



About Your Knee Replacement Surgery

This guide will help you get ready for your knee replacement surgery at MSK. It will also help you know what to expect as you recover.

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.msk.org/pe/knee_replacement to view this guide online.

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About your knee replacement surgery

Your knee anatomy

Your knee is the joint in the middle of your leg. A joint is a place where 1 or more bones meet. Your knee is made up of the end of your thighbone, your kneecap, and the end of your shinbone (see Figure 1).

- Your **thighbone** is the bone that goes from your knee upward, to your hip. It's also called your femur.
- Your **kneecap** is a small bone shaped like a triangle. It's at the end of your thighbone. It's also called your patella. Your kneecap protects your knee.
- Your **shinbone** is the bone that goes from your knee downward, to your ankle. It's also called your tibia.



Figure 1. The parts of your knee

The ends of these bones are covered with a layer of cartilage (protective tissue). The cartilage lets your bones glide against one another when you bend your knee.

The bones in your knee are surrounded by muscles, tendons, and ligaments. Tendons are strong tissue that connect muscles to bones. Ligaments are bands of tough tissue.

During your surgery, your surgeon will remove the tumor in your bone. They'll remove the parts of your knee damaged by the tumor. Then, they'll replace the parts of your knee with artificial (man-made) parts called prostheses or implants (see Figure 2). They're usually made of metal, plastic, or a combination of both.

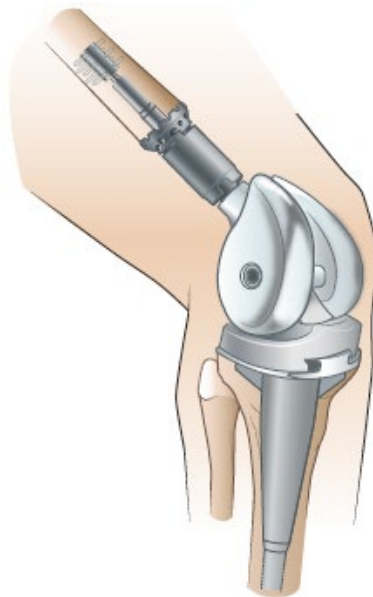


Figure 2. An example of a prosthesis

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 any prescription medicines, including patches and creams. A prescription medicine is one you can only get with a prescription from a healthcare provider.
- I take any over-the-counter medicines, including patches and creams. An over-the-counter medicine is one you can buy without a prescription.
- I take any dietary supplements, such as herbs, vitamins, minerals, or natural or home remedies.

These are examples of medicines. There are others.

Always be sure your healthcare providers know all the medicines and supplements 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 (A-nes-THEE-zhuh) in the past. Anesthesia is medicine to make you sleep during a surgery or procedure.
- I'm allergic to certain medicines 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 medicine to help prevent them.

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

- Be honest with us about how much alcohol you drink.
- Try to stop drinking alcohol once your surgery is planned. Tell us right away if you:
 - Get a headache.
 - Feel nauseous (like you're going to throw up).

- Feel more anxious (nervous or worried) than usual.
- Cannot sleep.

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

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

About smoking

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

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

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 knee replacement surgery

Presurgical testing (PST)

You'll have a PST appointment before your surgery. You'll get a reminder from your surgeon's office with the appointment date, time, and location. Visit www.msk.org/parking for parking information and directions to all MSK locations.

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

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

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

You'll meet with an advance practice provider (APP) during your PST appointment. They work closely with MSK's anesthesiology (A-nes-THEE-zee-AH-loh-jee) staff. These are doctors with special training in using anesthesia during a surgery or procedure.

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

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

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

Identify your caregiver

Your caregiver has 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

Caring for a person going through cancer treatment comes with many responsibilities. We offer resources and support to help you manage them.

Visit www.msk.org/caregivers or read *A Guide for Caregivers* to learn more. You can ask for a printed copy or find it at www.msk.org/pe/guide_caregivers

Fill out a Health Care Proxy form

If you have not already filled out a Health Care Proxy form, we recommend you do now. If you already filled one out or have any other advance directives, bring them to your next appointment.

A health care proxy is a legal document. It says who will speak for you if you can't communicate for yourself. This person is called your health care agent.

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

Talk with a member of your care team if you have questions about filling out a Health Care Proxy form.

Do breathing and coughing exercises

Practice taking deep breaths and coughing before your surgery. We will give you an incentive spirometer to help expand your lungs. To learn more, 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.

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 knee replacement 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 knee replacement surgery

Note the time of your surgery

A staff member will call you after 2 p.m. the day before your surgery. If your surgery is scheduled for a Monday, they'll call you 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 get to the hospital for your surgery. They'll also remind you where to go. This will be:

The Presurgical Center (PSC) at Memorial Hospital
1275 York Ave. (between East 67th and East 68th streets)
New York, NY 10065

Take the B elevator to the 6th floor.

Visit www.msk.org/parking for parking information and directions to all MSK locations.

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

Shower with a 4% CHG solution antiseptic skin cleanser before you go to bed the night before your surgery.

1. Wash your hair with your usual shampoo and conditioner. Rinse your head well.
2. Wash your face and genital (groin) area with your usual soap. Rinse your body well with warm water.
3. Open the 4% CHG solution bottle. Pour some into your hand or a clean washcloth.
4. Move away from the shower stream. Rub the 4% CHG solution gently over your body from your neck to your feet. Do not put it on your face or genital area.
5. Move back into the shower stream to rinse off the 4% CHG solution. Use warm water.
6. Dry yourself off with a clean towel.

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

Instructions for eating



Stop eating at midnight (12 a.m.) the night before your surgery. This includes hard candy and gum.

If your healthcare provider told you to stop eating earlier than midnight, follow their instructions. Some people need to fast (not eat) for longer before their surgery.

The day of your surgery

Instructions for drinking

Between midnight (12 a.m.) and 2 hours before your arrival time, only drink the liquids on the list below. Do not eat or drink anything else. Stop drinking 2 hours before your arrival time.

- Water.
- Clear apple juice, clear grape juice, or clear cranberry juice.
- Gatorade or Powerade.
- Black coffee or plain tea. It's OK to add sugar. Do not add anything else.
 - Do not add any amount of any type of milk or creamer. This includes plant-based milks and creamers.
 - Do not add honey.
 - Do not add flavored syrup.

If you have diabetes, pay attention to the amount of sugar in these drinks. It will be easier to control your blood sugar levels if you include sugar-free, low-sugar, or no added sugar versions of these drinks.

It's helpful to stay hydrated before surgery, so drink if you are thirsty. Do not drink more than you need. You will get intravenous (IV) fluids during your surgery.



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

Take your medicine as instructed

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

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.
- Do not wear any lotion, cream, deodorant, makeup, powder, perfume, or cologne.
- Leave valuable items at home.
- If you're menstruating (have your monthly period), use a sanitary pad, not a tampon. You'll get disposable underwear, as well as a pad if needed.

What to bring

- 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.

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.



For caregivers, family, and friends

Read *Information for Family and Friends for the Day of Surgery* to help you know what to expect on the day of your loved one's surgery. You can ask for a printed copy or find it at www.msk.org/pe/info_family_friends

Meet with a nurse

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

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

Marking your surgical site

You will be asked your name and birth date. You may also be asked the name of your doctor, what surgery you're having, and which side is being operated on. Your doctor or another member of your surgical team will mark the surgical site. They will use a marker to initial the site on your body that they will operate on. This is to make sure that all members of the surgical staff are clear about the plan for your surgery.

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 your surgery.

Get ready for surgery

When it's time for your surgery, you'll need to take off your eyeglasses, hearing aids, dentures, prosthetic devices, wig, and religious articles.

You'll either walk into the operating room or a staff member will bring you there on a stretcher. A member of the operating room team will help you onto the operating bed. They'll 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.

Your surgeon will clean your leg and make an incision (surgical cut) over or near your kneecap. The incision will be about 8 to 12 inches (20 to 30 centimeters) long.

They'll remove the damaged bone and cartilage from your knee. They will send it to the Pathology Department to be checked for cancer cells.

Then, your surgeon will prepare your knee joint for your prostheses. They will attach the pieces of your artificial joint.

Once they finish your surgery, your surgeon will close your incisions with staples or 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.

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 temperature, pulse, blood pressure, and oxygen levels. You may get oxygen through a tube resting below your nose or a mask over 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 through your epidural catheter. Your epidural space is the space in your spine just outside your spinal cord.
- 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 *Patient-Controlled Analgesia (PCA)*. You can or ask your healthcare provider for a copy or find it at www.msk.org/pe/pca

Tubes and drains

You'll have 1 or 2 drainage tubes in your leg. Your nurse will give you information about which tubes and drains you have. They can include:

- **Jackson-Pratt® (JP) drains near your incision.** These drain fluid from around your incision. They'll be taken out when your incision stops draining. This is usually 2 to 3 days after your surgery.
- **ReliaVac® drains near your incision.** These drain fluid from around your incision. They'll be removed 2 to 3 days after your surgery.

Moving to your hospital room

You may stay in the PACU 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

The length of time you're in the hospital after your surgery depends on your recovery. Most people stay in the hospital for 3 or 4 days.

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.

Managing your pain

You'll have some pain after your surgery. The skin below your incision will feel numb after your surgery. This is because some of your nerves were cut. The numbness will go away over time.

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 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 can help you recover faster.

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 find it at www.msk.org/pe/walking_after_surgery or ask your healthcare provider for a copy.

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 ask a member of your care team for a copy or find it at www.msk.org/pe/call_dont_fall

Your physical therapy will start the day after surgery. This is a very important part of your recovery. Your surgeon and physical therapist will plan your therapy based on your needs. They'll help you:

- Build strength in your knee and leg.
- Get in and out of bed.
- Transfer to your chair.
- Walk with your assistive device, such as a walker, crutches, or cane.
- Do the exercises in the "Exercises After Your Surgery" section of this guide.

Continuous Passive Motion (CPM) Machine

You may be on a machine called a Continuous Passive Motion (CPM) (see Figure 3). A CPM machine is used to exercise your leg after knee replacement surgery. It will help you bend and extend your leg. Your physical therapist will show you how to use your CPM machine. You'll need to use your CPM machine for about 1 to 3 weeks after your surgery.

You may also go home with your CPM machine. Your case manager will arrange for your CPM to be delivered to your home.

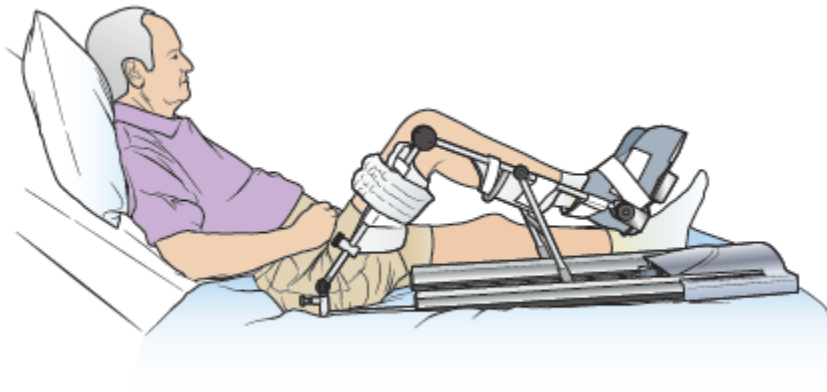


Figure 3. A CPM machine

Knee immobilizer

You'll also have a splint called a knee immobilizer around your knee. The knee immobilizer protects your knee and keeps it from moving while it heals. Your doctor will give you more information about when to wear your knee immobilizer.

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.

When using your incentive spirometer or doing other breathing exercises, it may help to hold a pillow or blanket against your incision. This will keep your leg muscles from moving as much so you have less pain.

Eating and drinking

You'll gradually start eating your normal diet again when you're ready.

Eating a balanced diet high in protein will help you heal after surgery. Your diet should include a healthy protein source at each meal, as well as fruits, vegetables, and whole grains.

For more tips on increasing the amount of calories and protein in your diet, read *Eating Well During Your Cancer Treatment*. You can ask a member of your care team for a copy or find it at www.mskcc.org/cancer-care/patient-education/eating-well-during-your-treatment

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

Caring for your tubes and drains

You'll probably have some discharge and tenderness around your incision or around your drains. Your nurses will show and tell you what's normal and expected. They'll also help you start learning how to care for your drains, tubes, and incisions.

Your drainage tubes will be removed 2 to 3 days after your surgery. Removing them won't hurt, and you won't need anesthesia. You won't go home with any tubes or drains.

If you have staples in any of your incisions, they may be taken out before you leave the hospital. If you go home with sutures in your incisions, they'll be removed at your first appointment after surgery. This is usually 2 to 3 weeks after surgery.

If you go home with Steri-Strips or Dermabond on your incisions, they'll loosen and fall or peel off by themselves. If they haven't fallen off within 10 days, you can take them off.

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 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 keep from falling at home and during your appointments at MSK. You can find it at www.msk.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 these guidelines 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 (very sleepy). 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 will help with aches and discomfort. Acetaminophen (Tylenol®) and ibuprofen (Advil® or Motrin®) are examples of over-the-counter pain relievers.
 - Follow your healthcare provider's instructions for stopping your prescription pain medication.
 - Do not take too much of any medication. Follow the instructions on the label or from 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. Constipation is when you poop less often than usual, have a harder time pooping, or both.

Swelling in your legs

You may have some swelling in your legs after your surgery. To help with this, raise your legs above your chest. You can do this by lying down and resting your legs on pillows. If the swelling doesn't go down after 4 hours, call your doctor.

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 an excellent form of exercise.
- 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. Avoid 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 needed.

Caring for your incision

Before you leave the hospital, you will get information from your healthcare provider. It will tell you how to take care of your dressing when you are home. You may be told to change your dressing every day or 1 week after surgery. You may also be told to leave the dressing on until your surgeon sees you at your post-op (after surgery) appointment.

This is usually 2 to 3 weeks after your surgery. Do not put lotions or creams on your incision unless your healthcare provider tells you to.

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.

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.

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

If you have 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.

Caring for your prosthesis

If you're going to have any procedure that might cause bleeding, tell your healthcare provider that you have a knee prosthesis. You may need to take an antibiotic. If you get an infection, it may infect your new knee joint. For more information, read *Preventing an Infection in Your Bone or Joint Replacement Prosthesis*. You can find it at www.mskcc.org/cancer-care/patient-education/preventing-infection-prosthesis or ask your healthcare provider for a copy.

Showering

Do not get your incision and dressing wet until you see your healthcare provider at your post-op appointment. You can sponge bathe.

Keep your dressing dry by covering it with a "cast bag," or with tape and a clean garbage bag or plastic wrap. Your healthcare provider will tell you when you can start getting your incision wet.

After your sutures are removed and you begin showering without a waterproof dressing, remove your bandages. Use soap to gently wash your incision. Pat the area dry with a clean towel after showering. Leave your incision uncovered unless there's drainage.

If you still have drainage, put a new bandage on your incision after your shower. Call your doctor if you have new drainage.

Do not place your incision completely underwater until all your scabs are gone and your skin is fully healed. For example, do not take tub baths, swim in a pool, or soak in a hot tub.

Eating and drinking

You can eat all the foods you did before your surgery, unless your healthcare provider gives you other instructions. Eating a balanced diet with lots of calories and protein will help you heal after surgery.

Try to eat a good protein source (such as meat, fish, or eggs) at each meal. You should also try to eat fruits, vegetables, and whole grains.

It's also important to drink plenty of liquids. Choose liquids without alcohol or caffeine. Try to drink 8 to 10 (8-ounce) cups of liquids every day.

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

Physical activity and exercise

- If you have a CPM machine, your doctor may want you to use it at home. Your case manager will arrange for it to be sent to your home. If you need help at home, the case manager will help to set that up for you.
- Do not sit with your legs dangling for more than 1 hour at a time.
- For every hour that you sit, stand, or walk, spend 1 hour lying down. While you're lying down, you must raise your feet above the level of your heart. You can rest your feet on a pillow to do this.
- Keep doing the exercises in the "Exercises After Your Surgery" at home until your doctor tells you to stop.

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

Exercises after your surgery

After your surgery, you'll need to do exercises to build strength in your knee and leg. Your physical therapist will show you how to do each exercise. They'll also tell you when to start each one.

You won't be able to do all of these exercises right away. You'll slowly add exercises to your therapy during your hospital stay and when you go home.

Not all knee replacement surgeries are done the same way. You may have a CPM machine. Or, your knee must stay in 1 position to heal.

If so, you will not be able to do the exercises in this section. Your physical therapist will plan your therapy based on your needs.

Exercise tips

- Dress comfortably. You should wear clothing that will not limit your movements. You can wear a hospital gown, pajamas, or athletic clothing.
- You can do these exercises while you're in bed. Support your head and shoulders on 1 or more pillows. Make sure you're comfortable.
- Breathe in through your nose and out through your mouth. Do the exercise movements when you breathe out.
- Do not hold your breath while doing any of these exercises. Count out loud during the exercises to keep your breaths evenly paced.
- Stop any exercise that causes you pain or discomfort. Tell your physical therapist which exercises are hurting you. You can keep doing the other exercises.

Exercises

Do not do any of the exercises in this section without talking with your doctor and physical therapist.

Ankle pumps

1. Lie on your back with your head and shoulders supported on pillows. You can also do this exercise while sitting.
2. Point your toes up toward your nose (see Figure 1). You can do this with both feet at the same time.
3. Then, point them toward the floor.
4. Repeat 10 times.

Do this exercise every hour that you're awake.

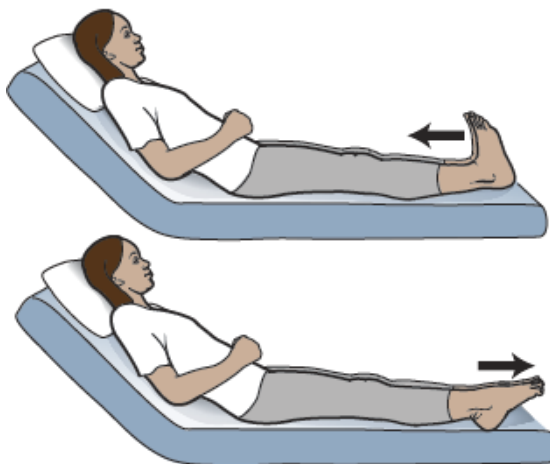


Figure 1. Ankle pumps

Quad sets

1. Lie on your back with your head and shoulders supported on pillows.
2. Straighten your legs as much as you can.

3. Push the backs of your knees down into the bed while tightening the muscles on the top of your thighs (see Figure 2).
4. Hold the position and count out loud to 5.
5. Relax.
6. Repeat 10 times.

Do this exercise every hour that you're awake.

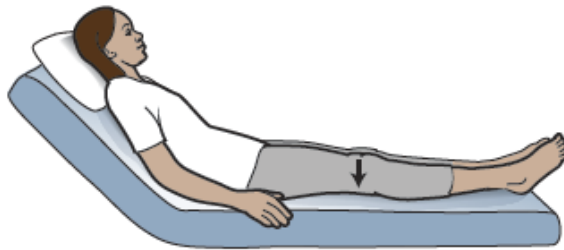


Figure 2. Quad sets

Glute sets

1. Lie on your back with your head and shoulders supported on pillows.
2. Straighten your legs as much as you can.
3. Squeeze your buttock muscles together tightly (see Figure 3).
4. Hold the position and count out loud to 5.
5. Relax your buttocks.
6. Repeat 10 times.

Do this exercise every hour that you're awake.



Figure 3. Glute sets

Knee bends

Do not do this exercise if you have a CPM machine. The machine will bend your knee for you.

1. Lie on your back with your head and shoulders supported on pillows.
2. Slowly bend your operated leg (leg you had surgery on), sliding your heel toward your buttocks (see Figure 4).
3. Gently slide your heel away from your buttocks until your knee is resting on the bed.
4. Repeat 10 times.

Do this exercise every hour that you're awake.



Figure 4. Knee bends

Flexion and extension (bending and straightening) in sitting

1. Sit in a chair or at the edge of your bed. Let your knee bend as much as you can without hurting yourself.
2. Hook the ankle of the unoperated leg (leg you didn't have surgery on) under your operated leg (see Figure 5).
3. Lift your unoperated leg slowly to gently help straighten your operated leg.
4. Lower your legs slowly until the operated knee is bent as much as possible again.
5. Relax your legs.

6. Repeat 10 times.

Do this exercise every hour that you're awake.

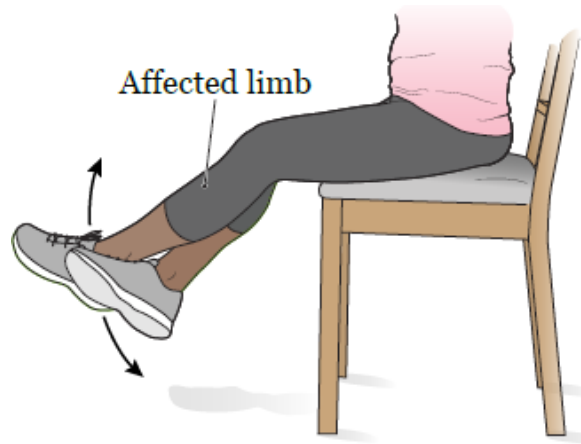


Figure 5. Flexion and extension

Straight leg raises

1. Lie on your back with your head and shoulders supported on pillows.
2. Bend your unoperated leg and place your foot flat on the bed (see Figure 6).
3. Keeping your operated leg straight, lift it from the bed until your knees are even with each other (see Figure 7). This will be hard to do at first but will get easier with time.
4. Slowly lower your leg onto the bed and relax.
5. Repeat 10 times.

Do this exercise 5 times throughout your day.

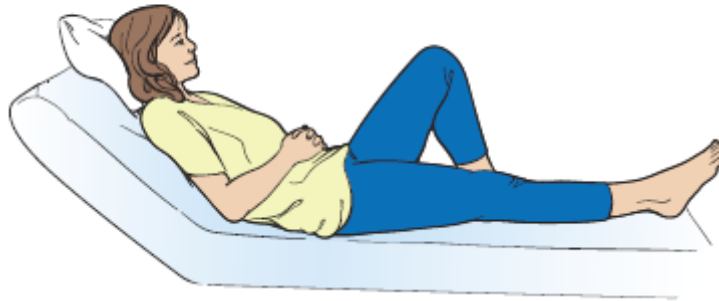


Figure 6. Bending your leg



Figure 7. Lifting your leg

Short arc quads

1. Lie on your back with your head and shoulders supported on pillows.
2. Place a rolled towel or pillow under your operated knee so it's slightly bent.
3. Straighten 1 leg by lifting your heel and pressing the back of your knee into the towel (see Figure 8).
4. Hold the position and count out loud to 5.
5. Gently lower your leg.
6. Repeat 10 times.
7. Repeat with your other leg.

Do this exercise every hour that you're awake.

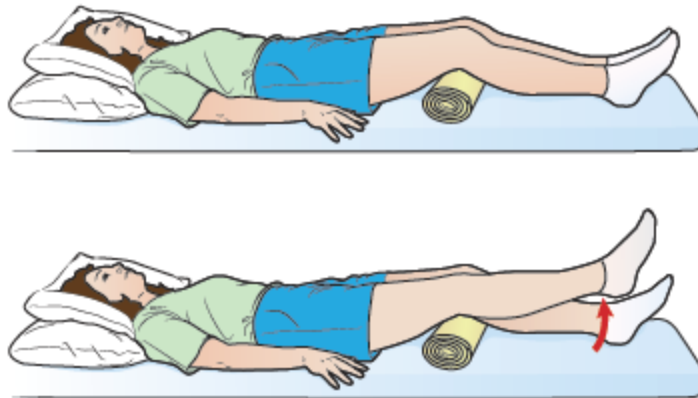


Figure 8. Short arc quads

Driving

Ask your healthcare provider when you can drive. 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. They'll tell you when it may be safe for you to start working again based on what you do. If you move around a lot or lift heavy objects, you may need to stay out a little longer. If you sit at a desk, you may be able to go back sooner.

Traveling

Do not travel by airplane until your healthcare provider says it's OK. Talk with your healthcare provider before taking any long trips after your surgery.

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 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. 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 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.

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

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. To make an appointment, ask your healthcare provider for a referral or call the number above.

Female Sexual Medicine and Women's Health Program

646-888-5076

Cancer and cancer treatments can affect your sexual health, fertility, or both. Our Female Sexual Medicine and Women's Health Program can help with sexual health problems, such as premature menopause or fertility

issues. We can help before, during, or after your treatment. Call for more information or to make an appointment.

Food Pantry Program

646-888-8055

We give 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

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. To schedule an appointment for these services, call 646-449-1010.

You can also schedule a consultation with a healthcare provider in the Integrative Medicine Service. They will work with you to come up with a plan for creating a healthy lifestyle and managing side effects. To make an appointment, call 646-608-8550.

Male Sexual and Reproductive Medicine Program

646-888-6024

Cancer and cancer treatments can affect your sexual health, fertility, or both. Our Male Sexual and Reproductive Medicine Program can help with sexual health problems, such as erectile dysfunction (ED). We can help before, during, or after your treatment. Call for more information or to make an appointment.

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 LibGuides on MSK's library website at libguides.mskcc.org

Nutrition Services

www.msk.org/nutrition

212-639-7312

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

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 and Caregiver Peer Support Program

212-639-5007

It can be comforting to talk 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. Your conversations are private. They can be 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 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 for more information.

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.

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. They also have information about financial resources, if you're having trouble paying your bills. Call the number above for more information.

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 for information.

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 for more information about Virtual Programs or to register.

Notes _____

Notes _____



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).

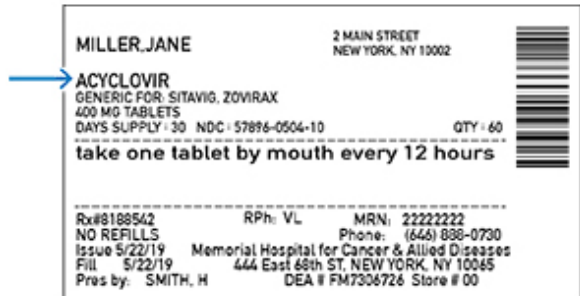


Figure 2. Active ingredients on a prescription medicine label

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

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 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.

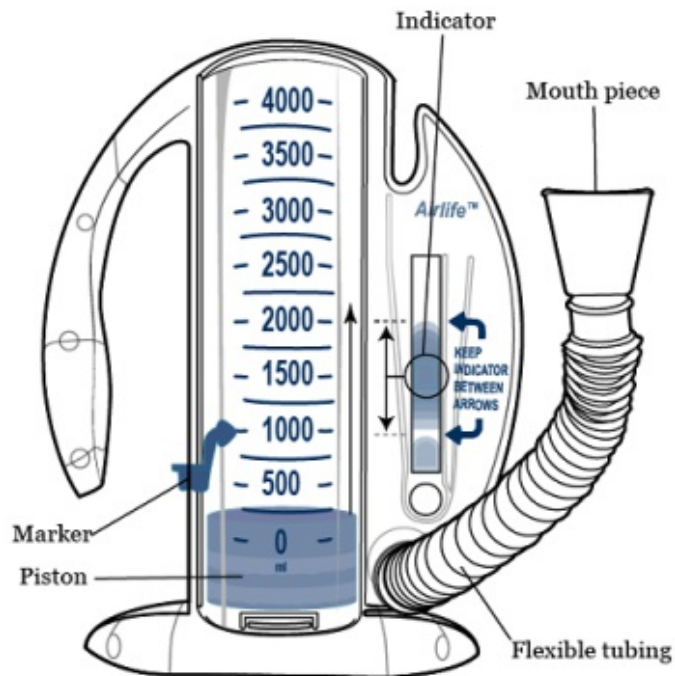


Figure 1. Parts of an incentive spirometer

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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