

About Your Thoracoabdominal Surgery at MSK Kids

This guide will help you get ready for your thoracoabdominal (thor-A-koh-ab-DAH-mih-nul) surgery at MSK. It will also help you understand what to expect during your recovery.

Use this guide as a source of information in the days leading up to your surgery. Bring it with you on the day of your surgery. You and your care team will refer to it as you learn more about your recovery.

In this resource, the words “you” and “your” refer to you or your child.

Your care team

Doctor: _____

Nurse: _____

Phone number: _____

Fax number: _____



Visit www.mskcc.org/pe/thoracoabdominal_surgery to view this guide online.



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About your thoracoabdominal surgery

About neuroblastoma

Neuroblastoma is a rare pediatric cancer that develops from an early form of nerve cells called neuroblasts. Normally, neuroblasts develop into nerve cells to build your nervous system before you're born. Neuroblastoma happens when your neuroblasts start to grow out of control and form a tumor.

Treatment plans for neuroblastoma depend on many things, including where the tumor is in your body. If it's in the upper part of your abdomen (belly), your doctor may recommend thoracoabdominal surgery as part of your treatment plan.

About thoracoabdominal surgery

Thoracoabdominal surgery is a common surgical treatment for neuroblastoma in the upper part of your abdomen. It can also be used to help treat other types of tumors, but this is less common. Your surgeon will talk with you if you're having thoracoabdominal surgery for a cancer other than neuroblastoma.

During your thoracoabdominal surgery, your surgeon will make a diagonal incision (surgical cut) from the lower part of your chest (thorax) to the upper part of your abdomen (see Figure 1). This helps them see the area clearly so they can safely remove the tumor.

Getting ready for your thoracoabdominal surgery

You and your care team will work together to get ready for your surgery. It's important to tell us if:

- You take prescription or over-the-counter medications or dietary supplements. You may need to stop taking some of your medications and supplements before your surgery. They could increase your risk for complications during surgery. Vitamins and herbal remedies are examples of dietary supplements.
- You have any allergies.
- You've had a problem with anesthesia in the past.

Using MyMSK

MyMSK (my.mskcc.org) is your MSK patient portal. You can use MyMSK to send and receive messages from your care 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.

About your MyMSK Goals to Discharge Checklist

When your surgery is over, you'll focus on getting well enough to leave the hospital. We'll send a Goals to Discharge Checklist to your MyMSK account to help you track how you're doing. You can use this electronic checklist to

see the goals you need to meet before leaving the hospital and update your progress throughout the day. Your updates also send alerts to your surgical team about your progress.

For more information, read the resource *How to Use Your MyMSK Goals to Discharge Checklist*. You can find it online at www.mskcc.org/pe/goals_discharge_checklist or ask your healthcare provider for a copy.

About Enhanced Recovery After Surgery (ERAS)

ERAS is a program to help you get better faster after your surgery. As part of the ERAS program, it's important to do certain things before and after your surgery. Before your surgery, make sure you're ready by doing the following things:

- **Read this guide.** It will help you know what to expect before, during, and after your surgery. If you have questions, write them down. You can ask your healthcare provider at your next appointment, or you can call their office.
- **Exercise and follow a healthy diet.** This will help get your body ready for your surgery.

After your surgery, help yourself recover more quickly by doing the following things:

- **Read your recovery pathway.** This is a written educational resource your healthcare provider will give you. It has goals for your recovery and will help you know what to do and expect on each day during your recovery.
- **Start moving around as soon as you can.** The sooner you get out of bed and move, crawl, or walk, the quicker you can get back to your normal activities.

Presurgical testing

You'll have a presurgical testing (PST) or pediatric presurgical testing (PPST) appointment before your surgery. You'll get a reminder from your surgeon's office with the appointment date, time, and location.

You can eat and take your usual medicine(s) the day of your appointment.

It's helpful to bring these things to your appointment:

- All the medicines you're taking, including prescription and over-the-counter medicines, patches, and creams.
- Results of any medical tests done outside of MSK in the past year, if you have them. Examples include results from a cardiac stress test, echocardiogram, or carotid doppler study.
- The names and telephone numbers of your healthcare providers.

You'll meet with advance practice provider (APP) during your appointment. They work closely with your surgical team.

Your APP will review your medical and surgical history with you. You may have tests to plan your care, such as:

- An electrocardiogram (EKG) to check your heart rhythm
- A chest X-ray
- Blood tests

Your APP may recommend that you see other healthcare providers. They'll also talk with you about which medicine(s) to take the morning of your surgery.

The Pediatric Pain and Palliative Care Team (PACT)

The Pediatric Pain and Palliative Care Team (PACT) is a team of doctors and NPs who support children and families facing serious illnesses at MSK Kids.

The goal of palliative care is to help you and your family during your treatment. We help you with physical, mental, social, and spiritual challenges. Palliative care is important and helpful for everyone: All ages, stages of illness, and if you're in the hospital or an outpatient.

The PACT respects your choices, values, and cultural beliefs. We encourage you and your family to be active in making decisions about your goals and plans of care. We'll work together with all members of your care team. Our goal is to make sure you and your family have the support you need to live as well as possible.

Integrative Medicine

MSK's Integrative Medicine service offers help with discomfort and relaxation and improve your overall well-being. Our specialists are trained and certified in integrative health practices such as:

- Massage therapy
- Music therapy
- Dance therapy
- Yoga
- Meditation
- Mind-body fitness
- Acupuncture

During your first Integrative Medicine visit, an Integrative Medicine Specialist will talk with you about the integrative medicine services available at MSK.

They'll also talk with you about:

- Different types of integrative medicine and holistic techniques.
- How to make use of these therapies during your stay.
- How they can help you and your family before surgery and during recovery.

Help your body get ready for surgery

You can recover faster and easier if you help your body be in its best shape for your surgery. This section has examples of things you can do to get your body ready for surgery. Your care team will help you decide which activities are best for you.

Practice breathing and coughing

Practice taking deep breaths and coughing before your surgery. You can do this by:

- Walking around or playing.
- Blowing bubbles or blowing a tissue in the air.
- Using your incentive spirometer, if your care team gave you one.

Exercise

Try to do aerobic exercise (exercise that makes your heart beat faster) every day. Examples of aerobic exercise include walking, swimming, or biking. MSK also offers free virtual classes for all ages that can help you be active. Ask your healthcare provider for more information.

Practice meditation and mindfulness

Mindful breathing, meditation, yoga, movement practice, massage, and acupuncture techniques can support you as you get ready for surgery.

Our Integrative Medicine service videos can help you find the right activities to add into your daily routines before your surgery. You can find it at www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/integrative-medicine/multimedia. You can also visit www.mskcc.org/meditation to see guided meditation videos made by our expert mind-body specialists.

Follow a healthy diet

Talk with an MSK Kids dietitian to talk about how to get ready for surgery. You can learn how to make sure your nutrition is the best it can be. If you're getting other cancer treatments before your surgery, they can cause taste changes, appetite loss, and trouble digesting food. This can make it hard to eat enough food, which can lead to weight loss.

Your outpatient MSK Kids dietitian can work with you to on a plan that helps with eating challenges. It's also helpful to follow these general guidelines:

- Have small, frequent meals. For example, have a half-sized meal every 2 to 3 hours. Aim for 6 to 8 small meals a day instead of 3 large meals.
- Make and follow a meal schedule. Don't wait to eat until you're hungry. Put the schedule in a place for everyone to see.
- Keep your favorite go-to foods in your home where you can get to them easily.
- Buy single-serving food items that you can eat easily, such as drinkable yogurt smoothies or cheese sticks.
- Cook in batches so you have leftovers.
 - Keep 1 extra serving in your refrigerator for the next day, but not longer.
 - Freeze the other extra servings. When you're ready to use a serving, thaw it in the refrigerator or microwave, not on the kitchen counter. Then reheat it until it's steaming hot.
- Include many different food groups and food types in your diet, unless your doctor or dietitian tells you not to.
- Sometimes drinking is easier than eating. Try getting more calories from liquids than solid foods. For example, have milkshakes or nutritional supplements such as PediaSure® or Carnation Breakfast Essentials®.

- Keep your dining experience enjoyable, with no stress. Try having family mealtimes or group snack times with family.
- Think of your nutrition as being just as important as your medications.

Remember to choose foods that are high in calories and protein. Talk with your MSK Kids dietitian about foods that work best based on what you like or your meal patterns.

Have a carbohydrate drink on the morning of your surgery

One of your healthcare providers will give you a bottle of CF(Preop)[®] or Ensure[®] Pre-Surgery to drink the morning of your surgery. These are carbohydrate drinks that make fasting (not eating) before surgery less stressful for your body. This helps you heal and recover better after surgery.

Meet with other healthcare professionals, if needed

MSK has many different healthcare professionals who can help you before, during, and after your cancer treatment.

- **Social workers** can help you cope with the emotional, social, and physical effects of a cancer diagnosis. Our social workers provide counseling and practical assistance. They help families cope with their child's disease, improve communication with family and friends, share information on community resources, and help adjust to medical treatment.
- **Child life specialists** are trained professionals who are experts in human growth and development. If you're worried or stressed about your procedure, they can help you plan ways to be more comfortable and relaxed. MSK's child life specialists have a variety of backgrounds and interests, including education, psychology, fine arts, and art therapy. Together, our skills and certifications offer a full range of child life services that educate and empower patients and their families during an illness.

- Counselors and therapists can meet with you and your family members and provide counseling for emotional problems related to coping with cancer. MSK's counseling center also has support groups that meet regularly.

Your healthcare provider may offer you a referral to these services. You can also ask for a referral if you're interested.

Arrange for housing, if needed

The Ronald McDonald House provides temporary housing for out-of-town pediatric cancer patients and their families. MSK also has arrangements with several local hotels and housing facilities that may give you a special lower rate. Your social worker can talk with you about your options and help you make reservations. You can also call 212-639-8315 to talk with the Pediatric Patient Services Coordinator.

Fill out a a Health Care Proxy form, if needed

If you're age 18 or older and haven't already completed a Health Care Proxy form, we recommend you do now. If you already filled one out or have any other advance directives, bring them to your next appointment. A health care proxy is a legal document. It says who will speak for you if you cannot communicate for yourself. This person is called your health care agent.

- To learn about health care proxies and other advance directives, read *Advance Care Planning for Cancer Patients and Their Loved ones*. You can find it at www.mskcc.org/pe/advance_care_planning or ask your healthcare provider for a copy.
- To learn about being a health care agent, read *How to Be a Health Care Agent*. You can find it at www.mskcc.org/pe/health_care_agent or ask your healthcare provider for a copy.

7 days before your thoracoabdominal surgery

Follow your healthcare provider's instructions for taking aspirin

Aspirin can cause bleeding. If you take aspirin or a medicine that has aspirin, you may need to change your dose or stop taking it 7 days before your surgery. Follow your healthcare provider's instructions. **Do not stop taking aspirin unless they tell you to.**

To learn more, read *How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil*. You can find it in the "Educational Resources" section of this guide.

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

Vitamin E, multivitamins, herbal remedies, and other dietary supplements can cause bleeding. Stop taking them 7 days before your surgery. If your healthcare provider gives you other instructions, follow those instead.

To learn more read *Herbal Remedies and Cancer Treatment*. You can find it in the "Educational Resources" section of this guide.

Have imaging scans, if needed

You'll need to have imaging scans to help your healthcare providers plan your surgery. If you have them done somewhere other than MSK, your healthcare provider may ask you to bring the disc with copies of the imaging scans to one of your appointments.

2 days before your thoracoabdominal surgery

Stop taking nonsteroidal anti-inflammatory drugs (NSAIDs)

NSAIDs, such as ibuprofen (Advil® and Motrin®) and naproxen (Aleve®), can cause bleeding. Stop taking them 2 days before your surgery. If your healthcare provider gives you other instructions, follow those instead.

To learn more, read *How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil*. You can find it in the “Educational Resources” section of this guide.

1 day before your thoracoabdominal surgery

Note the time of your surgery

A staff member from the Admitting Office will call you after 2 p.m. 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 4 p.m., call 212-639-7002.

The staff member will tell you what time to arrive at the hospital for your surgery. They'll also remind you where to go. For information about MSK's locations, including directions and parking options, visit our Locations Directory at www.mskcc.org/locations/directory.

Shower or bathe with 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 or bathing with it before your surgery will help lower your risk of infection after surgery.

Your healthcare provider will give you a bottle of 4% CHG solution during one of your appointments before surgery. You can also buy it at your local pharmacy without a prescription. Shower or bathe with it the night before or morning of your surgery.

1. Wash your hair with your usual shampoo and conditioner. Rinse your head well.
2. Wash your face and genital (groin) area with your usual soap. 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. Do not 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.

Do not put on any lotion, cream, deodorant, makeup, powder, perfume, or cologne after your shower.

Instructions for eating and drinking before surgery



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

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

Notes _____

The morning of your thoracoabdominal surgery

Instructions for drinking before your surgery

You can keep drinking formula, breastmilk, and clear liquids after midnight. Follow the instructions in the table below. It's OK to brush your teeth and take your medications with a small sip of water.

Type of liquid	Amount to drink	When to stop
Formula	<ul style="list-style-type: none">• Any amount	Stop drinking formula 6 hours before your scheduled arrival time.
Breastmilk	<ul style="list-style-type: none">• Any amount	Stop drinking breastmilk 4 hours before your scheduled arrival time.
Clear liquids such as water, fruit juice without pulp, carbonated (fizzy) drinks, tea without milk, and coffee without milk	<ul style="list-style-type: none">• Ages 0 to 3: up to 4 ounces (120 milliliters)• Ages 4 to 8: up to 6 ounces (180 milliliters)• Ages 9 to 13: up to 8 ounces (240 milliliters)• Ages 13 and older: up to 12 ounces (360 milliliters)	Stop drinking clear liquids 2 hours before your scheduled arrival time.



Finish the carbohydrate drink your healthcare provider gave you 2 hours before your scheduled arrival time. Your healthcare provider will tell you the amount to drink.



Do not drink anything starting 2 hours before your scheduled arrival time. This includes formula, breastmilk, water, and other clear liquids.

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.

Things to remember

- If you wear contact lenses, wear your glasses instead. Wearing contact lenses during surgery can damage your eyes.
- Don't wear any metal objects. Remove all jewelry, including body piercings. The tools used during your surgery can cause burns if they touch metal.
- Don't wear any lotion, cream, deodorant, makeup, powder, perfume, or cologne.

What to bring

- 1 comfort item (such as a blanket or teddy bear).
- 1 or 2 portable electronic devices (such as a smartphone or tablet) and their charger(s).
- All the medications you're taking, including prescription and over-the-counter medications, supplements, patches, and creams.
- Your incentive spirometer, if you have one.
- Your Health Care Proxy form and other advance directives, if you completed them.
- This guide. Your care team will use it to teach you how to care for yourself after surgery.

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.

Many staff members will ask you to say and spell your name and birth date. 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 (12 a.m.) and the time you took them. Make sure to include prescription and over-the-counter medicines, patches, and creams.

Your nurse may place an intravenous (IV) line in one of your veins, usually in your arm or hand. If your nurse does not place the IV, your anesthesiologist (A-nes-THEE-zee-AH-loh-jist) 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 either walk into the operating room or a staff member will bring you there on a stretcher. A member of the operating room team will help you onto the operating bed.

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

During your surgery

After you're fully asleep, a breathing tube will be placed into your airway to help you breathe. You'll also have a urinary (Foley) catheter placed to drain urine (pee) from your bladder.

Once your surgery is finished, your incision(s) will be closed with sutures (stitches), Dermabond® (surgical glue), or Steri-Strips™ (thin pieces of surgical tape). They'll also be covered with a dressing.

In the Pediatric Intensive Care Unit (PICU) or Post-Anesthesia Care Unit (PACU)

When you wake up after your surgery, you'll be in the PICU or PACU. If you're in the PACU, a staff member will bring you to the PICU as soon as a bed is ready.

A nurse will be keeping track of your vital signs (body temperature, pulse, blood pressure, and oxygen levels). You may still have a breathing tube. If you don't, you'll be getting oxygen through a thin tube that rests below your nose or a mask that covers your nose and mouth.

Pain medicine

Right after your surgery, you'll get IV pain medicine through your implanted port, CVC, or IV line. You may get extra pain medicine through an epidural catheter or peripheral nerve catheter (nerve block). Tell one of your healthcare providers if your pain isn't managed.

You'll be able to control your pain medicine using a button called a patient-controlled analgesia (PCA) device. For more information, read the resource *Patient-Controlled Analgesia (PCA)*. You can find it online at www.mskcc.org/pe/pca or ask your healthcare provider for a copy.

Tubes and drains

You'll have 1 or more of the following tubes and drains after your surgery. Your care team will tell you what to expect.

- A chest tube. This will help drain air and liquid from the space around your lung.
- Abdominal drains. These will drain liquid from your abdomen. They'll come out of your incision and be stitched in place.
- A feeding tube. This will be used to give you nutrients.
- A breathing tube. This will help you breathe.
- An arterial line. This will keep track of your blood pressure.
- A urinary catheter. This will drain urine from your bladder. This helps your care team keep track of how much urine you're making.

Your healthcare providers will care for your tubes and drains while you're in the hospital. Most people don't have any tubes or drains by the time they're ready to leave the hospital. If you will have a tube or drain when you leave, your healthcare providers will teach you how to care for it at home. They'll also make sure you have the supplies you need.

Physical therapy and occupational therapy

If you need help moving, crawling, walking, playing, or doing self-care tasks after your surgery, a physical therapist (PT), occupational therapist (OT), or both may visit you.

- Your PT can help you move and function better after surgery. They'll help you get back the strength, balance, and coordination you need to do things like crawling, walking, climbing stairs, playing, or doing sports.

- Your OT can help you improve the skills you need to do important everyday activities. They'll help you if you have trouble with self-care tasks (such as getting dressed and brushing your teeth), play activities, or skills you need for school or work.

Your PT and OT will talk with you about how often you'll have physical therapy, occupational therapy, or both. For more information, read the resource *Staying Active Before and After Surgery for Pediatric Patients*. You can ask one of your healthcare providers for a copy or find it online at www.mskcc.org/pe/staying_active_peds.

Moving to your hospital room

How long you stay in the PICU depends on how you're recovering. Most people stay for 1 to 2 days. You'll stay in the PICU until:

- Your breathing tube and arterial line are removed, if you had them.
- You're able to get out of bed and move around.
- You're able to do breathing exercises (such as using your incentive spirometer or pinwheel).
- Your vital signs are in an acceptable range.

Once you're ready, a staff member will take you to your inpatient hospital room.

In your hospital room

The length of time you're in the hospital after your surgery depends on your recovery and your individual treatment plan. Your care team will tell you what to expect.

When you're taken to your hospital room, you'll meet one of the nurses who will care for you while you're in the hospital. While you're in the hospital, your healthcare providers will teach you how to care for yourself while you're recovering from your surgery.

You can help yourself recover more quickly by doing the following things:

- **Read your recovery pathway.** Your healthcare provider will give you a pathway with goals for your recovery if you don't already have one. It will help you know what to do and expect on each day during your recovery.
- **Start moving around as soon as you can.** The sooner you get out of bed and move, crawl, or walk, the quicker you can get back to your normal activities.
- **Exercise your lungs.** Use your incentive spirometer or pinwheel to help your lungs expand fully. This helps prevent pneumonia (lung infections).
- **Exercise your body.** Your physical and occupational therapists will teach you activities and exercises to help you get stronger.

You can use your MyMSK Goals to Discharge Checklist to track your progress during your recovery. For more information, read the resource *How to Use Your MyMSK Goals to Discharge Checklist*. You can ask your healthcare provider for a copy or find it online at www.mskcc.org/pe/goals_discharge_checklist.

Your care team will keep track of the amount of liquid draining from your chest tube and abdominal drain. Once the amount is low enough, they'll remove the tube or drain.

Managing your pain

You'll have some pain after your surgery. Your healthcare providers will create a pain plan for you so you're as comfortable as possible.

- You'll get opioid (also called narcotic) pain medicine for a little while to treat the pain from your surgery. You'll get the lowest dose and take them for the shortest amount of time needed.
- You'll get a few other types of pain medicine to make sure you're comfortable and so you can take less of the opioid medicine.
- You may get an epidural or nerve block.

The Pediatric Pain and Palliative Care Team and your anesthesiologist will talk with you about your pain plan and answer your questions.

Your healthcare providers will visit you every day to make sure your pain is as well controlled as possible. If you have pain, tell one of your healthcare providers. It's important to control your pain so you can do your breathing exercises and move around. Controlling your pain will help you recover better.

You'll get a prescription for oral pain medicine (pain medicine you swallow) before you leave the hospital. Talk with your healthcare provider about possible side effects and when to start switching to over-the-counter pain medicine. Bring your prescription pain medicine with you to your follow-up visit in clinic.

Managing pain through integrative medicine

Our Integrative Medicine specialists can support you if you're having pain after surgery. We can help you practice mindfulness and meditation through breathing exercises, mindful movement, and use of guided imagery.

Massage techniques and music therapy may provide comfort. Playfulness through dancing can shift your mood and take your focus off your pain. If

you're interested in managing pain through integrative medicine, ask a member of your care team for an Integrative Medicine consult.

Moving around and walking

Moving around and walking will help lower your risk for blood clots and pneumonia. It will also help you start passing gas and having bowel movements (pooping) again. You'll need to have a bowel movement before you're discharged from the hospital.

You can move around by walking to the sink or bathroom or around the unit. Your nurse, physical therapist, or occupational therapist will help you move around, if needed. Mindful movement therapies, such as dance therapy, tai chi, and yoga, are also available. If you're interested in mindful movement therapy, ask a member of your care team for an Integrative Medicine consult.

Exercising your lungs

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

- Use your incentive spirometer or pinwheel 10 times every hour you're awake. For more information, read *How to Use Your Incentive Spirometer*. You can find it in the "Educational Resources" section of this guide.
- Do coughing and deep breathing exercises. A member of your care team will teach you how. It's best to do these exercises soon after taking your pain medication. Holding your pillow across your incision while you do them can also help.

One of MSK's Integrative Medicine providers can also help you exercise your lungs by guiding you through breathing techniques or medicine.

Eating and drinking

You will not be able to eat or drink anything for at least 3 days after surgery. You'll get all your nutrition from liquid formula through your feeding tube. The formula is easy for your body to digest (break down) and absorb. It has all the nutrients your body needs.

Tube feeds after surgery

Your tube feeding rate is the amount of formula you get through your feeding tube every hour. It's measured in milliliters (mL) per hour.

Your goal feeding schedule is the tube feeding rate and number of hours that gives you the right amount of calories, protein, and fluids.

Your inpatient MSK Kids dietitian will calculate your goal feeding schedule based on your height and weight. At first, you'll have a low tube feeding rate. Your tube feeding rate will slowly be increased to your goal rate or schedule.

You may still be getting some nutrition from tube feedings when you're discharged from the hospital. If you are, your inpatient MSK Kids dietitian nutritionist will tell your case manager which formula and supplies you'll need at home. Your case manager will work with a home care company to have your tube feeding formula and supplies sent to your home.

If you'll have tube feedings after discharge, you'll learn how to use your tube feeding pump while you're in the hospital. Make sure you're comfortable using it before you're discharged.

Eating after surgery

Your surgery team will tell when you can start eating and drinking. This is usually a few days after surgery. At first, you'll only drink liquids. After that, you'll slowly start eating solid food as you're able to take more in.

Your inpatient MSK Kids dietitian will meet with you to talk about foods to include in your diet after surgery. It's best to choose foods high in protein so your body has the nutrients it needs to best recover after surgery. Once you start eating more solid food, your inpatient MSK Kids dietitian will talk with you. You'll set intake goals and discuss how many calories to eat in order to decrease your tube feeds.

Managing bowel changes

Some people have diarrhea (loose or watery bowel movements) while they're in the hospital after surgery. If you do, your care team will help you manage it.

Showering

Wash your face, brush your teeth, and change your pajamas every day. Ask one of your healthcare providers for help if you need it.

You'll be able to shower with help 48 hours (2 days) after your last tube or drain is removed.

Getting chemotherapy

If you're getting chemotherapy as part of your cancer treatment, you may have a chemotherapy treatment while you're in the hospital. Your care team will talk with you about what to expect. If your care team closer to home manages your chemotherapy, your MSK care team will work with them to plan and manage your treatment.

Leaving the hospital

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

Before you're discharged, your healthcare provider will write your discharge order and prescriptions. You'll also get written discharge instructions. One of your healthcare providers will review these instructions with you before you leave.

At home

Filling out your Recovery Tracker

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

Fill out your Recovery Tracker every day before midnight (12 a.m.). 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 for more information. Sometimes, we may ask you to call your surgeon's office. You can always contact your surgeon's office if you have any questions.

To learn more read *About Your Recovery Tracker*. You can find it at www.mskcc.org/pe/recovery_tracker or ask a member of your care team for a copy.

Managing your pain

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

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

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

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

Preventing and managing constipation

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

- Go to the bathroom at the same time every day. Your body will get used to going at that time. If you feel like you need to go, though, don't put it off.
- Try to use the bathroom 5 to 15 minutes after meals. After breakfast is a good time to go. The reflexes in your colon are strongest after breakfast.
- Be physically active, if you can.
- Talk with your clinical dietitian nutritionist about the amount of liquid you should drink each day. Aim to drink that much every day, if you can.
 - Choose liquids such as water, juices (such as prune, grape, or pear juice), soups, and ice cream shakes.
 - Avoid liquids with caffeine (such as coffee and soda). Caffeine can pull fluid out of your body.
- Slowly increase the fiber in your diet. Talk with your clinical dietitian nutritionist about how much fiber to eat each day. If you have an ostomy or have had recent bowel surgery, check with your healthcare provider before making any changes in your diet.

Foods high in fiber include:

- Bran or other whole wheat crackers or snacks
 - Whole-grain cereals and breads
 - Unpeeled fruits and vegetables
 - Salad greens
 - Dried apricots, figs, and raisins
- Both over-the-counter and prescription medicines are available to treat constipation. Check with your healthcare provider before taking any medicine for constipation, especially if you have an ostomy or have had bowel surgery.

Caring for your incision

Your incision will be covered with a surgical glue called Dermabond®. Don't touch or peel the Dermabond. It will fall off on its own.

If your drain was removed just before you were discharged from the hospital, you may have a dressing (bandage) over the area. You can take off the bandage after 24 to 48 hours (1 to 2 days). Follow your healthcare provider's instructions.

Call your healthcare provider's office if:

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

Showering or bathing

You can follow your usual shower routine, unless you were discharged with a drain in place. If you have a drain, don't shower until it's removed.

Don't submerge your incision under water (such as in a bathtub or pool) for 14 days after your surgery.

Eating and drinking

Your outpatient MSK Kids dietitian will help you manage your diet and nutrition after you're discharged from the hospital. They'll talk with you about foods to include in your diet to help you heal after surgery, gain weight, or both. If you're getting tube feeds at home, they'll talk with you about your tube feeding schedule and rate.

Call your healthcare provider if your appetite isn't back to normal after a few days or if you start vomiting (throwing up).

Physical activity and exercise

You can go back to doing most of your usual activities once you're home. Avoid contact sports and roughhousing for about 6 weeks after surgery. It takes about that long for your incision to heal.

Going back to school

You can go back to school as soon as you feel ready.

Traveling

Most people don't need to follow any special guidelines for traveling. It's OK to travel on a plane.

Follow-up appointment

Your surgeon's office may schedule your follow-up appointment before you're discharged from the hospital. Or, they may call you to schedule it once you're home. Your follow-up appointment can be done either in-person or by telemedicine.

When to call your healthcare provider



Call your healthcare provider if:

- Your incision is starting to look red.
- Redness around your incision is getting worse.
- There's liquid draining from your incision.
- The area around your incision is starting to swell.
- Swelling around your incision is getting worse.
- You have appetite loss (don't feel a desire to eat).
- You're vomiting (throwing up).
- You have any questions or concerns.

Contact information

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

MSK support services

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

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 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.

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.

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.

Spiritual Care

212-639-5982

Our chaplains (spiritual counselors) 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, no matter their formal religious affiliation.

MSK's interfaith chapel is located near Memorial Hospital's main lobby. It's open 24 hours a day. If you have an emergency, call 212-639-2000. Ask for the chaplain on call.

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.

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.

These are the educational resources that were mentioned in this guide. You can find them online or ask a member of your care team for a printed copy.

- ***Advance Care Planning*** (www.msk.org/pe/advance_care_planning)
- ***Herbal Remedies and Cancer Treatment***
(www.msk.org/pe/herbal_remedies)
- ***How to be a Health Care Agent***
(www.msk.org/pe/health_care_agent)
- ***How To Check if a Medication or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil*** (www.msk.org/pe/check-med-supplement)
- ***How to Enroll in MyMSK: Memorial Sloan Kettering's Patient Portal***
(www.msk.org/pe/enroll_mymsk)
- ***How to Use Your Incentive Spirometer***
(www.msk.org/pe/incentive_spirometer)
- ***Frequently Asked Questions About the MyMSK Goals to Discharge Checklist*** (www.msk.org/pe/goals_discharge_checklist)
- ***Patient-Controlled Analgesia (PCA)*** (www.msk.org/pe/pca)
- ***Staying Active Before and After Surgery for Pediatric Patients***
(www.msk.org/pe/staying_active_peds)



PATIENT & CAREGIVER EDUCATION

Herbal Remedies and Cancer Treatment

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

About Herbal Remedies

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

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

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

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

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

Talk with your healthcare provider about any herbal remedies or other

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

For more information about herbs and supplements, visit www.aboutherbs.com or call MSK's Integrative Medicine Service at 646-608-8550.

Stop taking herbal remedies before your treatment

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

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

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

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

Common Herbal Remedies and Their Effects

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

Echinacea (EH-kih-NAY-shuh)

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

Garlic

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

Gingko (also known as Gingko biloba)

- Can increase your risk of bleeding.

Ginseng (JIN-seng)

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

Turmeric (TER-mayr-ik)

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

St. John's Wort

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

Valerian (vuh-LEER-ee-un)

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

Herbal formulas

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

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

Contact Information

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

For more information, visit www.mskcc.org/IntegrativeMedicine or read *Integrative Medicine Therapies and Your Cancer Treatment* (www.mskcc.org/pe/integrative_therapies).

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

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

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PATIENT & CAREGIVER EDUCATION

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

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

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

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

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

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

What is an active ingredient?

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

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

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

How to find a medicine or supplement's active ingredients

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

Over-the-counter medicines

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

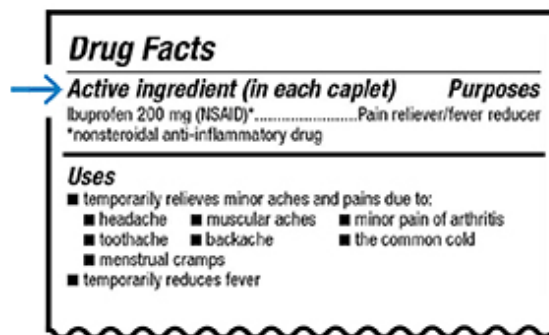


Figure 1. Active ingredients on an over-the-counter medicine label

Prescription medicines

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

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

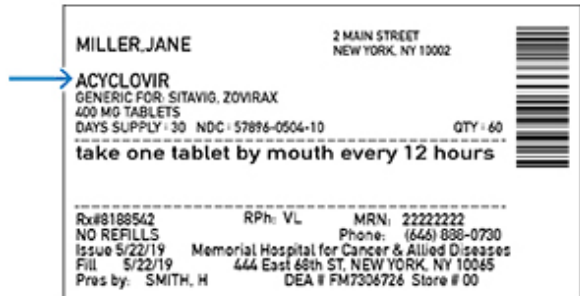


Figure 2. Active ingredients on a prescription medicine label

Dietary supplements

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

	Amount Per Serving	% Daily Value
Vitamin A (as retinyl acetate and 50% as beta-carotene)	5000 IU	100%
Vitamin C (as ascorbic acid)	60 mg	100%
Vitamin D (as cholecalciferol)	400 IU	100%
Vitamin E (as di-alpha tocopheryl acetate)	90 IU	100%
Thiamin (as thiamin mononitrate)	1.5 mg	100%
Riboflavin	1.7 mg	100%
Niacin (as niacinamide)	20 mg	100%
Vitamin B ₆ (as pyridoxine hydrochloride)	2.0 mg	100%
Folate (as folic acid)	400 mcg	100%
Vitamin B ₁₂ (as cyanocobalamin)	6 mcg	100%
Biotin	30 mcg	10%
Pantothenic Acid (as calcium pantothenate)	10 mg	100%

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

Figure 3. Active ingredients on a supplement label

Active ingredients to look for

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

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

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

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

About acetaminophen (Tylenol)

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

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

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

Instructions before your cancer treatment

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

Before your surgery

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

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

Before your radiology procedure

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

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

Before and during your chemotherapy

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

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

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

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

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PATIENT & CAREGIVER EDUCATION

How To Use Your Incentive Spirometer

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

About your incentive spirometer

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

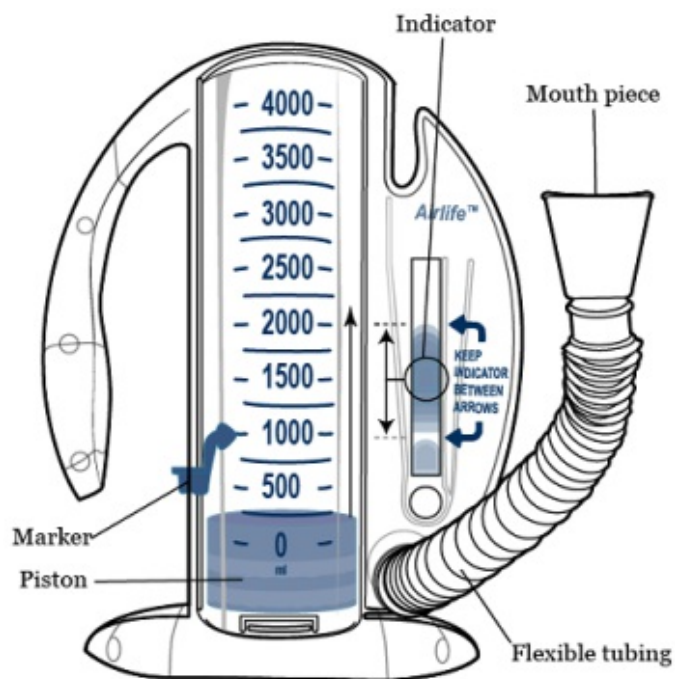


Figure 1. Parts of an incentive spirometer

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

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

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

How to use your incentive spirometer

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



Please visit www.mskcc.org/pe/incentive_spirometer_video to watch this video.

Setting up your incentive spirometer

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

Knowing what number to aim for on your incentive spirometer

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

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

incentive spirometer” section.

Using your incentive spirometer

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

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

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

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

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

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

Tips for using your incentive spirometer

Follow these tips when using your incentive spirometer:

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

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

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

Common questions about your incentive spirometer

How often should I use my incentive spirometer?

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

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

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

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

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

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

How do I clean my incentive spirometer?

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

What do the numbers on my incentive spirometer measure?

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

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

What number I should aim for?

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

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

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

What does the coaching indicator on my incentive spirometer measure?

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

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

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

When to call your healthcare provider

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

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

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

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

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