



PATIENT & CAREGIVER EDUCATION

About Your Abdominal Incisional Hernia Surgery

This guide will help you get ready for your abdominal incisional hernia surgery at MSK. It will also help you know 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 use it as you learn more about your recovery.

Your care team

Doctor: _____

Nurse: _____

Phone number: _____

Fax number: _____

Your caregiver

Your caregiver will learn about your surgery with you. They'll also help you care for yourself while you're healing after surgery. Write their name below.

Caregiver: _____



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

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About your abdominal incisional hernia surgery

About abdominal wall hernias

Your abdominal wall is made up of muscles. It protects the organs in your abdomen (belly).

A hernia is when an organ or fatty tissue squeezes through a weak spot in the abdominal wall or connective tissue (see Figure 1).

One type of hernia is an incisional hernia. It can develop around the incision (surgical cut) in scar tissue from an earlier surgery (see Figure 2). It can happen after surgery in your abdominal area, from the breastbone down to the groin.

With an incisional hernia, you may notice a swelling or a bulge under your skin where you had surgery. You may also have discomfort in your abdomen when lifting or bending.

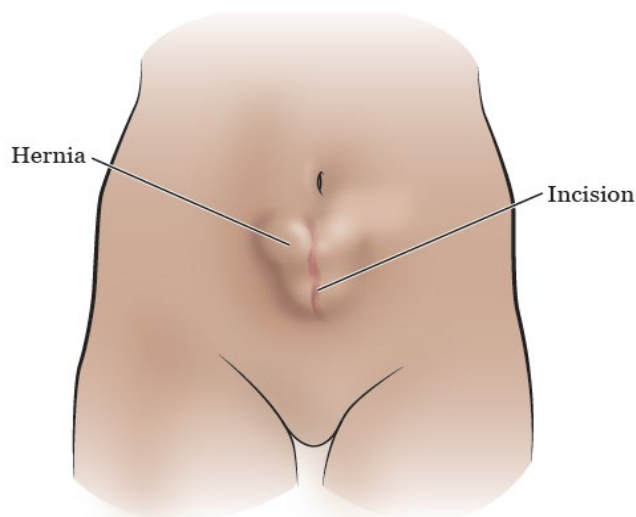


Figure 1. An abdominal hernia

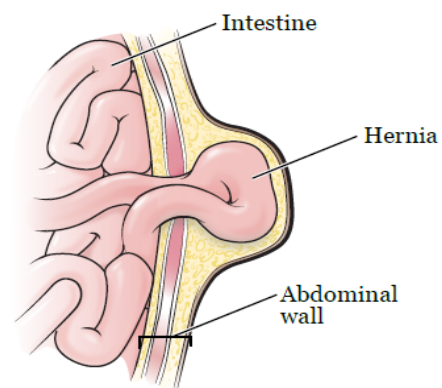


Figure 2. An abdominal incisional hernia

About your hernia surgery

Surgery is the treatment for a hernia. There are different types of hernia surgeries, such as an open surgery and a laparoscopic surgery. Your surgeon will talk with you about the type of hernia surgery best for you.

Laparoscopic surgery

Your surgeon will make a few small incisions (cuts) in your abdomen. They will inflate your abdomen with air so they can see your organs. Your surgeon will put a thin, lighted scope (tube) called a laparoscope through the incision. They' will put tools to fix the hernia through the other incisions.

Open surgery

Your surgeon will make an incision (cut) big enough to remove scar tissue and fat from your abdominal wall near the hernia. They also may put in a mesh patch to hold the weak part of your abdominal wall. The mesh patch will attach to your abdominal wall and cover the hole or weak area under it. Over time, this patch will be absorbed by your inner abdominal wall.

Your surgery will take about 3 hours.

Notes _____

Getting ready for your surgery

You and your care team will work together to get ready for your surgery. Help us keep you safe by telling us if any of these things apply to you, even if you're not sure.

- I take an anticoagulant (blood thinner), such as:
 - Aspirin
 - Heparin
 - Warfarin (Jantoven®, Coumadin®)
 - Clopidogrel (Plavix®)
 - Enoxaparin (Lovenox®)
 - Dabigatran (Pradaxa®)
 - Apixaban (Eliquis®)
 - Rivaroxaban (Xarelto®)
- I take an SGLT2 inhibitor, such as:
 - Canagliflozin (Invokana®)
 - Dapagliflozin (Farxiga®)
 - Empagliflozin (Jardiance®)
 - Ertugliflozin (Steglatro®)
- I take prescription medications (medications my healthcare provider prescribes), including patches and creams.
- I take over-the-counter medications (medications I buy without a prescription), including patches and creams.
- I take dietary supplements, such as herbs, vitamins, minerals, or natural or home remedies.

These are examples of medications. There are others. Be sure your healthcare provider knows all the medications you're taking.

- I have a pacemaker, automatic implantable cardioverter-defibrillator (AICD), or other heart device.
- I have sleep apnea.
- I have had a problem with anesthesia (medication to make me sleep during surgery) in the past.
- I'm allergic to certain medication(s) or materials, including latex.
- I'm not willing to receive a blood transfusion.
- I drink alcohol.
- I smoke or use an electronic smoking device, such as a vape pen or e-cigarette.
- I use recreational drugs, such as marijuana.

About drinking alcohol

It's important to talk with your healthcare providers about how much alcohol you drink. This will help us plan your care.

If you drink alcohol regularly, you may be at risk for problems during and after your surgery. These include bleeding, infections, heart problems, and a longer hospital stay.

If you drink alcohol regularly and stop suddenly, it can cause seizures, delirium, and death. If we know you're at risk for these problems, we can prescribe medications to help prevent them.

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. Tell your healthcare provider right away if you:
 - Get a headache.
 - Feel nauseous (like you're going to throw up).
 - Feel more anxious (nervous or worried) than usual.
 - Cannot sleep.

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

- Tell your healthcare provider if you cannot stop drinking.
- Ask your healthcare provider questions about drinking and surgery. All your medical information will be kept private, as always.

About smoking

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

Your healthcare provider will refer you to our Tobacco Treatment Program if you smoke. You can also reach the program by calling 212-610-0507.

About sleep apnea

Sleep apnea is a common breathing problem. If you have sleep apnea, you stop breathing for short lengths of time while you're asleep. The most common type is obstructive sleep apnea (OSA). With OSA, your airway becomes fully blocked during sleep.

OSA can cause serious problems during and after surgery. Tell us if you have or think you might have sleep apnea. If you use a breathing device, such as a CPAP machine, bring it on the day of your surgery.

Using MyMSK

MyMSK (my.mskcc.org) is your MSK patient portal. You can use it to send and read messages from your care team, view your test results, see your appointment dates and times, and more. You can also invite your caregiver to make their own account so they can see information about your care.

If you do not have a MyMSK account, you can sign up at my.mskcc.org. You can get an enrollment ID by calling 646-227-2593 or your doctor's office.

Watch *How to Enroll in MyMSK: Memorial Sloan Kettering's Patient Portal* at www.msk.org/pe/enroll_mymsk to learn more. You can also contact the MyMSK Help Desk by emailing mymsk@mskcc.org or calling 800-248-0593.

Within 30 days of your surgery

Presurgical Testing (PST)

You'll have a PST appointment before your surgery. 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.

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).

During your PST appointment, you'll meet with a nurse practitioner (NP).

They work 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.

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. 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 information, visit www.mskcc.org/caregivers or read *A Guide for Caregivers*. You can ask your healthcare provider for a copy or find it at www.mskcc.org/pe/guide_caregivers

Complete a Health Care Proxy form

If you have not already filled out a Health Care Proxy form, we recommend you do now. If you've already filled one out 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 cannot 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 *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 at www.mskcc.org/pe/advance_care_planning and www.mskcc.org/pe/health_care_agent or ask your healthcare provider for a copy.

Do breathing and coughing exercises

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

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.

Buy clear liquids

You'll need to follow a clear liquid diet before your surgery. It's helpful to buy clear liquids ahead of time. For a list of clear liquids you can drink, read the section "Follow a clear liquid diet."

7 days before your 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.

2 days before your 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 surgery

Follow a clear liquid diet

You'll need to follow a clear liquid diet the day before your surgery. A clear liquid diet includes only liquids you can see through. You can find examples in the "Clear liquid diet" table.

While you're following a clear liquid diet:

- Do not eat any solid foods.
- Try to drink at least 1 (8-ounce) cup of clear liquid every hour you're awake.
- Drink different types of clear liquids. Do not just drink water, coffee, and tea.
- Do not drink any liquids you can't see through, such as milk or smoothies.
- Do not drink sugar-free liquids unless you have diabetes and a member of your care team tells you to.

How to follow a clear liquid diet if you have diabetes

Ask the healthcare provider who manages your diabetes:

- What to do while you're following a clear liquid diet.
- If you need to change your dose of insulin or other diabetes medicine(s), if you take them.
- If you should drink sugar-free clear liquids.

Check your blood sugar level often while you're following a clear liquid diet. If you have questions, talk with your healthcare provider.

Clear liquid diet

	OK to have	Do not have
Soups	<ul style="list-style-type: none"> • Clear broth, bouillon, and consommé. 	<ul style="list-style-type: none"> • Anything with pieces of food or seasoning.
Sweets	<ul style="list-style-type: none"> • Gelatin, such as Jell-O®. • Flavored ices. • Hard candies, such as Life Savers®, lemon drops, and peppermints. 	<ul style="list-style-type: none"> • All others.
Drinks	<ul style="list-style-type: none"> • Clear fruit juices, such as lemonade, apple, cranberry, and grape juices. • Soda, such as ginger ale, 7UP®, Sprite®, and seltzer. • Sports drinks, such as Gatorade® and Powerade®. • Coffee without milk or creamer. • Tea without milk or creamer. • Water, including carbonated (fizzy) and flavored water. • Clear nutritional drinks, such as Boost® Breeze, Ensure Clear™, Pedialyte®, and Diabetishield®. 	<ul style="list-style-type: none"> • Juices with pulp. • Nectars. • Smoothies or shakes. • Milk, cream, and other dairy products. • Nut milks, plant milks, non-dairy creamers, and other dairy alternatives. • Drinks with alcohol.

Start bowel preparation, if needed

Your surgeon or nurse may have told you you need to do a bowel preparation. You will need to start it 1 day before your surgery. During your bowel preparation:

- Don't eat any solid foods.
- Make sure to drink plenty of liquids other than water, black coffee, and tea. Try to drink at least 1 (8-ounce) glass every hour while you're awake.

At 2 p.m. on the day before your surgery, drink the magnesium citrate.

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 do not get a call by 7 p.m., call 212-639-5014.

The staff member will tell you what time to arrive at the hospital for your surgery. They'll also remind you where to go.

This will be one of the following locations:

Presurgical Center (PSC) on the 2nd floor
1275 York Ave. (between East 67th and East 68th Streets)
New York, NY 10065
M elevator to 2nd floor

Presurgical Center (PSC) on the 6th floor
1275 York Ave. (between East 67th and East 68th Streets)
New York, NY 10065
B elevator to 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. 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 after your shower.
7. Do not put on any lotion, cream, deodorant, makeup, powder, perfume, or cologne after your shower.

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



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

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

The morning of your surgery

Remember, do not eat anything after midnight the night before your surgery.

Instructions for drinking: 2 hours before your arrival time



Stop drinking 2 hours before your 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.

Do not 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.
- Do not 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 machine), if you have one.
- Your incentive spirometer, if you have one.
- Your Health Care Proxy form and other advance directives, if you filled them out.
- Your cell phone and charger.
- Only the money you may want for small purchases (such as a newspaper).
- A case for your personal items, if you have any. Examples of personal items include eyeglasses, hearing aids, dentures, prosthetic devices, wigs, and religious articles.
- This guide. You'll use it when you learn 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 (north) side of the street. There's a tunnel you can walk through that connects the garage to the hospital.

There are 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 2nd or 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 (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 does not 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 devices, wig, and religious articles, if you have them.

You'll either walk into the operating room or a staff member will bring you there a stretcher. A member of the operating room team will help you onto the operating bed and place compression boots on your lower legs. These gently inflate and deflate to help blood flow in your legs.

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

During your surgery

After you're fully asleep, your care team will place a breathing tube through your mouth into your airway. It will help you breathe. They'll also place a urinary (Foley) catheter in your bladder. It will drain your urine (pee) during your surgery.

In the Post-Anesthesia Care Unit (PACU)

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

Pain medication

You'll be given medications to control your pain and keep you comfortable. There are different ways these medications can be given.

- If you're getting epidural pain medication, it will be put into your epidural space through your epidural catheter. Your epidural space is the space in your spine just outside your spinal cord.
- If you're getting a nerve block, your doctor will inject medication into some of your nerve to reduce pain after surgery.
- If you're getting IV pain medication, it will be put into your bloodstream through your IV line.
- If you're getting oral medications. Some people may get oral pain medications (medication that's swallowed, such as pills).

You may have 1 or more of these after your surgery. They're all good ways to control your pain. Your doctor will talk with you before choosing the best one(s) for you.

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

Tubes and drains

You'll have a Foley catheter in your bladder to keep track of how much urine you're making. For most people, it's removed 2 days after surgery.

You may also have a Jackson-Pratt® drain (JP drain). The drain collects extra liquid from your incision (cut). This lowers your risk for infection and helps your body heal. Most of the time, the drains are removed after a few days. If you go home with a drain, your nurse will show you how to care for it.

Moving to your hospital room

You may stay in the PACU for a few hours or overnight. How long you stay depends on the type of surgery you had. After your stay in the PACU, a staff member will bring you to your hospital room.

In your hospital room

Most people are in the hospital for 2 days after a laparoscopic surgery and 5 days after an open surgery. This will depend on the exact surgery you had.

In your hospital room, you'll meet one of the nurses who will care for you during your stay. Soon after you get there, a nurse will help you out of bed and into your chair.

Your healthcare providers will teach you how to care for yourself while you're healing from your surgery. You can help yourself recover more quickly by:

- Starting to move around as soon as you can. The sooner you get out of bed and walk, the quicker you can get back to your normal activities. Walking every 2 hours is a good goal. This will help prevent blood clots in your legs.

- Using your incentive spirometer. This will help your lungs expand, which prevents pneumonia.

Managing your pain

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

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

If you had a robotic surgery, you may have pain in your shoulder. This is called referred pain and is common. It's caused by the gas that was put into your abdomen during your surgery. If you have pain in your shoulder, tell one of your healthcare providers. They'll bring you a hot pack to put on your shoulder to help with the pain.

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

Moving around and walking

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

Read *Frequently Asked Questions About Walking After Your Surgery* to learn more about how walking after surgery can help you recover. You can ask your healthcare provider for a copy or find it at www.mskcc.org/pe/walking_after_surgery

Read *Call! Don't Fall!* to learn what you can do to stay safe and keep from falling while you're in the hospital. You can find it at www.mskcc.org/pe/call_dont_fall or ask your healthcare provider for a copy.

Exercising your lungs

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

- Use your incentive spirometer 10 times every hour you're awake. For more information, read *How to Use Your Incentive Spirometer*. You can find it in the "Educational Resources" section of this guide.
- Do coughing and deep breathing exercises. A member of your care team will teach you how.

Eating and drinking

You may be able to have ice chips the day after your surgery. After that, you can start having sips of clear liquids. You'll gradually move to a regular diet as you recover.

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

Caring for your tubes and drains

It's helpful if your caregiver also learns how to care for your JP drain. This will make it easier for them to help you care for yourself at home.

Planning for discharge

Your first appointment after surgery is usually 1 to 2 weeks after you leave the hospital. Your nurse will give you instructions on how to make this appointment, including the phone number to call.

Leaving the hospital

Before you leave, look at your incision with one of your healthcare providers. Knowing what it looks like will help you notice any changes later.

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

If your ride is not at the hospital when you're ready to leave, you may be able to wait in the Patient Transition Lounge. A member of your care team will give you more information.

At home

Read *What You Can Do to Avoid Falling* to learn what you can do to stay safe and keep from falling at home and during your appointments at MSK. You can find it at www.mskcc.org/pe/avoid_falling or ask your healthcare provider 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 medication. Some people have soreness, tightness, or muscle aches around their incision for 6 months or longer. This does not mean something is wrong.

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

- Take your medications as directed and as needed.
- Call your healthcare provider if the medication prescribed for you does not help your pain.
- Do not 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.
 - Do not take more of any medication than the amount on the label or as instructed by your healthcare provider.
 - Read the labels on all the medications you're taking. This is very important if you're taking acetaminophen. Acetaminophen is an ingredient in many over-the-counter and prescription medications. Taking too much can harm your liver. Do not take more than one medication that has acetaminophen without talking with a member of your care team.

- Pain medication should help you get back to your normal activities. Take enough medication to do your activities and exercises comfortably. It's normal for your pain to increase a little as you start to be more active.
- Keep track of when you take your pain medication. It works best 30 to 45 minutes after you take it. Taking it when you first have pain is better than waiting for the pain to get worse.

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

Preventing and managing constipation

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

- Go to the bathroom at the same time every day. Your body will get used to going at that time. But if you feel like you need to go, don't put it off.
- Try to use the bathroom 5 to 15 minutes after meals. After breakfast is a good time to go. That's when the reflexes in your colon are strongest.
- Exercise, if you can. Walking is a great type of exercise that can help prevent and manage constipation.
- Drink 8 to 10 (8-ounce) cups (2 liters) of liquids daily, if you can. Choose water, juices (such as prune juice), soups, and milkshakes. Limit liquids with caffeine, such as coffee and soda. Caffeine can pull fluid out of your body.
- Slowly increase the fiber in your diet to 25 to 35 grams per day. Unpeeled fruits and vegetables, whole grains, and cereals contain

fiber. If you have an ostomy or recently had bowel surgery, ask your healthcare provider before changing your diet.

- Both over-the-counter and prescription medications can treat constipation. Ask your healthcare provider before taking any medications for constipation. This is very important if you have an ostomy or have had bowel surgery. Follow the instructions on the label or from your healthcare provider. Examples of over-the-counter medications for constipation are:
 - Docusate sodium (Colace®). This is a stool softener (medication that makes your bowel movements softer) that causes few side effects. You can use it to help prevent constipation. Do not take it with mineral oil.
 - Polyethylene glycol (MiraLAX®). This is a laxative (medication that causes bowel movements) that causes few side effects. Take it with 8 ounces (1 cup) of a liquid. Only take it if you're already constipated.
 - Senna (Senokot®). This is a stimulant laxative, which can cause cramping. It's best to take it at bedtime. Only take it if you're already constipated.

If any of these medications cause diarrhea (loose, watery bowel movements), stop taking them. You can start again if you need to.

Caring for your incision

Take a shower every day to clean your incision. Follow the instructions in the "Showering" section.

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

If there is anything draining from your incision, write down the amount and color.

Call your healthcare provider's office if:

- The skin around your incision is very red or getting more red.
- The skin around your incision is warmer than usual.
- The area around your incision is starting to swell or getting more swollen.
- You see drainage that looks like pus (thick and milky).
- Your incision smells bad.

Your nurse will talk with you about the signs of infection.

If you go home with bandages over your incision, change them at least once a day or anytime they're wet. When there is no longer any drainage coming from your incision, it can be left uncovered.

If you have Steri-Strips or Dermabond on your incision, they'll loosen and fall or peel off on their own. If they have not fallen off after 10 days, you can take them off.

Showering

You can shower when you get home. Taking a warm shower is relaxing and can help ease muscle aches.

If you have a bandage over your incision, you can remove it before you shower. Use soap when you shower and gently wash your incision. This will keep Steri-Strips or Dermabond in place. Pat the areas dry with a towel after showering. Leave your incision uncovered unless there is drainage. Call your doctor if you see any redness or drainage from your incision.

Do not take tub baths until you discuss it with your doctor at the first appointment after your surgery.

Eating and drinking

After your surgery, you may have a lack of appetite and feel full quickly after eating. These are expected and should improve over time. Try to eat small amounts of your favorite foods throughout the day. It is important to get enough calories and protein to prevent weight loss and promote healing.

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

Physical activity and exercise

When you leave the hospital, your incision may look like it's healed on the outside. It will not be healed on the inside. For the first 6 to 8 weeks after your surgery:

- Do not lift anything heavier than 10 pounds (4.5 kilograms) for at least 6 weeks. Ask your doctor how long you should avoid heavy lifting.
- Do not do any high-energy activities, such as jogging and tennis.
- Do not play any contact sports, such as football.

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

It's common to have less energy than usual after surgery. This may last for 6 to 8 weeks. Recovery time is different for each person. Increase your activities each day as much as you can. Get up, get dressed, and walk. Always balance activity periods with rest periods. Rest is an important part

of your recovery. You may need a nap during the day, but try to stay out of bed as much as possible so you'll sleep at night.

Driving

Ask your healthcare provider when you can drive. Most people can start driving again 10 to 14 days after surgery. Do not drive while you're taking pain medication that may make you drowsy.

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

Going back to work

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

Traveling

You can travel after surgery. It's important that you walk around every hour to prevent blood clots.

Managing your feelings

After surgery for a serious illness, you may have new and upsetting feelings. Many people say they felt weepy, sad, worried, nervous, irritable, and angry at one time or another. You may find you cannot 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. We're here to help you and your family and friends handle the emotional aspects of your illness. We can help, whether you're in the hospital or at home.

When to call your healthcare provider



Call your healthcare provider if:

- You have a fever of 100.5 °F (38 °C) or higher.
- You have chills.
- You're having trouble breathing.
- The skin around your incision is very red or getting more red.
- The skin around your incision is warmer than usual.
- The area around your incision is starting to swell or getting more swollen.
- You see drainage that looks like pus (thick and milky).
- Your incision smells bad.
- You have any questions or concerns.

Contact information

Monday through Friday from 9 a.m. to 5 p.m., call your healthcare provider's office.

After 5 p.m., during the weekend, and on holidays, call 212-639-2000. Ask to speak to the person on call for your healthcare provider.

MSK support services

Admitting Office

212-639-7606

Call if you have questions about your hospital admission, such as asking for 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

We welcome patients from around the world and offer many services to help. If you're an international patient, call for help arranging your care.

Counseling Center

www.msk.org/counseling

646-888-0200

Many people find that counseling helps them. Our Counseling Center offers counseling for individuals, couples, families, and groups. We can also prescribe medications to help if you feel anxious or depressed. Ask a member of your care team for a referral or call the number above to make an appointment.

Food Pantry Program

646-888-8055

We give food to people in need during their cancer treatment. Talk with a member of your care team or call the number above to learn more.

Integrative Medicine Service

www.msk.org/integrativemedicine

Our 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. Call 646-449-1010 to make an appointment for these services.

You can also schedule a consultation with a healthcare provider in the Integrative Medicine Service. They'll work with you to make a plan for creating a healthy lifestyle and managing side effects. Call 646-608-8550 to make an appointment for a consultation.

MSK Library

library.mskcc.org

212-639-7439

You can visit our library website or call to talk with the library reference staff. They can help you find more information about a type of cancer. You can also visit the library's Patient and Health Care Consumer Education Guide at libguides.mskcc.org/patienteducation

Nutrition Services

www.msk.org/nutrition

212-639-7312

Our Nutrition Service offers nutritional counseling with one of our clinical dietitian nutritionists. Your clinical dietitian nutritionist will talk with you about your eating habits. They can also give advice on what to eat during and after treatment. Ask a member of your care team for a referral or call the number above to make an appointment.

Patient and Community Education

www.msk.org/pe

Visit our patient and community education website to search for educational resources, videos, and online programs.

Patient Billing

646-227-3378

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

Patient Representative Office

212-639-7202

Call if you have questions about the Health Care Proxy form or 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 Nurses and Companions

917-862-6373

You can request private nurses or companions to care for you in the hospital and at home. Call to learn more.

Rehabilitation Services

www.msk.org/rehabilitation

Cancers and cancer treatments can make your body feel weak, stiff, or tight. Some can cause lymphedema (swelling). Our physiatrists (rehabilitation medicine doctors), occupational therapists (OTs), and physical therapists (PTs) can help you get back to your usual activities.

- **Rehabilitation medicine doctors** diagnose and treat problems that affect how you move and do activities. They can design and help coordinate your rehabilitation therapy program, either at MSK or somewhere closer to home. Call Rehabilitation Medicine (Physiatry) at 646-888-1929 to learn more.
- An **OT** can help if you're having trouble doing usual daily activities. For example, they can recommend tools to help make daily tasks easier. A

PT can teach you exercises to help build strength and flexibility. Call Rehabilitation Therapy at 646-888-1900 to learn more.

Resources for Life After Cancer (RLAC) Program

646-888-8106

At MSK, care does not end after your treatment. The RLAC Program is for patients and their families who have finished treatment.

This program has many services. We offer seminars, workshops, support groups, and counseling on life after treatment. We can also help with insurance and employment issues.

Sexual Health Programs

Cancer and cancer treatments can affect your sexual health, fertility, or both. MSK's sexual health programs can help you before, during, or after your treatment.

- Our **Female Sexual Medicine and Women's Health Program** can help with sexual health problems such as premature menopause or fertility issues. Call 646-888-5076 to learn more or make an appointment.
- Our **Male Sexual and Reproductive Medicine Program** can help with sexual health problems such as erectile dysfunction (ED). Call 646-888-6024 to learn more or make an appointment.

Social Work

www.msk.org/socialwork

212-639-7020

Social workers help patients, families, and friends deal with common issues for people who have cancer. They provide individual counseling and support groups throughout your treatment. They can help you communicate with children and other family members.

Our social workers can also help refer you to community agencies and programs. If you're having trouble paying your bills, they also have information about financial resources. Call the number above to learn more.

Spiritual Care

212-639-5982

Our chaplains (spiritual counselors) are available to listen, help support family members, and pray. They can contact community clergy or faith groups, or simply be a comforting companion and a spiritual presence. Anyone can ask for spiritual support. You do not have to have a religious affiliation (connection to a religion).

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.

Tobacco Treatment Program

www.msk.org/tobacco

212-610-0507

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

Virtual Programs

www.msk.org/vp

We offer online education and support for patients and caregivers. These are live sessions where you can talk or just listen. You can learn about your diagnosis, what to expect during treatment, and how to prepare for your cancer care.

Sessions are private, free, and led by experts. Visit our website to learn more about Virtual Programs or to register.



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).

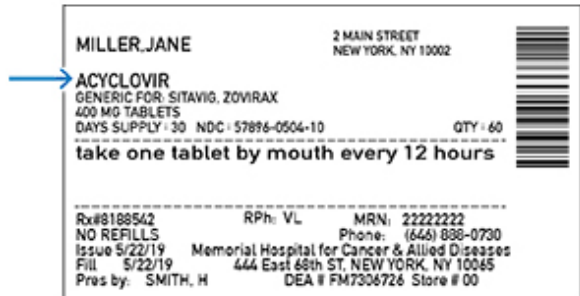


Figure 2. Active ingredients on a prescription medicine label

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.

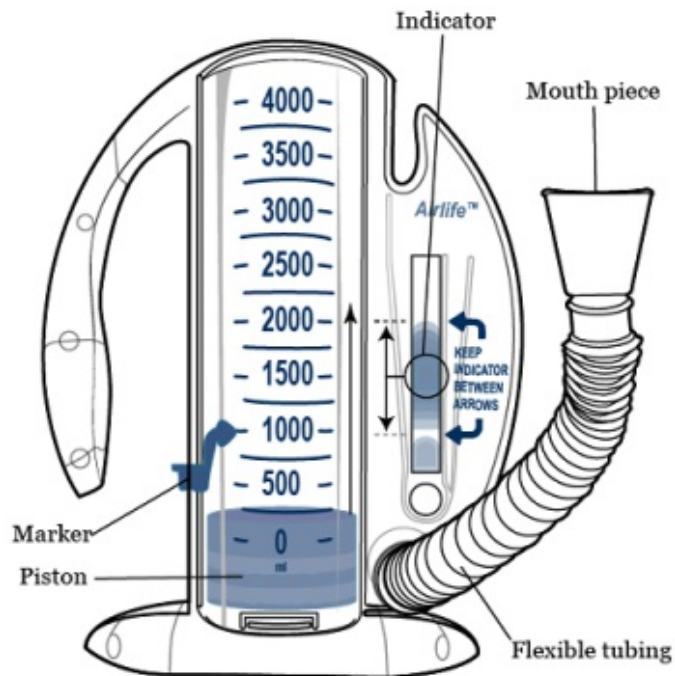


Figure 1. Parts of an incentive spirometer

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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