®)○ Enoxaparin (Lovenox®)○ Dabigatran (Pradaxa®)○ Apixaban (Eliquis®)○ Rivaroxaban (Xarelto®) <p>There are others, so be sure your healthcare provider knows all the medications you're taking.</p> <ul style="list-style-type: none"><input type="checkbox"/> I take prescription medications (medications my healthcare provider prescribes), including patches and creams.<input type="checkbox"/> I take over-the-counter medications (medications I buy without a prescription), including patches and creams. | <ul style="list-style-type: none"><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.<input type="checkbox"/> I'm allergic to certain medication(s) or materials, including latex.<input type="checkbox"/> I'm not willing to receive a blood transfusion.<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 your surgery to keep from having problems:

- Be honest with your healthcare providers about how much alcohol you drink.
- Try to stop drinking alcohol once your surgery is planned. If you develop a headache, nausea (feeling like you're going to throw up), increased anxiety, or can't sleep after you stop drinking, tell your healthcare provider right away. These are early signs of alcohol withdrawal and can be treated.
- Tell your healthcare provider if you can't stop drinking.
- Ask your healthcare provider questions about drinking and surgery. As always, all your medical information will be kept confidential.

About smoking

If you smoke, you can have breathing problems when you have surgery. Stopping even for a few days before surgery can help. If you smoke, your healthcare provider will refer you to our Tobacco Treatment Program. You can also reach the program by calling 212-610-0507.

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) 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, 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). For help, contact the MyMSK Help Desk by emailing 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 or read *A Guide for Caregivers*. You can find it online at 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 and www.mskcc.org/pe/health_care_agent or ask your healthcare provider for a copy.

Exercise

Try to do aerobic exercise every day. Aerobic exercise is any exercise that makes your heart beat 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.

Buy a 4% chlorhexidine gluconate (CHG) solution antiseptic skin cleanser (such as Hibiclens®)

4% CHG solution is a skin cleanser that kills germs for 24 hours after you use it. Showering with it before your surgery will help lower your risk of infection after surgery. You can buy a 4% CHG solution antiseptic skin cleanser at your local pharmacy without a prescription.

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 the resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E*. 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 the resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E*. 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 the following location:

Presurgical Center (PSC) on the 6th floor
1275 York Avenue (between East 67th and East 68th Streets)
New York, NY 10065
Take the B elevator to the 6th floor.

Shower with a 4% CHG solution antiseptic skin cleanser (such as Hibiclens)

The night before your surgery, shower using a 4% CHG solution antiseptic skin cleanser.

1. Use your normal shampoo to wash your hair. Rinse your head well.
2. Use your normal soap to wash your face and genital area. Rinse your body well with warm water.
3. Open the 4% CHG solution bottle. Pour some into your hand or a clean washcloth.
4. Move away from the shower stream. Rub the 4% CHG solution gently over your body from your neck to your feet. Don't put it on your face or genital area.
5. Move back into the shower stream to rinse off the 4% CHG solution. Use warm water.
6. Dry yourself off with a clean towel after your shower.
7. Don't put on any lotion, cream, deodorant, makeup, powder, perfume, or cologne after your shower.



Instructions for eating before your surgery



Do not eat anything after midnight the night before your surgery. This includes hard candy and gum.

The morning of your surgery

Instructions for drinking before your surgery

| | |
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|  | You can drink a total of 12 ounces of water between midnight and 2 hours before your scheduled arrival time. Do not drink anything else. |
|  | Do not drink anything starting 2 hours before your scheduled arrival time. This includes water. |

Take your medications as instructed

If your healthcare provider told you to take certain medications the morning of your surgery, take only those medications with a sip of water. Depending on what medications you take, this may be all, some, or none of your usual morning medications.

Shower with a 4% CHG solution antiseptic skin cleanser (such as Hibiclens)

Shower with a 4% CHG solution antiseptic skin cleanser before you leave for the hospital. Use it the same way you did the night before.

Don't put on any lotion, cream, deodorant, makeup, powder, perfume, or cologne after your shower.

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.
- 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

- 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 66th Street between York and First Avenues. If you have questions about prices, call 212-639-2338.

To reach the garage, turn onto East 66th 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 69th Street between First and Second Avenues, East 67th Street between York and First Avenues, and East 65th Street between First and Second Avenues.

Once you're in the hospital

When you get to the hospital, take the B elevator to the 6th floor. Check in at the desk in the PSC waiting room.

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.

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.

Notes _____

What to expect

When you wake up after your surgery, you'll be in the Post Anesthesia Recovery Unit (PACU). You'll stay in the PACU overnight so your nurses can closely monitor your flap for 12 hours after your surgery.

You may not be able to open your mouth because of the rubber bands. You won't be able to talk because a tracheostomy tube will be in your windpipe. Your nurses will ask you "yes" or "no" questions about how you feel. You'll be given an iPad to help you answer these questions. A dry erase board will also be available for you to write down what you need.

You'll have tubes, drains, catheters (thin, flexible tubes), and other medical devices, including:

- A humidifier collar placed over your tracheostomy tube. It will provide moist air to your lungs.
- An IV line through which you'll receive fluids, antibiotics, pain medication, and anticoagulants to prevent blood clots.
- A urinary (Foley®) catheter to drain urine from your bladder. It will be removed 2 or 3 days after your surgery.
- Drains (small tubes) in your neck and your donor site to let fluid drain. They'll be removed when the drainage is less than 1 ounce in 24 hours.
- A feeding tube that goes through your nose into your stomach. This is called a nasogastric (NG) tube. You'll get high-protein liquid feedings and some of your medications through this tube. You won't be able to eat and drink until the swelling from the surgery goes down.
- A cast, splint, sling, or wound VAC (a special dressing that applies suction to your wound to improve healing) may be placed on the donor site. It will be removed 5 to 7 days after your surgery. If you have a cast, splint, or sling, a dressing will be placed underneath it.
- Compression boots on 1 or both legs to help circulate blood to prevent blood clots. If your donor site was on one of your legs, that leg won't have a boot on it.

For the first week after your surgery, your doctors and nurses will monitor the blood supply to your jaw and nearby tissue. They'll use a machine called a Doppler®. It's noisy, but painless. It will be used every hour for the first 2 days after your surgery. After 2 days, your doctor will decide how often the Doppler will be used. Your doctor and nurse will check that the flap feels warm to touch and appears similar in color to your surrounding skin.

It's very important to avoid pressure to your newly reconstructed jaw. You won't be able to use a pillow while in the hospital.

Your nurses and nursing assistants will care for your drains, tubes, and tracheostomy. As you start to feel better, they'll teach you how to do some of this care yourself.

Suctioning the tracheostomy tube

When you cough and breathe deeply, mucus from your lungs and the back of your throat will come through your tracheostomy tube. This mucus will have to be suctioned. Your nurse will do this often during the first few days after your surgery. They'll then teach you how to do it yourself. For more information, read the resource *Caring for Your Tracheostomy*. You can find it in the "Educational Resources" section of this guide or ask your healthcare provider for a copy.

Once the swelling has decreased, you'll have less mucus and the opening of the tracheostomy tube will be capped so you can breathe through your nose. If you're able to breathe normally and cough up mucus comfortably with the tracheostomy tube capped, the tracheostomy tube will be removed. If you go home with the tracheostomy tube in place, your nurse will teach you how to care for it. We'll order a portable suctioning machine for you.

Nasogastric (NG) tube feedings

Your nurse will give you tube feedings through your NG tube for the first 1 to 2 weeks. Once the swelling starts to go down, your NG tube will be removed and you'll be given clear liquids to drink and then soft foods to eat. How quickly this happens will depend on your healing.

Caring for your donor site

The leg is the most common donor site for jaw reconstructions. If your jaw is being rebuilt using tissue from a different donor site, your nurse will tell you how to care for it.

You'll stay in bed for the first 2 days after your surgery to help your leg heal. After 2 days, you can get out of bed and sit in a chair with your leg raised. It's important to keep your leg raised as much as possible for the first 3 weeks. This will help with the swelling and promote healing. Your doctor will tell you when you can start walking again. You'll need to use a walker at first, but you'll be able to walk on your own over time.

During your hospital stay, your nurse will tell you how to care for your leg and skin graft, if you have one. When it's time to go home, they'll give you specific instructions if you still need them.

Irrigating your mouth

Starting 5 days after your surgery or as soon as your rubber bands are removed, your nurse will start irrigating (wetting) your mouth with salt water and baking soda. This helps keep your mouth clean and moist.

You'll keep irrigating your mouth after you leave the hospital. Do this 3 to 4 times a day, in the morning, after meals, and at bedtime. Your nurse will give you an irrigation kit to take home with you.

Preventing trismus (lockjaw)

Trismus is when you have trouble opening your mouth. It can develop after surgery or radiation therapy. It's caused by soft tissue scarring or changes in the muscles around the jaw. You must do jaw exercises to prevent trismus. As soon as you're ready, your doctor or nurse will tell you how often to do them.

For more information, read the resource *Preventing Trismus*. You can find it in the "Educational Resources" section of this guide or ask your healthcare provider for a copy.

Following a puréed diet

Most people will need to follow a puréed diet after they're discharged. This means that foods have to be put through a blender or food processor. Your dietitian will go over this diet with you. Your diet will progress as healing takes place.

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 or ask your healthcare provider for a copy.

Commonly asked questions

How long will I be in the hospital?

The length of time you are in hospital depends on the extent of the surgery and how quickly you recover. On average, most people stay for 10 to 14 days.

Will I have pain?

You'll have some pain after your surgery. 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.

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.

Will I have pain when I am home?

The length of time each person has pain or discomfort varies. Follow the guidelines below to manage your pain.

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® or Motrin®) 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 start doing your normal activities again. 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.

What's my 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 *About Your Recovery Tracker*. You can find it in the "Educational Resources" section of this guide.

How can I prevent constipation?

Some prescription pain medications (such as opioids) may cause constipation (having fewer bowel movements than usual). There are steps you can take to prevent constipation, including exercising if you can. Walking is an excellent form of exercise. Drink plenty of water.

If these methods don't help, talk with your doctor or nurse. They may recommend over-the-counter or prescription medication.

When will my stitches be removed?

If you have stitches inside of your mouth, they'll dissolve on their own and don't need to be removed.

Your doctor will remove the stitches in your face and neck about 2 weeks after your surgery. If you've had radiation therapy to your face or neck, the stitches may stay in place for 3 to 4 weeks.

How do I care for my incisions?

- Don't apply direct heat or cold to your incisions. They may be numb and you can easily burn yourself.
- Don't use hot water bottles or heating pads. You should also avoid saunas and steam rooms.
- Don't shave over your incisions while your stitches are in place. If you shave your face or neck, use an electric shaver.
- Don't use perfume, cologne, after-shave, or perfumed moisturizers until your incisions are completely healed.
- Avoid sun exposure. Once your head and neck surgeon determines that your incisions are completely healed, you can use a PABA-free sunscreen with an SPF of 30 or higher on your incisions.

When can I shower?

Your doctor or nurse will give you instructions on when you can shower.

When can I swim?

You can swim when you've been told that your incisions are completely healed. Avoid hot tubs, baths and swimming pools until then.

When can I start doing my usual activities?

Your doctor or nurse will tell you when you can start doing your usual activities again. This depends on the extent of your surgery and how quickly you recover.

When is it safe for me to drive?

Your doctor or nurse will tell you when you can start driving again. This will depend on the extent of your surgery and how quickly you recover.

When can I exercise?

Don't do strenuous exercise or lift any objects heavier than 5 pounds (2.3 kilograms) for 6 weeks. Talk with your doctor or nurse before resuming activities such as lifting and exercise.

When can I resume sexual activity?

Your doctor will tell you when you can start sexual activity again.

What type of follow-up care will I get after I leave the hospital?

Both your head and neck surgeon and your plastic surgeon will need to see you after discharge. Call each surgeon's office to schedule your follow-up appointment. Write down any questions you have and bring them with you.

When will I get my test results?

Your test results should be available 10 to 14 days after surgery. Your doctor will discuss them with you at your first follow-up appointment after your surgery.

How can I cope with my 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.

When to call your healthcare provider



Call your head and neck surgeon right away if:

- You have a fever of 100.5 °F (38 °C) or higher.
- You have more discomfort, redness, or both around your incision line.
- The skin around your incision line is hot to the touch.
- There's fluid draining or building up around your incision site.
- You have shortness of breath.
- Your incision is starting to swell or the swelling around your incision is getting worse.

Contact information

Monday through Friday from 9:00 AM to 5:00 PM, call your healthcare provider's office.

After 5:00 PM, during the weekend, and on holidays, call 212-639-2000 and ask to speak to the person on call for your healthcare provider.

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.

Notes _____

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

888-675-7722

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

Patient and Caregiver Education

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 and Caregiver Peer Support Program

212-639-5007

You may find it comforting to speak with someone who has been through a treatment similar to yours. You can talk with a former MSK patient or caregiver through our Patient and Caregiver Peer Support Program. These conversations are confidential. They may take place in person or over the phone.

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

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 for more information.

For more online information, visit the Cancer Types section of 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 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.

Notes _____

Notes _____

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 to watch this video.

- You must be signed up for MyMSK. You can access MyMSK at 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, 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).
- 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 to search our virtual library.

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

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PATIENT & CAREGIVER EDUCATION

Caring for Your Tracheostomy

This information will help you care for your tracheostomy while you're in the hospital and at home.

Your Trachea

Your trachea (windpipe) is part of your respiratory system. It's about 4 1/2 inches (11 centimeters) long and is at the front of your neck (see Figure 1). It runs from your larynx (voice box) to your lungs.

The air you breathe passes from your nose or mouth into your larynx, then into your trachea, then into your lungs. This path is called your airway.

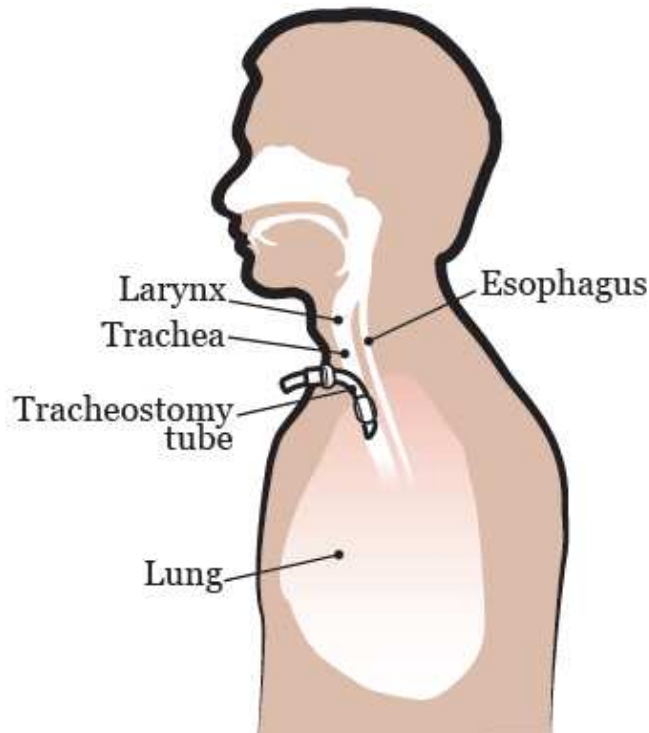


Figure 1. Placement of the tracheostomy tube

Tracheostomy

A tracheostomy is a surgical opening made in your trachea to make breathing easier and to protect your airway.

You may need a tracheostomy if:

- A tumor is blocking or narrowing your airway.
- Mucus or secretions are blocking or narrowing your airway.
- You're having a head and neck surgery that will probably cause swelling.

After the tracheostomy is made, you will have a tracheostomy tube inserted in the tracheostomy site to keep it from closing.

The tracheostomy may be temporary or permanent. Your doctor will talk with you about how long you will need to have the tracheostomy.

Communicating with a tracheostomy

While the tracheostomy tube is in place, you won't be able to speak normally. You will be given a pen and paper to help you communicate. Many people can speak by covering the opening in the tube with a finger. Your nurse will teach you how to do this.

Tracheostomy tube

A tracheostomy tube has 2 pieces (see Figure 2):

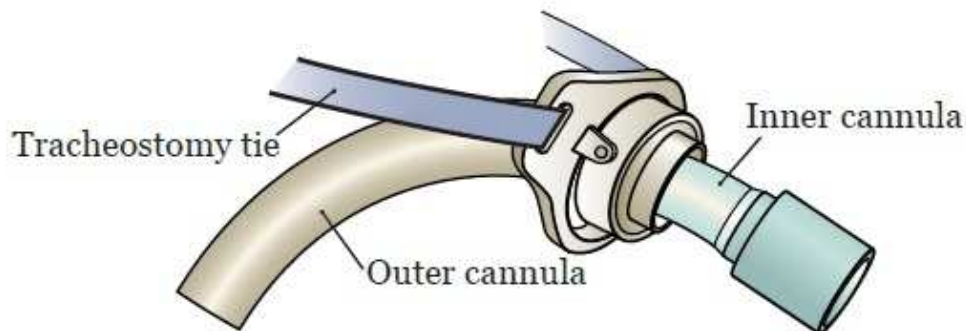


Figure 2. Inner and outer cannulas

- The outer cannula, which always stays in place. This keeps your tracheostomy site open. **Do not remove the outer cannula. Only your doctor or nurse should remove it.**
- The inner cannula, which slides in and out for cleaning. **Do not leave the inner cannula out for more than a few minutes.** It should always remain in place when not being cleaned.

You will also have a tracheostomy tie that goes around your neck and connects to the outer cannula. This will keep the tracheostomy tube in place.

Tracheostomy Surgery

Your doctor or nurse will talk with you about what to expect during your surgery. They will give you a resource, [Getting Ready for Surgery](#), which has instructions about how to prepare for your surgery. Be sure to follow all of the instructions that your doctor or nurse gives you. Call your doctor's office if you have any questions.

You will be given anesthesia (medication to make you sleep) before the surgery to create your tracheostomy. Once you're asleep, your doctor will make an opening into your neck. They will insert a tracheostomy tube through the opening and into your trachea. This will help you breathe easier.

After your surgery

After your surgery, you will wake up in the Post Anesthesia Recovery Unit (PACU). You will have your tracheostomy tube in place. You will also have a humidity collar in front of your tracheostomy that will give you moisturized air that's high in oxygen.

You will stay in the PACU until you're completely awake and your pain is managed with pain medications.

Once you have a tracheostomy, it's important to protect your airway at all times.

Don't submerge yourself in water. You can't go swimming while your tracheostomy tube is in place, or after the tube is removed until the site is completely closed.

When showering, avoid having water spray or splash directly into the tracheostomy.

While you have a tracheostomy, it's important to use a humidifier, especially at night. It will help to keep your secretions loose and prevent clogging.

Your recovery and daily activities

Stay active after your surgery. This will help:

- Prevent blood clots by keeping your blood flowing.
- Prevent pneumonia by expanding your lungs.
- Keep your muscles strong.

Your nurse will help you sit in a chair, bathe, and dress during the first day or so after surgery. As you feel stronger, you will be able to do more on your own, such as getting out of bed, bathing, and dressing yourself. You should walk in the hallways with assistance, if needed. Doing activities will help you regain your strength more quickly.

Caring for Your Tracheostomy

Your nurse will teach you how to care for your tracheostomy while you're in the hospital. If you leave the hospital with the tracheostomy in place, you will continue to care for it at home. You will learn how to:

- Suction the tracheostomy tube

- Clean the suction catheter
- Clean the inner cannula
- Clean your skin around the tracheostomy site
- Moisturize the air you breathe

Suctioning the tracheostomy tube

Suctioning the tracheostomy tube will keep your airway free of secretions (mucus) and allow you to breathe without difficulty. Your nurse will teach you how and tell you how often to do this.

Instructions

1. Gather your equipment.
 - 1 suction machine with plastic tubing
 - 1 suction catheter
 - 1 bowl or large cup filled with water
 - 1 mirror
 - 2 to 4 dry gauze pads
2. Wash your hands thoroughly with soap and water or use an alcohol-based hand sanitizer.
3. Open the package with the suction catheter. Connect the catheter to the plastic tubing of the suction machine.
4. Position the mirror so you can see the opening of your tracheostomy tube.
5. Turn on the suction machine. (If you're in the hospital, you must open the clamp on the suction tubing instead).
6. Pinch the suction catheter between your thumb and forefinger to block the suction.
7. Cough deeply to bring up any secretions.
8. Keep the suction catheter pinched. Insert it about 3 to 5 inches (8 to 13

centimeters) into your tracheostomy tube.

9. Un-pinch the suction catheter to begin suctioning. **Do not keep the suction catheter in your trachea for longer than 10 seconds, or you may have shortness of breath.**
10. Using a rotating motion, slowly pull the suction catheter out of your tracheostomy. Rotating the catheter allows secretions on all sides of your trachea and the tube to be suctioned.
11. Wipe off the secretions from the suction catheter with dry gauze.
12. Rinse the secretions from the suction catheter by suctioning the water through it.
13. Repeat the steps above if you feel that you have more secretions that need to be cleared out.
14. If you need to repeat the suctioning more than 2 or 3 times, rest for a few minutes before doing it again.

Cleaning the suction catheter

Each time you finish suctioning your tracheostomy tube, you must clean the suction catheter.

Instructions while you're in the hospital

1. Gather your equipment:
 - 1 jar of Dakin's® solution or another antiseptic
 - 1 bowl or large cup filled with water
2. Rinse the suction catheter with water and then suction more water through it.
3. Close the clamp.
4. Put the suction catheter into a jar of Dakin's solution or another antiseptic fluid.

While you're in the hospital, a patient care technician will give you a new suction catheter each day.

Instructions when you're at home

1. Gather your equipment:
 - 1 clean, dry cloth or paper towel
 - 1 bowl or large cup filled with water
2. Rinse the suction catheter with water and then suction more water through it.
3. Dry the suction catheter with the dry cloth or paper towel.
4. Disconnect the suction catheter from the plastic tubing on the suction machine.
5. Place the suction catheter on the dry cloth or paper towel.

While you're at home, change the suction catheter once a week, or more often if it becomes dirty or clogged.

Empty the secretions from the inside of the suction machine into the toilet. Don't empty them into the sink or the drain could become clogged.

Clean the canister of the suction machine as needed with soap and water.

Cleaning the inner cannula and your skin around the tracheostomy site

Clean the inner cannula every 2 to 4 hours, or more often as needed, to keep it free of secretions. This will make it easier for you to breathe.

Don't start changing the tracheostomy tube ties that hold the tracheostomy tube in place until your doctor tells you it's safe to do so.

Instructions

1. Gather your equipment:
 - 4 to 6 cotton swabs, or as many as needed
 - A mirror
 - A nylon brush

2. Wash your hands thoroughly with soap and water or use an alcohol-based hand sanitizer.
3. Stand or sit in front of a sink with a mirror.
4. With the fingers of one hand, hold the outer cannula in place. With the fingers of your other hand, unlock the inner cannula by twisting it, then slide it out (see Figure 3). **Do not keep the inner cannula out for more than a few minutes.**



Figure 3. Unlocking the inner cannula

5. Hold the inner cannula under warm running water. Clean it with the nylon brush (see Figure 4). Once the cannula is clean, shake out the excess water.
6. Slide the inner cannula back into the outer cannula right after you clean it. This will prevent the outer cannula from becoming blocked with secretions.
7. Gently clean the skin around your tracheostomy tube with moistened cotton swabs.

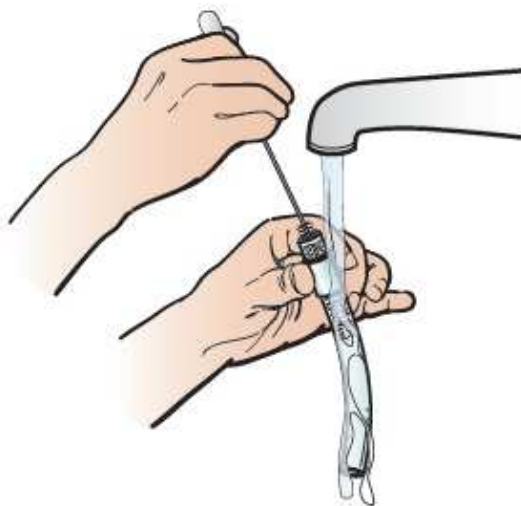


Figure 4. Cleaning the inner cannula

If you will have a tracheostomy for an extended period of time, your doctor or nurse will change the entire tracheostomy tube during office visits. This includes the

inner and outer cannulas and the tracheostomy tube ties that keep your tracheostomy tube in place. **Do not do this on your own since you may not be able to reinsert it into your trachea.**

Moisturizing the air you breathe

Placing a moist piece of gauze in front of your tracheostomy tube will help filter, moisturize, and warm the air you breathe in. Try to do this as often as possible. This will keep your secretions fluid and will make it easier to suction them and clean your trachea.

Instructions

1. Gather your equipment.
 - One 4 inch x 4 inch piece of gauze
 - Neck string
 - Scissors
2. Wash your hands thoroughly with soap and water or use an alcohol-based hand sanitizer.
3. Stand or sit in front of a sink with a mirror.
4. Moisten the 4 x 4 piece of gauze with water. Cut a piece of neck string that's long enough to fit comfortably around your neck.
5. Open the gauze and drape it over the neck string. Put the gauze in front of the tracheostomy tube opening (see Figure 5). Tie the neck string in a bow at the back of your neck to keep it in place.

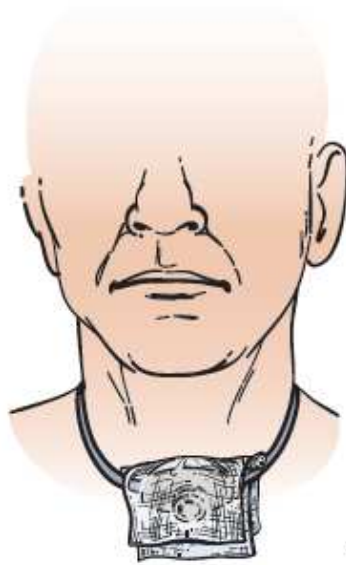


Figure 5. Moistened gauze placed over the tracheostomy tube opening

6. Keep the gauze in place until it becomes dry. Once the gauze is dry, throw it away. Repeat the steps above to replace it.

Removal of the Tracheostomy Tube

Your doctor will remove your tracheostomy tube when you no longer need it. You won't need to have surgery to do this. The opening will close on its own and you won't need sutures (stitches).

Before the tube is removed, a closed inner cannula will be inserted in your tracheostomy tube. You will have the closed inner cannula in place for at least 24 hours. If you're able to breathe normally with the closed inner cannula in place, your tube will be removed. You won't feel any pain when the tube is taken out.

After the tube is removed, your doctor will put a dressing (bandage) over the tracheostomy site. Keep the dressing on the site until the opening is completely closed. This usually takes about 1 to 2 weeks.

When you cough or speak, put your finger over the tracheostomy site dressing. This will help the site to close.

Change the dressing over the tracheostomy site twice a day, or more often if it gets dirty. Each time you change the dressing, clean the skin at the site with moistened pieces of 4 x 4 gauze. Once the tracheostomy site is closed, you won't need to wear a dressing.

Important Points

- **If you have trouble breathing, remove the inner cannula right away.** If your breathing improves, the inner cannula was most likely clogged. Clean the inner cannula well and reinsert it. **If your breathing does not get better, call 911 or go to the nearest emergency room immediately.**
- If the entire tracheostomy tube is removed by accident, do not panic. The tract will stay open for hours to days. **Call 911 or go to the nearest emergency room immediately to have it put back in.**

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Caring for Your Tracheostomy - Last updated on June 5, 2017

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PATIENT & CAREGIVER EDUCATION

Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E

This information will help you identify medications that contain aspirin, other NSAIDs, or vitamin E. It's important to stop taking these medications before many cancer treatments. They affect your platelets (blood cells that clot to prevent bleeding) and can increase your risk of bleeding during treatment.

Other dietary supplements (such as other vitamins and herbal remedies) can also affect your cancer treatment. For more information, read the resource *Herbal Remedies and Cancer Treatment* (www.mskcc.org/pe/herbal_remedies).

Instructions Before Your Cancer Treatment

If you take aspirin, other NSAIDs, or vitamin E, tell your healthcare provider. They'll tell you if you need to stop taking it. You'll also find instructions in the information about your treatment. Read the "Examples of Medications" section to see if your medications contain aspirin, other NSAIDs, or vitamin E.

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 medication that contains aspirin, you may need to change your dose or stop taking it 7 days before your surgery. Follow your healthcare provider's instructions. **Don't stop taking aspirin unless your**

healthcare provider tells you to.

- If you take vitamin E or a supplement that contains vitamin E, stop taking it 7 days before your surgery or as directed by your healthcare provider.
- If you take an NSAID or a medication that contains 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 medication that contains aspirin, you may need to stop taking it 5 days before your procedure. Follow your healthcare provider's instructions. **Don't stop taking aspirin unless your healthcare provider tells you to.**
- If you take an NSAID or a medication that contains 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. Whether you're just starting chemotherapy or have been getting it, talk with your healthcare provider before taking aspirin, other NSAIDs, or vitamin E.

Examples of Medications

Medications are often called by their brand name. This can make it hard to know their ingredients. The lists below can help you identify medications that contain aspirin, other NSAIDs, or vitamin E.

These lists include the most common products, but there are others. **Make sure your healthcare provider always knows all the prescription and over-**

the-counter (not prescription) medications you're taking, including patches and creams.

| Common Medications Containing Aspirin | | | |
|--|--|-------------------------------------|-------------------------------------|
| Aggrenox® | Cama® Arthritis Pain Reliever | Heartline® | Robaxisal® Tablets |
| Alka Seltzer® | COPE® | Headrin® | Roxiprin® |
| Anacin® | Dasin® | Isollyl® | Saleta® |
| Arthritis Pain Formula | Easprin® | Lanorinal® | Salocol® |
| Arthritis Foundation Pain Reliever® | Ecotrin® (most formulations) | Lortab® ASA Tablets | Sodol® |
| ASA Enseals® | Empirin® Aspirin (most formulations) | Magnaprin® | Soma® Compound Tablets |
| ASA Suppositories® | Epromate® | Marnal® | Soma® Compound with Codeine Tablets |
| Ascriptin® and Ascriptin A/D® | Equagesic Tablets | Micrainin® | St. Joseph® Adult Chewable Aspirin |
| Aspergum® | Equazine® | Momentum® | Supac® |
| Asprimox® | Excedrin® Extra-Strength Analgesic Tablets and Caplets | Norgesic Forte® (most formulations) | Synalgos®-DC Capsules |
| Axotal® | Excedrin® Migraine | Norwich® Aspirin | Tenol-Plus® |
| Azdone® | Fiorgen® | PAC® Analgesic Tablets | Trigesic® |
| Bayer® (most formulations) | Fiorinal® (most formulations) | Orphengesic® | Talwin® Compound |
| BC® Powder and Cold formulations | Fiortal® | Painaid® | Vanquish® Analgesic Caplets |
| Bufferin® (most formulations) | Gelpirin® | Panasal® | Wesprin® Buffered |
| Buffets II® | Genprin® | Percodan® Tablets | Zee-Seltzer® |
| Buffex® | Gensan® | Persistin® | ZORprin® |

Common NSAID Medications That Don't Contain Aspirin

| | | | |
|---|---------------|----------------|------------------|
| Advil® | Duexis® | Mefenamic Acid | PediaCare Fever® |
| Advil Migraine® | Etodolac® | Meloxicam | Piroxicam |
| Aleve® | Feldene® | Menadol® | Ponstel® |
| Anaprox DS® | Fenoprofen | Midol® | Relafen® |
| Ansaid® | Flurbiprofen | Mobic® | Saleto 200® |
| Arthrotec® | Genpril® | Motrin® | Sulindac |
| Bayer® Select Pain Relief Formula Caplets | Ibuprofen | Nabumetone | Toradol® |
| Celebrex® | Indomethacin | Nalfon® | Treximet® |
| Celecoxib | Indocin® | Naproxen | Vicoprofen® |
| Children's Motrin® | Ketoprofen | Naprosyn® | Vimovo® |
| Clinoril® | Ketorolac | Nuprin® | Voltaren® |
| Daypro® | Lodine® | Orudis® | |
| Diclofenac | Meclofenamate | Oxaprozin | |

Products Containing Vitamin E

| | | | |
|-------------|-----------|--------------------|---------------|
| Amino-Opt-E | Aquavit | E-400 IU | E complex-600 |
| Aquasol E | D'alpha E | E-1000 IU Softgels | Vita-Plus E |

Most multivitamins contain vitamin E. If you take a multivitamin, check the label.

About Acetaminophen

Acetaminophen (Tylenol®) is generally safe to take during your cancer treatment. It doesn't affect platelets, so it won't increase your chance of bleeding. But, talk with your healthcare provider before taking acetaminophen if you're getting chemotherapy.

| Medications Containing Acetaminophen | | | |
|---|----------------|-----------------------------|--------------|
| Acephen® | Esgic® | Percocet® | Vanquish® |
| Aceta® with Codeine | Excedrin P.M.® | Primlev® | Vicodin® |
| Acetaminophen with Codeine | Fiorcet® | Repan® | Wygesic® |
| Aspirin-Free Anacin® | Lorcet® | Roxicet® | Xartemis XR® |
| Arthritis Pain Formula® Aspirin-Free | Lortab® | Talacen® | Xodol® |
| Datril® | Naldegesic® | Tempra® | Zydone® |
| Di-Gesic® | Norco® | Tylenol® | |
| Endocet® | Panadol® | Tylenol® with Codeine No. 3 | |

Read the labels on all your medications

Acetaminophen is safe when used as directed. But, there's a limit to how much you can take in a day. It's possible to take too much without knowing because it's in many different prescription and over-the-counter medications. It's often an ingredient in pain relievers, fever reducers, sleep aids, and cough, cold, and allergy medications.

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 | | |
|---|--------|-------------|
| APAP | AC | Acetaminop |
| Acetamin | Acetam | Acetaminoph |

Always read and follow the label on the product you're taking. Don't take more than 1 medication that contains acetaminophen at a time without talking with a member of your healthcare team.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E - Last updated on September 21, 2020

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

| Type of Food | Include | Avoid |
|----------------------------|---|---|
| Sweets and Desserts | <ul style="list-style-type: none"> • Smooth custards and puddings • Sherbet, ice cream, and frozen yogurt • Flavored fruit ices, popsicles, fruit whips, flavored gelatins • Clear jelly, honey, sugar, and sugar substitutes • All syrups (such as chocolate syrup and maple syrup) • Mousse | <ul style="list-style-type: none"> • All others, including anything made with coconuts, nuts, or whole fruits |
| Beverages | <ul style="list-style-type: none"> • All beverages | <ul style="list-style-type: none"> • Any containing raw eggs |
| Miscellaneous | <ul style="list-style-type: none"> • Salt, pepper, ketchup, mustard, and mayonnaise • Herbs and spices • Liquid sauces, such as barbeque or teriyaki sauce | <ul style="list-style-type: none"> • Nuts • Coconuts • Olives • Pickles • Seeds <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 |
|----------------------------|--|
| Breakfast | <ul style="list-style-type: none"> • Fruit juice without pulp • Puréed banana • Cooked cereal with milk • Puréed cooked egg • Milk • Coffee or tea |
| Mid-morning snack | <ul style="list-style-type: none"> • Vanilla or flavored yogurt |
| Lunch | <ul style="list-style-type: none"> • Any puréed or strained soup • Puréed chicken salad • Puréed green beans • Puréed fruit • Puréed rice • Tea with sugar |
| Mid-afternoon snack | <ul style="list-style-type: none"> • Ensure plus |
| Dinner | <ul style="list-style-type: none"> • Puréed or strained soup • Puréed meat or fish • Mashed potato • Puréed vegetables with olive oil or butter • Applesauce |
| Evening Snack | <ul style="list-style-type: none"> • Vanilla Pudding |

Mechanical soft diet

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

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

| Type of Food | Include | Avoid |
|---------------------------------|--|---|
| Meat or Meat Substitutes | <ul style="list-style-type: none"> • Ground, finely chopped tender meat or poultry with sauce or gravy • Soft chicken salad, creamed tuna salad (without celery), and egg salad (without celery) • Diced meat loaf, meatballs, salmon loaf, and croquettes • Casseroles • Diced baked or broiled fish (fillet of sole, roughy, flounder, and salmon) • Well-cooked beans and tofu • Scrambled eggs or diced hard-cooked eggs • Cheese quiche without the crust | <ul style="list-style-type: none"> • Whole cuts or diced meat or poultry • Hot dogs, sausage, knockwurst, bratwurst, pork chops, steak, and bacon • Fried fish • Haddock, halibut, and tuna • Shellfish • Chili with beans |
| Fats | <ul style="list-style-type: none"> • Butter, margarine, and cooking fats and oils • Gravy, whipped toppings, salad dressings, and mayonnaise • Finely chopped olives • Avocado • Creamy nut butters | <ul style="list-style-type: none"> • Nuts (such as almonds, cashews, peanuts, and pecans) • Seeds • Coconuts • Whole olives • Crunchy nut butters |
| Soups | <ul style="list-style-type: none"> • Broth and bouillon • Soups with puréed or strained vegetables • Strained or puréed cream soups • Diced chicken noodle soup | <ul style="list-style-type: none"> • Any soups with chunks of meat or crunchy vegetables |
| Sweets and Desserts | <ul style="list-style-type: none"> • Seedless jellies, honey, sugar, sugar substitutes, and syrup • Ice cream, frozen yogurt, puddings, and custards • Pies (without crust), pastries, and cakes without seeds, nuts, or dried fruits moistened with a milk or seedless jelly • Diced soft cookies moistened with milk • Mousse | <ul style="list-style-type: none"> • Any sweets and desserts with coconut, nuts, or dried fruits • Granola bars • Pies with crust • Chewy, crunchy, or hard candy • Jelly or jam with seeds • Crunchy cookies • Licorice, taffy, and caramel |
| Drinks | <ul style="list-style-type: none"> • Water, coffee, tea, carbonated drinks, hot cocoa, fruit punch, and coconut water • Gatorade®, Pedialyte®, Isopure® lemonade without pulp | <ul style="list-style-type: none"> • Any drink with raw eggs |
| Miscellaneous | <ul style="list-style-type: none"> • Salt, pepper, ketchup, mustard, and mayonnaise • Herbs and spices • Jelly | <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 |
|----------------------------|--|
| Breakfast | <ul style="list-style-type: none">• Soft, diced peaches• Cereal softened in milk• Diced, soft pancakes with syrup and butter• Scrambled eggs• A soft butter roll cut into small pieces |
| Mid-morning snack | <ul style="list-style-type: none">• Yogurt |
| Lunch | <ul style="list-style-type: none">• Vegetable barley soup• Chicken salad or egg salad• Diced, well-cooked spinach• Canned fruit cocktail |
| Mid-afternoon snack | <ul style="list-style-type: none">• Ensure plus |
| Dinner | <ul style="list-style-type: none">• Soup• Baked fish filet (boneless) with sauce• Diced, soft potatoes• Diced, well-cooked broccoli with olive oil or butter• Canned, diced pears |
| Evening Snack | <ul style="list-style-type: none">• Rice Pudding |

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 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

- 2/3 cup of vanilla yogurt
- 2/3 cup of vanilla ice cream or frozen yogurt
- 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

- 2/3 cup of vanilla yogurt
- 1/2 cup of fruit nectar
- 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
- 1/2 cup of milk or fortified milk (you can also use 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.

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.

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.

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.

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.

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.

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.

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.

Main Dishes

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.

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

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

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.

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.

Desserts

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.

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.



PATIENT & CAREGIVER EDUCATION

Herbal Remedies and Cancer Treatment

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

One week before you have surgery or start chemotherapy or radiation therapy, you must stop taking any herbal or botanical (plant-based) home remedies or other dietary supplements. This is because they can:

- Interact with your other medications.
- Increase or lower your blood pressure.
- Thin your blood and increase your risk of bleeding.
- Make radiation therapy less effective.
- Increase the effects of sedation or anesthesia (medications to make you sleepy).

You can continue to use herbs in your food and drinks, such as using spices in cooking and drinking tea. However, you must stop taking herbal supplements before your treatment. Herbal supplements are stronger than the herbs you would use in cooking.

Common Herbal Supplements and Their Effects

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

Echinacea

- Can cause an allergic reaction, such as a rash or trouble breathing.
- Can lower the effects of medications used to weaken the immune system.

Garlic

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

Ginkgo (also known as *Ginkgo biloba*)

- Can increase your risk of bleeding.

Ginseng

- Can lower the effects of sedation or anesthesia.
- Can increase your risk of bleeding.
- Can lower your blood glucose (sugar) level.

Turmeric

- Can make chemotherapy less effective.

St. John's Wort

- Can interact with medications given during surgery.
- Can make your skin more sensitive to radiation or laser treatment.

Valerian

- Can increase the effects of sedation or anesthesia.

Herbal formulas

- Herbal formulas contain different herbs. We don't know their side effects. You must also stop taking these products 1 week before treatment. Do not start taking herbal formulas again until your doctor tells you it's safe.

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

For more information about herbs and botanicals, visit the Memorial Sloan Kettering (MSK) Integrative Medicine Service website at www.aboutherb.com.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Herbal Remedies and Cancer Treatment - Last updated on June 24, 2019
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Preventing Trismus

This information will help you prevent trismus (lockjaw) during and after your surgery or radiation therapy. Trismus is when you can't open your mouth as wide as usual.

About Your Jaw

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

- Your **maxilla** is your upper jaw bone.
- Your **mandible** is your lower jaw bone.
- 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.

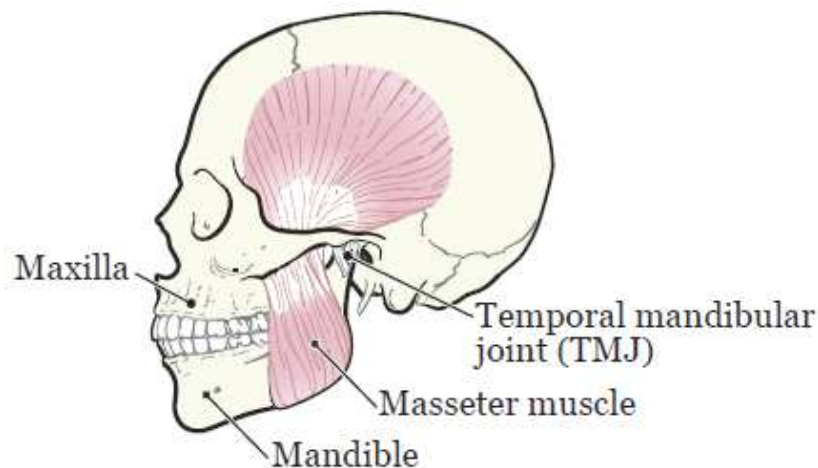


Figure 1. The bones and muscles of your jaw

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), which is about the width of 3 fingers (see Figure 2).



Figure 2. Normal width of an open mouth

About Trismus

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

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

Trismus can happen if you develop fibrosis (scarring) as the tissues start to heal after surgery. Fibrosis can also build up years after radiation therapy.

When you can't open your mouth well, it's hard for your healthcare provider to examine the area. You may also 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 for you to eat and drink.
- Talking.

- Kissing.
- Having a breathing tube placed, such as if you ever need general anesthesia (medication to make you sleep during a surgery or procedure).
- Having routine dental treatment.

Once trismus develops, it's very hard to treat. That's why it's important to prevent trismus and treat it as early as possible.

How to Prevent Trismus

There are 4 main ways to help prevent trismus:

- Massage your jaw muscles.
- Exercise your jaw muscles.
- Keep good posture.
- Keep good oral hygiene.

Even if you don't have any symptoms, you should do these things to help prevent problems. Follow the instructions in the sections below. If you have had surgery, ask your healthcare provider if it's safe before you start.

It may be helpful to use a timer or clock to make sure you hold the stretches long enough. Remember to breathe normally and don't hold your breath. If you feel pain, numbness, or tingling, stop right away and call your healthcare provider's office.

Massage your jaw muscles

Place your index (pointer) and middle finger on your cheek bone. 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. Massaging your jaw muscles

Exercise your jaw muscles

Do these exercises **3 times every day**. You can do them while sitting or standing. Use a mirror to help you do them correctly.

These movements should give you a good stretch, but they shouldn't cause pain. If an exercise is causing pain or discomfort, try doing the stretch more lightly. If you still have pain or discomfort, contact your healthcare provider.

Active range of motion and stretching exercises

Hold your head still while doing these exercises. Repeat these steps 5 times.

1. Open your mouth as wide as you can, until you feel a good stretch but no pain (see Figure 4). Hold this stretch for 10 seconds.



Figure 4. Mouth open wide

2. Move your lower jaw to the left (see Figure 5). Hold this stretch for 3 seconds.
3. Move your lower jaw to the right (see Figure 6). Hold this stretch for 3 seconds.



Figure 5. Jaw moved to the left



Figure 6. Jaw moved to the right

4. Move your lower jaw in a circle to the left.
5. Move your lower jaw in a circle to the right.

Passive stretching exercise

Repeat these steps 5 times.

1. Place your thumb on your top teeth in the middle of your jaw.
2. Place the index finger of your other hand on your bottom teeth in the middle of your jaw (see Figure 7).
3. Open your mouth as wide as you can. Use your fingers to give extra resistance to keep it from closing. You should feel a light stretch, but not pain. Hold this stretch for _____ seconds.



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

Do these exercises 2 times every day. You can do them while sitting or standing with your arms at your sides.

Neck stretch

Repeat these steps 5 times. Hold each stretch for 30 seconds.

1. Bend your head forward (see Figure 9).
2. Bend your head backward (see Figure 10).



Figure 9. Head bent forward



Figure 10. Head bent back

3. Turn your head to the right (see Figure 11).

4. Turn your head to the left (see Figure 12).

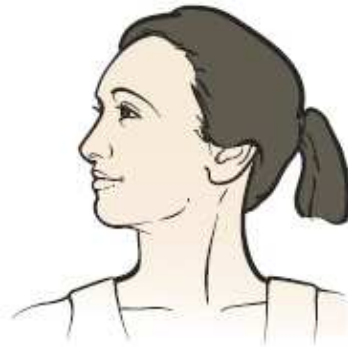


Figure 11. Head turned to the right

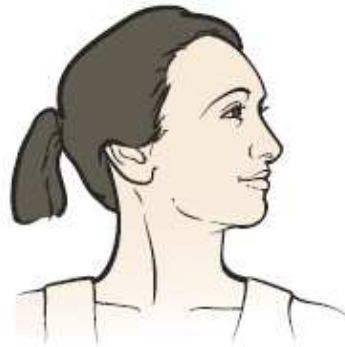


Figure 12. Head turned to the left

5. Bring your left ear to your left shoulder (see Figure 13).

6. Bring your right ear to your right shoulder (see Figure 14).

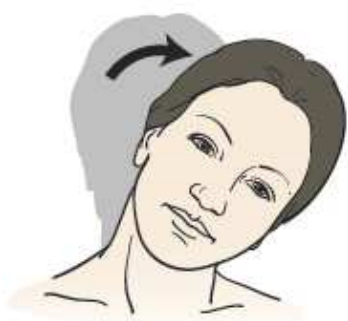


Figure 13. Head bent to the left

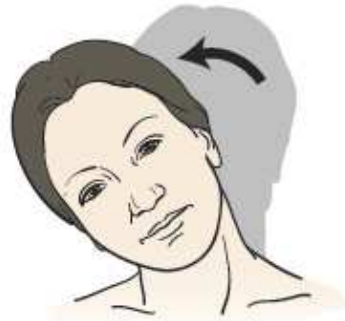


Figure 14. Head bent to the right

Chin tuck

Repeat these steps 5 times.

1. While looking forward, tuck your chin.
2. Pull your head back to line up your ears with your shoulders (see Figure 15). Hold this position for 3 seconds.

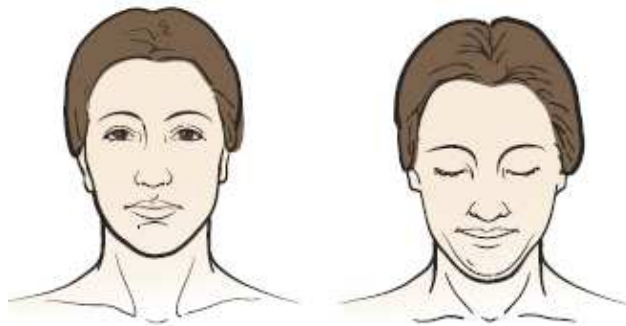


Figure 15. Chin tucked and head pulled back

Shoulder blade pinch

Repeat these steps 5 times.

1. Tuck your chin as described in the chin tuck exercise above.
2. Pinch your shoulder blades together as tightly as possible (see Figure 16).
3. Hold this position for 3 seconds.



Figure 16. Shoulder blades pinched 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. Don't sleep with it in your mouth.

- Floss your teeth once daily before you go to bed.

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:

- Speech and swallowing specialists, physical therapists, or both. They can help you keep your ability to open your mouth and get back any ability you have lost. They use many techniques, such as exercise, stretching, and massage. They may also recommend special devices to help you open your mouth.
- Rehabilitation doctors. They will evaluate 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 healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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