



Memorial Sloan Kettering
Cancer Center

PATIENT & CAREGIVER EDUCATION

About Your Liver Surgery

This guide will help you get ready for your liver surgery at Memorial Sloan Kettering (MSK). It will also help you understand what to expect during your recovery.

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

Your care team

Doctor: _____

Nurse: _____

Phone number: _____

Fax number: _____

Your caregiver

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

Caregiver: _____



To view this guide online, visit www.mskcc.org/pe/liver_surgery

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About Your Surgery

About your liver

Your liver is a large organ located on the right side of your body, just under your ribs (see Figure 1). Your liver has many functions, including:

- Storing and filtering blood.
- Making bile, which helps with digestion (the breakdown of food), especially of protein and fat.
- Changing sugar into a form your body can use for energy.
- Helping your body get rid of waste products.
- Making the substances that your blood needs to clot.

The healthy part of your liver that's left after surgery will grow larger to replace the part that was removed. Your liver should return to its original size within a few weeks, but it'll take longer for it to be fully functional.

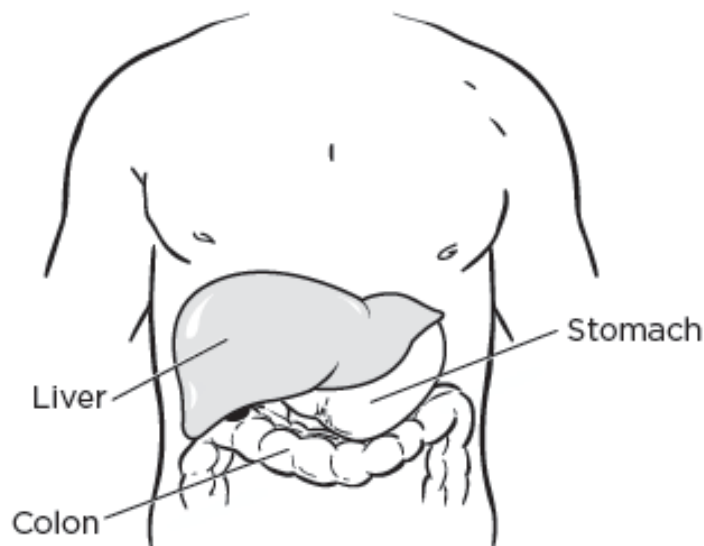


Figure 1. Your liver

About liver surgery

There are several kinds of liver surgeries to treat cancer. The main kinds of liver surgery are:

- ❑ **A liver resection.** This is a surgery to remove the part(s) of your liver with the tumors. When your surgeon removes a tumor, they'll also need to take out a small amount of healthy tissue around it. The amount of tissue that will be removed depends on the size and location of the tumor(s).
- ❑ **Radio frequency ablation (RFA).** This is a procedure to kill cancer cells by heating them to very high temperatures.
- ❑ **Microwave ablation.** This is a procedure to kill cancer cells by heating them to very high temperatures.
- ❑ **Irreversible electroporation.** This is a procedure to kill cancer cells using an electric current.

Your doctor will explain which type of surgery you'll have. You may have a combination of both a liver resection and a liver ablation. Liver ablation methods can be used individually, in combination with a liver resection, or in combination with one another. The exact treatment differs from person to person.

Your surgeon will make an incision (surgical cut) to see your liver clearly. They'll decide the size of the incision and if a minimally invasive technique (which makes very small incisions and uses cameras for guidance) is appropriate for you. Then, they'll look at your liver using an ultrasound to confirm the location and number of tumors in it.

The length of your surgery will depend on how many tumors need to be treated. Most surgeries take between 2 and 4 hours, but some may take longer. Your doctor or nurse will tell you what to expect.

Getting ready for your surgery

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

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

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

About drinking alcohol

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

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

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

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

About smoking

If you smoke, you can have breathing problems when you have surgery. Stopping even for a few days before surgery can help. 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 disorder that causes you to stop breathing for short periods of time while sleeping. The most common type is obstructive sleep apnea (OSA). With OSA, your airway becomes completely blocked during sleep. OSA can cause serious problems during and after surgery.

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

Using MyMSK

MyMSK (my.mskcc.org) is your MSK patient portal account. You can use MyMSK to send and receive messages from your 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 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* at www.mskcc.org/pe/enroll_mymsk. For help, contact the MyMSK Help Desk by emailing mymsk@mskcc.org or calling 800-248-0593.

Within 30 days of your surgery

Presurgical Testing (PST)

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

You can eat and take your usual medications the day of your appointment.

During your PST appointment, you'll meet with a nurse practitioner (NP). 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 from the hospital. They'll also help you care for yourself at home.



For caregivers

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

Complete a Health Care Proxy form

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

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

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

Do breathing and coughing exercises

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

Exercise

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

Follow a healthy diet

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

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

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

7 days before your surgery

Follow your healthcare provider's instructions for taking aspirin

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

Follow your healthcare provider's instructions. **Don't stop taking aspirin unless they tell you to.** For more information, read the resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E*. You can find it in the "Educational Resources" section of this guide.

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

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

2 days before your surgery

Stop taking nonsteroidal anti-inflammatory drugs (NSAIDs)

Stop taking NSAIDs, such as ibuprofen (Advil® and Motrin®) and naproxen (Aleve®), 2 days before your surgery. These medications can cause bleeding. For more information, read the resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E*. You can find it in the "Educational Resources" section of this guide.

1 day before your surgery

Note the time of your surgery

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

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

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

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

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

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

Sleep

Go to bed early and get a full night's sleep.

If you're having a minimally invasive surgery, your doctor or nurse may give you other instructions. Follow the instructions that they give you.

Instructions for eating before your surgery



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

The morning of your surgery

Instructions for drinking before your surgery



Finish the CF(Preop)[®] drink your healthcare provider gave you 2 hours before your scheduled arrival time. Do not drink anything else, including water.



Do not drink anything starting 2 hours before your scheduled arrival time. This includes water.

Take your medications as instructed

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

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

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

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

Things to remember

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

What to bring

- Sneakers that lace up. You may have some swelling in your feet. Lace-up sneakers can accommodate this swelling.
- Your breathing device for sleep apnea (such as your CPAP machine), if you have one.
- Your Health Care Proxy form and other advance directives, if you completed them.
- Your cell phone and charger.
- Only the money you may want for small purchases (such as a newspaper).
- A case for your personal items (such as your eyeglasses, hearing aids, dentures, prosthetic devices, wig, and religious articles), if you have any.
- 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 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 doesn't place the IV, your anesthesiologist will do it in the operating room.

Meet with an anesthesiologist

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

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

Your doctor or anesthesiologist may also talk with you about placing an epidural catheter (thin, flexible tube) in your spine (back). An epidural catheter is another way to give you pain medication after surgery.

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 windpipe to help you breathe. They'll also place a urinary (Foley) catheter in your bladder to drain your urine (pee) during your surgery.

Once they finish your surgery, your surgeon will close your incisions with staples or sutures (stitches). They may also place Steri-Strips™ (thin pieces of surgical tape) or Dermabond® (surgical glue) over your incisions. They'll cover your incisions with a bandage.

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

After Your Surgery

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

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

Notes _____

In the Post-Anesthesia Care Unit (PACU)

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

Pain medication

You'll get epidural or IV pain medication while you're in the PACU.

- If you're getting epidural pain medication, it will be put into your epidural space (the space in your spine just outside your spinal cord) through your epidural catheter.
- If you're getting IV pain medication, it will be put into your bloodstream through your IV line.

You'll be able to control your pain medication using a button called a patient-controlled analgesia (PCA) device. For more information, read the resource *Patient-Controlled Analgesia (PCA)*. You can find it in the "Educational Resources" section of this guide.

Tubes and drains

You'll have a Foley catheter in your urethra going to your bladder. This tube drains urine from your bladder so your care team can keep track of how much urine you're making. Your Foley catheter is usually removed the day after your surgery.

You may have a drainage tube in your abdomen to drain fluid from the area. If you have this drainage tube, it's usually removed a few days after surgery, but you may still have it when you're discharged from the hospital. Read the "Caring for Your Tubes and Drains" section for more information.

Moving to your hospital room

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

In your hospital room

The length of time you're in the hospital after your surgery depends on your recovery. Most people stay in the hospital for 5 to 7 days.

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

While you're in the hospital, your nurses 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're able to get out of bed and walk, the quicker you'll be able to get back to your normal activities.

Read the resource *Call! Don't Fall!* to learn what you can do to stay safe and keep from falling while you're in the hospital. You can find it in the "Educational Resources" section of this guide.

Managing your pain

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

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

If you had a minimally invasive surgery, you may have pain in your shoulder. This is called referred pain. It's caused by the gas that was put into your abdomen during your surgery, and it's normal. If you have pain in your shoulder, tell one of your healthcare providers.

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

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.

Exercising your lungs

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

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

Eating and drinking

Right after your surgery, you won't be able to eat solid foods. You'll follow a clear liquid diet. After that, you'll slowly go back to eating your regular diet. Read your pathway and talk with your care team for more information.

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

Caring for your tubes and drains

Your nurse will help you care for your tubes and drains while you're in the hospital.

If you have a drainage tube in your abdomen, your healthcare team will keep track of how much fluid is draining from the tube. Once the amount is low enough, they'll remove the tube. This usually happens a few days after surgery, but you may still have the drainage tube when you're discharged from the hospital. Your healthcare team will tell you what to expect.

If you'll still have the drainage tube when you're discharged, your nurse will teach you how to care for it at home. They'll also give you the supplies you'll need. Your case manager may also arrange for a home care nurse to visit you at home to help you.

Showering

You'll be able to shower on the first day after your surgery. A member of your care team will help you.

Leaving the hospital

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

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

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

At home

Read the resource *What You Can Do to Avoid Falling* to learn what you can do to stay safe and keep from falling at home and during your appointments at MSK. You can find it in the "Educational Resources" section of this guide.

Your first appointment after surgery will be 10 to 14 days after you leave the hospital. Your nurse will give you instructions on how to make this appointment, including the phone number to call.

Filling out your Recovery Tracker

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

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

Based on your answers, we may reach out to you for more information or ask you to call your surgeon's office. You can always contact your surgeon's office if you have any questions. For more information, read the resource *About Your Recovery Tracker*. You can find it online at www.mskcc.org/pe/recovery_tracker 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 as they recover. This doesn't mean something is wrong, but if it doesn't get better, contact your healthcare provider.

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

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

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

Preventing and managing constipation

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

- Go to the bathroom at the same time every day. Your body will get used to going at that time. If you feel like you need to go, though, don't put it off.
- Exercise, if you can. Walking is an excellent form of exercise.
- Drink 8 to 10 (8-ounce) glasses (2 liters) of liquids daily, if you can. Choose liquids such as water, juices (such as prune juice), soups, and ice cream shakes. Avoid liquids with caffeine (such as coffee and soda). Caffeine can pull fluid out of your body.

If you haven't had a bowel movement in 2 days, call your healthcare provider.

Caring for your incision

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

The staples in your incision will be removed during your first appointment after surgery. This is usually about 2 weeks after you're discharged. While the staples are in your incision, you may feel some tightness or a tugging feeling along your incision. This is normal. Doing gentle stretching can help.

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

If the area around your incision is red, puffy, or if you have any drainage from your incision, contact your healthcare provider.

Showering

Shower every day. Taking a warm shower is relaxing and can help ease muscle aches. You'll also clean your incision when you shower.

When you shower, use soap to gently wash your incision. After you shower, pat the area dry with a clean towel. Don't rub over your incision. Leave your incision uncovered, unless there's drainage.

Don't take tub baths until talking with your healthcare provider at your first appointment after your surgery.

Eating and drinking

When you first start eating solid foods, you won't be able to eat the same portions of food you did before your surgery. Try to eat 4 to 6 small meals a day.

It's also important to drink plenty of liquids. Try to drink 8 (8-ounce) glasses of liquids every day. Don't drink alcohol until you check with your doctor or nurse. Alcohol is cleared out of your body through your liver.

If you need to reach a clinical dietitian nutritionist after you go home, call 212-639-7312.

Physical activity and exercise

When you leave the hospital, your incision will look like it's healed on the outside, but it won't be healed on the inside.

- Don't lift anything heavier than 5 pounds (2.3 kilograms) for at least 8 weeks after your surgery. Check with your doctor before you do any heavy lifting.
- Ask your healthcare provider before starting strenuous exercises (such as jogging and tennis).

Doing aerobic exercise, such as walking and stair climbing, will help you gain strength and feel better. You can walk outside or indoors at your local mall or shopping center. Gradually increase the distance you walk. Climb stairs slowly, resting or stopping as needed. You can also keep doing your coughing and deep breathing exercises and using your incentive spirometer.

You may have swelling in your lower legs after your surgery. This will get better with time. If you feel that the swelling is getting worse while you're home and is making it hard to do your daily activities, contact your healthcare provider.

Managing fatigue

Fatigue is having less energy or feeling more tired than usual. It's normal to feel fatigued after your surgery. This may last for 6 to 8 weeks after surgery, but it will get better slowly over time. Try to increase your activity level every day to help manage your fatigue. Get up, get dressed, and walk. 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.

It's important for you to go back to your usual activities after surgery. Spread them out over the course of the day. You can do light household tasks. Try washing dishes, preparing light meals, and other activities as you are able.

Your body is an excellent guide for telling you when you've done too much. When you increase your activity, monitor your body's reaction. You may find that you have more energy in the morning or the afternoon. Plan your activities for times of the day when you have more energy.

Driving

While your incision is healing, you may not be able to twist your body as well as normal. This can make it hard for you to drive. You also shouldn't drive if you're taking pain medication that may make you drowsy. During your first appointment after surgery, your doctor will tell you if it's safe for you to start driving again.

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

Going back to work

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

Traveling

If you're traveling a long distance, try to get up once an hour to walk around. This will help prevent blood clots. Remember to drink around 8 (8-ounce) glasses of liquids every day, even when you're traveling.

Managing your feelings

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

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

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 shortness of breath.
- The skin around your incision is warmer than normal.
- The skin around your incision is getting more red.
- The area around your incision is starting to swell.
- Swelling around your incision is getting worse.
- You have pus-like (thick, yellowish, or foul-smelling) drainage from your incision.
- You have any sudden increase in pain or new pain.
- You have nausea and vomiting.
- You have diarrhea.
- You have constipation that isn't relieved within 2 days.
- You have fatigue that's getting in the way of your day-to-day activities or your ability to get out of the house and exercise.
- You have jaundice (yellow skin or eyes).
- You have any new or unexplained symptoms.
- You have any questions or concerns.

Contact information

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

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

Support Services

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

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

Notes _____

MSK support services

Admitting Office

212-639-7606

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

Anesthesia

212-639-6840

Call if you have questions about anesthesia.

Blood Donor Room

212-639-7643

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

Bobst International Center

888-675-7722

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

Chaplaincy Service

212-639-5982

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

Counseling Center

646-888-0200

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

Food Pantry Program

646-888-8055

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

Integrative Medicine Service

646-888-0800

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

MSK Library

library.mskcc.org

212-639-7439

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

Patient and Caregiver Education

www.mskcc.org/pe

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

Patient and Caregiver Peer Support Program

212-639-5007

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

Patient Billing

646-227-3378

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

Patient Representative Office

212-639-7202

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

Perioperative Nurse Liaison

212-639-5935

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

Private Duty Nursing Office

212-639-6892

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

Resources for Life After Cancer (RLAC) Program

646-888-8106

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

Sexual Health Programs

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

- Our **Female Sexual Medicine and Women's Health Program** can help if you're dealing with cancer-related sexual health challenges such as premature menopause or fertility issues. For more information or to make an appointment, call 646-888-5076.
- Our **Male Sexual and Reproductive Medicine Program** can help if you're dealing with cancer-related sexual health challenges such as erectile dysfunction (ED). For more information or to make an appointment, call 646-888-6024.

Social Work

212-639-7020

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

Tobacco Treatment Program

212-610-0507

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

Virtual Programs

www.mskcc.org/vp

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

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

External support services

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

Visit www.mskcc.org/pe/external_support_services for a list of these support services. You can also talk with an MSK social worker by calling 212-639-7020.

Educational Resources

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

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

Notes _____



PATIENT & CAREGIVER EDUCATION

Call! Don't Fall!

This information describes what you can do to keep from falling and stay safe while you're in the hospital. Being in the hospital can make you weak. Follow these guidelines to avoid falling.

- Call for help every time you need to get out of bed or up from a chair.
- Don't go to the bathroom alone.
- Don't bend over. If you drop something, call for help.
- Don't lean on furniture that has wheels, such as your bedside table, over-bed table, or IV pole.
- Wear safe, supportive shoes. Examples include shoes with laces and slippers with nonskid soles. Don't wear shoes or slippers with an open back.
- Call for help right away if you see any spills on the floor.
- Use the grab bars in the bathroom and railings in the hallways.
- If you have glasses or hearing aid(s), wear them when you're awake.
- Let us know what you will need near you. Help us make sure we have:
 - Placed your call button where you can reach it
 - Placed items you may need (such as your phone, books, or glasses) where you can reach them
 - Turned on a night light before it gets dark
 - Raised the top bedrail to keep you safe
 - Removed any clutter from around your bedside and chairside



**Call!
Don't Fall!**

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

Call! Don't Fall! - Last updated on December 19, 2017

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PATIENT & CAREGIVER EDUCATION

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

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

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

Instructions Before Your Cancer Treatment

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

Before your surgery

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

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

healthcare provider tells you to.

- If you take vitamin E or a supplement that contains vitamin E, stop taking it 7 days before your surgery or as directed by your healthcare provider.
- If you take an NSAID or a medication that contains an NSAID, stop taking it 48 hours (2 days) before your surgery or as directed by your healthcare provider.

Before your radiology procedure

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

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

Before and during your chemotherapy

Chemotherapy can lower your platelet count, which can increase your risk of bleeding. Whether you're just starting chemotherapy or have been getting it, talk with your healthcare provider before taking aspirin, other NSAIDs, or vitamin E.

Examples of Medications

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

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

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

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

Common NSAID Medications That Don't Contain Aspirin

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

Products Containing Vitamin E

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

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

About Acetaminophen

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

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

Read the labels on all your medications

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

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

| Common Abbreviations for Acetaminophen | | |
|---|--------|-------------|
| APAP | AC | Acetaminop |
| Acetamin | Acetam | Acetaminoph |

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

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

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

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

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PATIENT & CAREGIVER EDUCATION

Herbal Remedies and Cancer Treatment

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

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

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

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

Common Herbal Supplements and Their Effects

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

Echinacea

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

Garlic

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

Ginkgo (also known as *Ginkgo biloba*)

- Can increase your risk of bleeding.

Ginseng

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

Turmeric

- Can make chemotherapy less effective.

St. John's Wort

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

Valerian

- Can increase the effects of sedation or anesthesia.

Herbal formulas

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

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

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

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

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

Herbal Remedies and Cancer Treatment - Last updated on June 24, 2019
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PATIENT & CAREGIVER EDUCATION

How to Use Your Incentive Spirometer

This information will help you learn how to use your incentive spirometer.

About Your Incentive Spirometer

An incentive spirometer is a device that will expand your lungs by helping you to breathe more deeply and fully. The parts of your incentive spirometer are labeled in Figure 1.

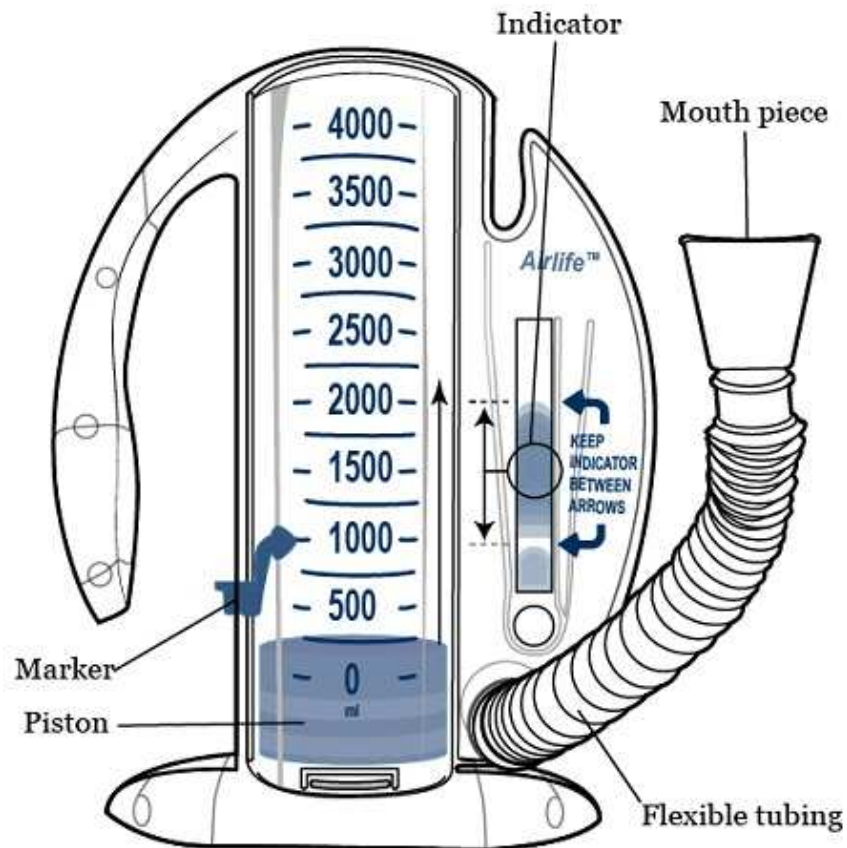


Figure 1. Incentive Spirometer

Use your incentive spirometer after your surgery and do your deep breathing and coughing exercises. This will help keep your lungs active throughout your recovery and prevent complications such as pneumonia.

If you have an active respiratory infection (such as pneumonia, bronchitis, or COVID-19) do not use the device when other people are around.

How To Use Your Incentive Spirometer

Here is a video demonstrating how to use your incentive spirometer:



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

Setting up your incentive spirometer

The first time you use your incentive spirometer, you will need to take the flexible tubing with the mouthpiece out of the bag. Stretch out the tubing and connect it to the outlet on the right side of the base (see Figure 1). The mouthpiece will be attached to the other end of the tubing.

Using your incentive spirometer

When you're using your incentive spirometer, make sure to breathe through your mouth. If you breathe through your nose, the incentive spirometer won't work properly. You can hold your nose if you have trouble.

If you feel dizzy at any time, stop and rest. Try again at a later time.

To use your incentive spirometer, follow the steps below.

1. Sit upright in a chair or in bed. Hold the incentive spirometer at eye level.
 - o If you had surgery on your chest or abdomen (belly), hug or hold a pillow to help splint or brace your incision (surgical cut) while you're using the incentive spirometer. This will help decrease pain at your incision.
2. Put the mouthpiece in your mouth and close your lips tightly around it. Slowly

breathe out (exhale) completely.

3. Breathe in (inhale) slowly through your mouth as deeply as you can. As you take the breath, you will see the piston rise inside the large column. While the piston rises, the indicator on the right should move upwards. It should stay in between the 2 arrows (see Figure 1).
4. Try to get the piston as high as you can, while keeping the indicator between the arrows.
 - If the indicator doesn't stay between the arrows, you're breathing either too fast or too slow.
5. When you get it as high as you can, hold your breath for 10 seconds, or as long as possible. While you're holding your breath, the piston will slowly fall to the base of the spirometer.
6. Once the piston reaches the bottom of the spirometer, breathe out slowly through your mouth. Rest for a few seconds.
7. Repeat 10 times. Try to get the piston to the same level with each breath.
8. After each set of 10 breaths, try to cough, holding a pillow over your incision, as needed. Coughing will help loosen or clear any mucus in your lungs.
9. Put the marker at the level the piston reached on your incentive spirometer. This will be your goal next time.

Repeat these steps every hour that you're awake.

Cover the mouthpiece of the incentive spirometer when you aren't using it.

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

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

How to Use Your Incentive Spirometer - Last updated on June 27, 2019

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PATIENT & CAREGIVER EDUCATION

Patient-Controlled Analgesia (PCA)

This information will help you understand what patient-controlled analgesia (PCA) is and how to use your PCA pump.

About PCA

PCA helps you control your pain by letting you give yourself pain medication. It uses a computerized pump to send pain medication into your vein (called an IV PCA) or into your epidural space (epidural PCA), which is near your spine (see Figure 1). Whether you have an IV PCA or an epidural PCA depends on what you and your doctor decide is right for you.

PCA isn't right for everyone. Some people may not be able to use a PCA pump. Before you get a PCA pump, tell your doctor if you have weakness in your hands or think you may have trouble pushing the PCA button. You should also tell your doctor if you have sleep apnea. This may affect the way we prescribe your medication.



Figure 1. Using the PCA

Using the PCA Pump

To give yourself pain medication, press the button attached to the pump when you

have pain (see Figure 1). The pump will send a safe dose of the medication that your doctor has prescribed.

Only you should push the PCA button. **Family and friends should never push the button.**

The pump can be programmed to give you medication in 2 ways:

- **As needed.** You get your pain medication only when you press the button. It won't let you get more medication than prescribed. The pump is set to allow only a certain number of doses per hour.
- **Continuous.** You get your pain medication at a constant rate all the time. This can be combined with the "as needed" way. This lets you take extra doses safely if you're having pain.

Tell your doctor if the PCA isn't helping with your pain. You should also tell your doctor if your pain changes, gets worse, feels different than before, or if you feel pain in a new place. Your doctor may change the medication to one that may work better for you.

Side Effects

Pain medication you get through a PCA can have side effects. Tell your healthcare provider if you have any of these problems:

- Constipation (having fewer bowel movements than usual)
- Nausea (feeling like you're going to throw up)
- Vomiting (throwing up)
- Dry mouth
- Itching
- Changes in your vision, such as seeing things that aren't there
- Drowsiness, dizziness, or confusion
- Weakness, numbness, or tingling in your arms or legs

- Trouble urinating (peeing)
- Any other side effects or problems

Your doctor may adjust your dose or give you a different medication with fewer side effects.

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

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

Patient-Controlled Analgesia (PCA) - Last updated on August 31, 2020

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What You Can Do to Avoid Falling

This information describes what you can do to keep from falling when you come for your appointments at Memorial Sloan Kettering (MSK). It also describes how you can keep from falling while you're at home.

About Falls

Falls can be very harmful, but there are many ways you can prevent them. Falls can delay your treatment and can make your hospital stay longer. They can also cause you to need more tests, such as magnetic resonance imaging (MRI). Ongoing cancer treatment may also increase your chances of falling and getting hurt.

Things That Can Make You Fall

Anyone can fall, but some things make you more likely to fall. You're at higher risk for falling if you:

- Are 60 years old or older
- Have fallen before
- Are afraid of falling
- Feel weak, tired, or forgetful
- Have numbness or tingling in your legs or feet
- Have trouble walking or are unsteady
- Can't see well
- Can't hear well
- Feel dizzy, lightheaded, or confused

- Use a walker or cane
- Have depression (strong feelings of sadness) or anxiety (strong feelings of worry or fear)
- Have had a recent surgery with anesthesia (medication that makes you sleep)
- Take certain medications, such as:
 - Laxatives (pills to cause a bowel movement)
 - Diuretics (water pills)
 - Sleeping pills
 - Medications to prevent seizures
 - Some medications for depression and anxiety
 - Pain medications, such as opioid medications
 - Intravenous (IV) fluids (fluids into your vein)
 - Any medication that makes you feel sleepy or dizzy

How to Avoid Falling During Your MSK Appointments

The following are tips to help you stay safe and avoid falling while you're at MSK:

- Come to your appointment with someone who can help you get around.
- If you use an assistive device such as a wheelchair or cane, bring it to your appointment.
- Wear safe, supportive shoes. Examples include shoes that have a low heel height, a thin, firm midsole, a slip-resistant sole, and laces or Velcro® to close the shoe. Don't wear shoes with an open back. For more information on choosing safe shoes, read the resource *How to Choose Safe Shoes to Prevent Falling* (www.mskcc.org/pe/safe_shoes).
- Ask a member of our staff, such as a security guard or person at the front desk, for help while you're at MSK. They can also bring you a wheelchair to use

during your appointment.

- Have someone help you while you're in the dressing room or bathroom. If you don't have anyone with you, tell the person at the reception desk. They will find a nurse to help you.
- Use the grab bars while you're in the bathroom.
- When getting up after lying down, sit at the side of the bed or exam table before you stand up
- When getting up after sitting, don't rush and take your time to stand up, so you don't lose your balance.
- If you feel dizzy or weak, tell someone. If you're in a bathroom, look for a call bell that you can use to call for help.

How to Avoid Falling at Home

The following are tips to help you stay safe and avoid falling at home:

- Set up your furniture so that you can walk around without anything blocking your way.
- Use a nightlight or keep a flashlight close to you at night.
- Remove rugs and other loose items from your floor. If you have a rug covering a slippery floor, make sure the rug doesn't have any loose or fringed edges.
- If your bathroom isn't close to your bedroom (or wherever you spend most of your time during the day), get a commode. A commode is a type of portable toilet that you can put anywhere in your home. Place it nearby so you don't have to walk to the bathroom.
- Put grab bars and handrails next to your toilet and inside your shower. Never use towel racks to pull yourself up. They aren't strong enough to hold your weight.
- Put anti-slip stickers on the floor of your tub or shower.
- Buy a shower chair and a hand-held shower head so you can sit while taking a shower.

- When getting up after you're lying down, sit for a few minutes before you stand up.
- Place items in your kitchen and bathroom cabinets at shoulder height so you don't have to reach too high or bend too low.
- When you're at an appointment with your provider at MSK, tell them about all the medications you take. Some medications can increase your risk of falling. This includes prescription and over-the-counter medications.
- Stay physically active. Doing simple daily activities, such as walking, can help you stay strong and move around better.

If you're concerned about your risk for falling, talk with your healthcare provider.

Additional Resources

For more information about how to keep from falling at home, read the Centers for Disease Control and Prevention (CDC) booklet *Check for Safety: A Home Fall Prevention Checklist for Older Adults*. It's available in English and Spanish on www.cdc.gov/steady/patient.html or by calling 800-CDC-INFO (800-232-4636).

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

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

What You Can Do to Avoid Falling - Last updated on December 20, 2019
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