



About Your Total Pancreatectomy

This guide will help you get ready for your total pancreatectomy (PAN-kree-uh-TEK-toh-mee) 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/total-pancreatectomy to view this guide online.

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About your total pancreatectomy

A total pancreatectomy is a surgery to take out your entire pancreas.

About your pancreas

Your pancreas is in the back of your abdomen (belly) behind your stomach and just above your small intestine (see Figure 1).

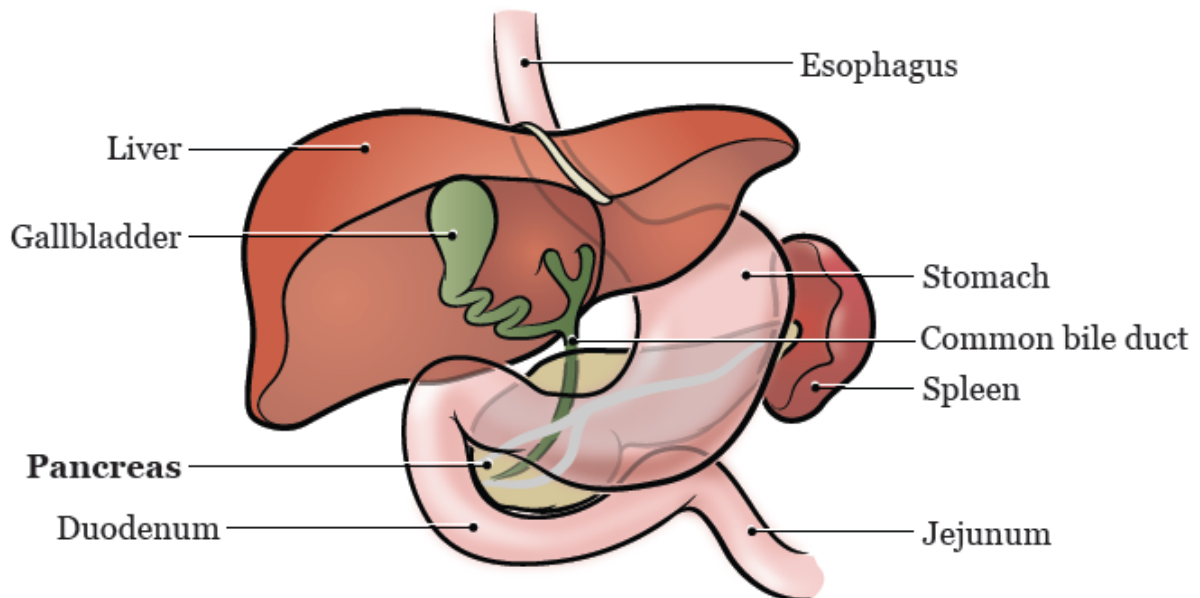


Figure 1. Your pancreas

Pancreas function

Your pancreas makes enzymes that help digest fat. Your pancreas also makes 2 hormones: insulin and glucagon. They help regulate your blood glucose (blood sugar) levels.

After your surgery, you must take an enzyme replacement medicine with your meals for the rest of your life. You must also take insulin for the rest of your life. If you don't, this can lead to diabetic ketoacidosis (DKA).

DKA can be life-threatening. If you have DKA or think you have DKA, seek medical attention right away. Call your diabetes healthcare provider, go to your local emergency room, or call 911. Read *Diabetic Ketoacidosis (DKA) and Ketone Urine Testing* to learn more. You can find it at www.msk.org/pe/dka-ketone-urine-testing or as for a printed copy.

Total pancreatectomy

During your surgery, your surgeon will take out your pancreas. Because of where your pancreas is in your body, they will also need to take out other organs (see Figure 2). These are:

- Part of your stomach.
- Your duodenum (the first part of your small intestine).
- The end of your common bile duct.
- Your gallbladder.
- Your spleen. If your surgeon removes your spleen, you will need to get vaccines after your surgery. Your healthcare provider will discuss this with you at your post-op visit.

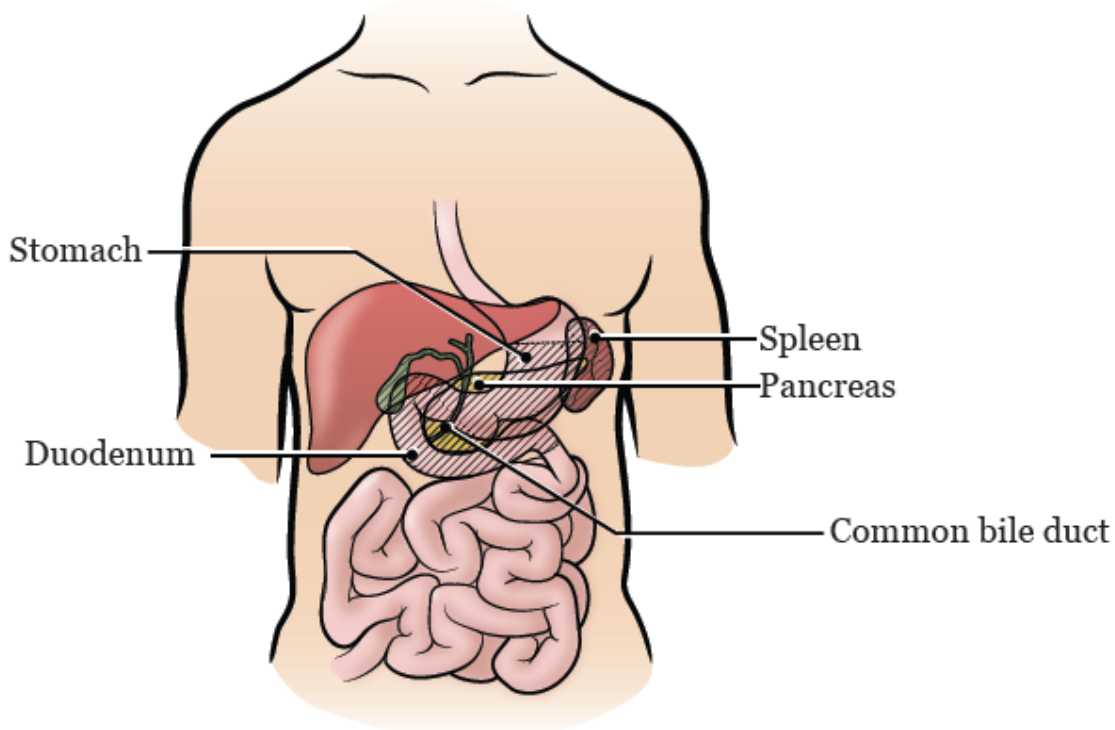


Figure 2. The organs your surgeon will take out during your surgery

Your surgeon will reconnect your stomach and remaining portion of your common bile duct to your jejunum. This lets food and bile flow into your small intestines. Your jejunum is the second part of your small intestine (see Figure 3).

This surgery takes 3 to 4 hours.

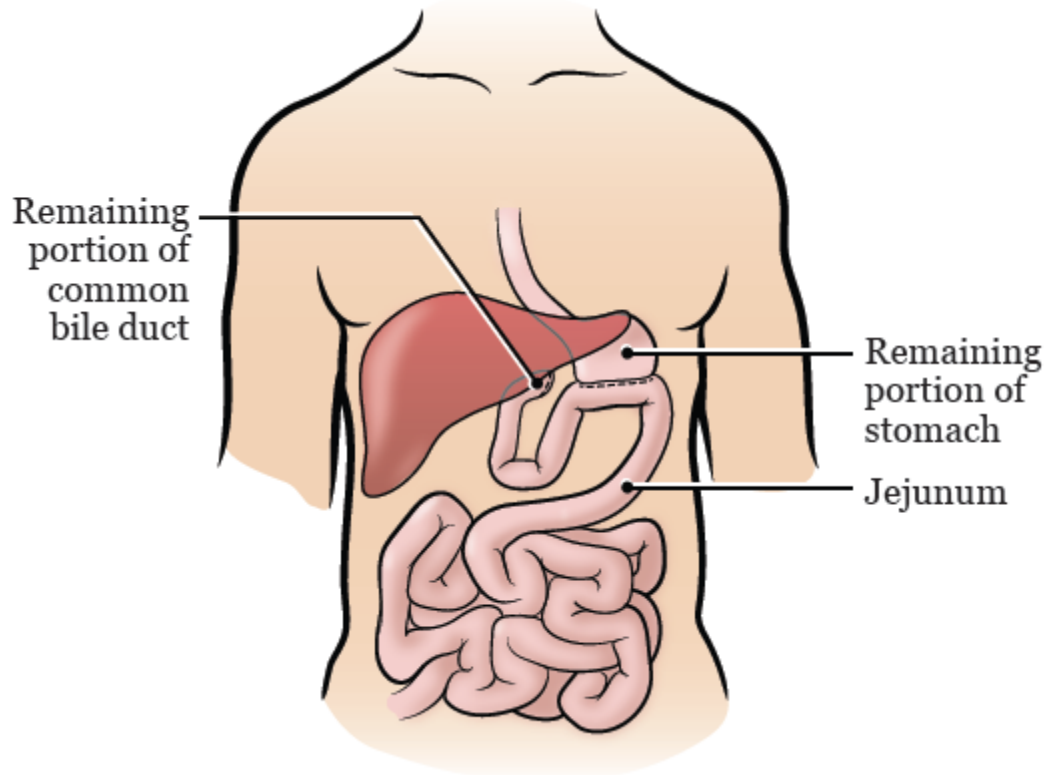


Figure 3. Your abdomen after your surgery

Diabetes after your total pancreatectomy

After your pancreas is removed, you will have type 1 diabetes mellitus (T1DM). This means your body cannot make insulin. This will affect how your body processes blood glucose. Glucose is the main source of energy for your body and comes from the foods you eat. Lifestyle habits like eating healthy, exercising and maintaining a healthy weight also affect glucose levels.

Getting ready for 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 any prescription medicines. A prescription medicine is one you can only get with a prescription from a healthcare provider. Examples include:
 - Medicines you swallow.
 - Medicines you take as an injection (shot).
 - Medicines you inhale (breathe in).
 - Medicines you put on your skin as a patch or cream.
- 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.
- I have a pacemaker, automatic implantable cardioverter-defibrillator (AICD), or other heart device.
- 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 use recreational drugs, such as marijuana.

Always be sure your healthcare providers know all the medicines and supplements you're taking.

You may need to follow special instructions before surgery based on the medicines and supplements you take. If you do not follow those instructions, your surgery may be delayed or canceled.

GLP-1 medicines for weight loss

It's important to tell your healthcare provider if you take a GLP-1 medicine. You will need to follow special eating and drinking instructions before your surgery or procedure. **It is very important to follow these instructions. If you do not follow them, your surgery may be delayed or canceled.**

- **Follow a clear liquid diet the day before your surgery.** Do not eat any solid food. Read *Clear Liquid Diet* to learn more. You can find it at www.msk.org/pe/clear-liquid-diet or ask for a printed copy.
- **Stop drinking 8 hours before your arrival time.** Do not eat or drink anything after this time, including clear liquids. You can have small sips of water with your medicines.

Read *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* to learn more. You can ask for a printed copy or find it at www.msk.org/pe/eat-drink-glp1.

Here are some examples of GLP-1 medicines. There are others, so be sure your care team knows all the medicines you take. Sometimes, these are prescribed to help manage diabetes or other conditions. Other times, they are prescribed for weight loss.

- Semaglutide (Wegovy®, Ozempic®, Rybelsus®)
- Dulaglutide (Trulicity®)
- Tirzepatide (Zepbound®, Mounjaro®)
- Liraglutide (Saxenda®, Victoza®)

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 or use an electronic smoking device, you can have breathing problems when you have surgery. Vapes and e-cigarettes are examples of electronic smoking devices. Stopping for even a few days before surgery can help prevent breathing problems during and after surgery.

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 MSK MyChart

MSK MyChart (mskmychart.mskcc.org) is MSK's 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 an MSK MyChart account, you can sign up at mskmychart.mskcc.org. You can also ask a member of your care team to send you an invitation.

If you need help with your account, call the MSK MyChart Help Desk at 646-227-2593. They are available Monday through Friday between 9 a.m. and 5 p.m. (Eastern time).

Within 30 days of your 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 go to www.msk.org/pe/guide-caregivers to find it online.

It's important to find a caregiver who can help learn about blood glucose monitoring and insulin injections after your surgery. If you cannot find a reliable caregiver that can help you after surgery, contact your surgeon's office right away.

Meet with an MSK endocrinologist and Certified diabetes Care and Education Specialist (CDCES)

Your surgeon's office will help schedule a visit with an MSK endocrinologist (EN-doh-krih-NAH-loh-jist) and an MSK certified diabetes educator (CDE). An endocrinologist is a doctor with special training in endocrine problems. These disorders affect glands and organs that make hormones, and include diabetes, infertility, and thyroid, adrenal, and pituitary gland problems.

These providers will talk to you about your new T1DM diagnosis. They will also teach you how to do fingersticks and insulin injections (shots).

If you cannot meet with an endocrinologist and CDCES before your surgery, contact your surgeon's office.

Find a community endocrinologist

You'll meet with an MSK endocrinologist before your surgery. They will manage your insulin and T1DM while you're in hospital after surgery. Once you are discharged, you'll need to find an endocrinologist in your community. Your MSK endocrinologist may follow you until you find one.

Meet with an MSK social worker

Your surgeon's office will help schedule a meeting with an MSK social worker before your surgery. They will talk to you about how to manage your new T1DM diagnosis and the lifestyle changes that come with it. They will discuss social supports and resources to help you after surgery.

If you cannot meet with an MSK social worker before your surgery, contact your surgeon's office.

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.

Do physical activity

Doing physical activity will help your body get into its best condition for your surgery. It will also make your recovery faster and easier.

Try to do physical activity every day. Any activity that makes your heart beat faster, such as walking, swimming, or biking, is a good choice. If it's cold outside, use stairs in your home or go to a mall or shopping center.

Follow a healthy diet

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

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

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

Buy clear liquids

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

7 days before your surgery

Follow your healthcare provider's instructions for taking aspirin

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

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

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

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

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

2 days before your surgery

Stop taking nonsteroidal anti-inflammatory drugs (NSAIDs)

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

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

1 day before your surgery

You can eat a regular diet the day before your surgery. Stop eating at midnight.

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.
 - Open the 4% CHG solution bottle. Pour some into your hand or a clean washcloth.
 - 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.
3. Move back into the shower stream to rinse off the 4% CHG solution. Use warm water.
4. 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

Important: If you take a GLP-1 medicine, do not follow these instructions. Follow the instructions in *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* (www.msk.org/pe/eat-drink-glp1) instead.



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

Your healthcare provider may have given you different instructions for when to stop eating. If so, follow their instructions. Some people need to fast (not eat) for longer before their surgery.

The day of your surgery

Instructions for drinking

Important: If you take a GLP-1 medicine, do not follow these instructions. Follow the instructions in *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* (www.msk.org/pe/eat-drink-glp1) instead.

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 flavored syrup.

If you have diabetes, pay attention to the amount of sugar in your 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.

Your healthcare provider may have given you different instructions for when to stop drinking. If so, follow their instructions.

Take your medicines as instructed

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

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. Take off 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. We'll give you disposable underwear and a pad if you need them.

What to bring

- Sneakers that lace up. You may have some swelling in your feet after surgery. Lace-up sneakers can fit over this swelling.
- 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. Eyeglasses, hearing aids, dentures, prosthetic devices, wigs, and religious articles are examples of personal items.
- This guide. You'll use it to 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.

We'll give you a hospital gown, robe, and nonskid socks to wear when it's time to change for surgery.



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 medicines you took after midnight (12 a.m.) and the time you took them. Make sure to include prescription and over-the-counter medicines, patches, and creams.

Your nurse may place an IV line in one of your veins, usually in your arm or hand. If your nurse does not place the IV, your anesthesiologist (A-nes-THEE-zee-AH-loh-jist) will do it in the operating room.

Meet with an anesthesiologist

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

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

Get ready for surgery

When it's time for your surgery, you'll 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 put 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 close your incisions with staples or stitches once they finish your surgery. They'll cover your incisions with a bandage.

Your care team will usually take out your breathing tube while you're still in the operating room.

In the Post-Anesthesia Care Unit (PACU)

You'll be in the PACU when you wake up after your surgery. 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.

A nurse will also track your blood glucose while you're in the PACU.

You will have a Foley catheter in your bladder to monitor the amount of urine you're making. Your care team will take it out 2 or 3 days after your surgery.

Your visitors can see you briefly in the PACU, usually within 90 minutes after you arrive there. A member of the nursing staff will explain the guidelines to them.

Pain medicine

You'll have some pain after your surgery. At first, you'll get your pain medicine through your epidural catheter or IV line. You'll be able to control your pain medicine using a PCA device.

You'll be able to control your pain medicine using a button called a patient-controlled analgesia (PCA) device. Read *Patient-Controlled Analgesia (PCA)* to learn more. You can find it at www.msk.org/pe/pca or ask for a printed copy.

Tubes and drains

You may have a drain in your abdomen to drain extra fluid from the area. Most of the time, the drains are removed after a few days. If you go home with a drain, your nurse will show you how to care for it.

Checking your blood glucose

Members of your care team will do fingersticks to check your blood glucose. They will do this every 2 to 4 hours in the PACU and when you arrive to your hospital room. They will give you insulin injections, as needed.

Moving to your hospital room

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

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.

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

Your care team will teach you how to care for yourself while you're healing from your surgery. You and your caregiver must learn how to do fingersticks and inject insulin. A nurse will teach you how to do this after surgery.

Managing your pain

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

We will ask you about your pain often and give you medicine as needed. Tell one of your healthcare providers if your pain is not relieved. 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 medicine 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 medicine.

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.

To learn more about how walking can help you recover, read *Frequently Asked Questions About Walking After Your Surgery*. You can find it at www.msk.org/pe/walking-after-surgery or ask for a printed copy.

To learn what you can do to stay safe and keep from falling while you're in the hospital, read *Call! Don't Fall!* You can ask for a printed copy or find it at www.msk.org/pe/call-dont-fall

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. Read *How to Use Your Incentive Spirometer* to learn more. You can find it in the "Educational resources" section of this guide.
- Do coughing and deep breathing exercises. A member of your care team will teach you how.

Eating and drinking

You will be on a liquid diet for the first day or 2 following your surgery. After that, you can progress to a consistent carbohydrate diet. A consistent carbohydrate diet will help you control your glucose.

You'll need to count carbohydrates after surgery. An MSK dietitian and MSK CDE will work closely with you to plan your diet before you're discharged.

At first, you'll need to eat smaller portions of food than you did before your surgery. Try to eat 4 to 6 small meals a day. If you find that your appetite is not good at first, you may try a supplement such as Glucerna®.

You will take pancreatic enzyme replacement pills before every meal and with snacks. They help you digest fats. If you have diarrhea, tell your doctor or nurse. The dose of your enzyme pills may need to be adjusted. Finding the right dose may take weeks or even months.

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

Managing diabetes

We will need to monitor your blood glucose levels during your hospital stay. A nurse will check your blood glucose by fingerstick. They will give you insulin to manage your blood glucose levels as needed. You'll need to manage your blood glucose and inject insulin before you're discharged.

You will see an endocrinologist during your stay. You will also see a diabetes nurse educator. This nurse will work closely with you and your caregiver to prepare you for managing your diabetes. They will teach you:

- How diabetes affects your body.
- How to check your blood glucose.
- How to give yourself an insulin injection.
- How to manage your blood glucose with your diet.

Read *About Newly Diagnosed Type 1 Diabetes Mellitus (T1DM)* to learn more. You can find it at www.msk.org/pe/new-t1dm or ask for a printed copy.

You will need to see an endocrinologist close to home to help manage your diabetes after you leave the hospital. It's best to see a local endocrinologist near your home 2 to 4 weeks after your surgery. Talk with your healthcare provider if you need help with this.

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 for a printed copy.

Filling out your Recovery Tracker

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

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

Based on your answers, we may reach out to you for more information. Sometimes, we may ask you to call your surgeon's office. You can always contact your surgeon's office if you have any questions.

To learn more, read *Common Questions About MSK's Recovery Tracker*. You can find it in the "Educational resources" section of this guide.

Managing diabetes

It's important to follow your diabetes providers instructions and make healthy lifestyle choices. This will help you feel good. It will also help you keep your blood glucose at safe levels and prevent diabetes-related problems.

There are several things you must do to safely manage T1DM after having your pancreas removed.

Check your blood glucose

Checking your blood glucose tells you if your glucose levels are too high or too low. Knowing this will help you take actions to keep your blood glucose within range. You can monitor can be done either by fingerstick or with a continuous glucose monitor (CGM). Read *About Your Continuous Glucose Monitor (CGM)* to learn more. You can find it at www.msk.org/pe/cgm or as for a printed copy.

Take insulin injections

You must take insulin injections before each meal and at bedtime for the rest of your life.

Manage your diet

Try to eat regularly scheduled meals as much as possible. Do not let too much time pass without checking your blood glucose, eating, and taking your prescribed amount of insulin.

You must take a pill form of pancreatic enzymes to help digest your food for the rest of your life.

Managing your pain

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

Follow these guidelines to help manage your pain at home.

- Take your medicines as directed and as needed.
- Call your healthcare provider if the medicine prescribed for you does not help your pain.
- Do not drive or drink alcohol while you're taking prescription pain medicine. Some prescription pain medicines can make you drowsy (very sleepy). Alcohol can make the drowsiness worse.
- You'll have less pain and need less pain medicine as your incision heals. 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 medicine.
 - Do not take too much of any medicine. Follow the instructions on the label or from your healthcare provider.
 - Read the labels on all the medicines you're taking. This is very important if you're taking acetaminophen. Acetaminophen is an ingredient in many over-the-counter and prescription medicines. Taking too much can harm your liver. Do not take more than one medicine that has acetaminophen without talking with a member of your care team.
- Pain medicine should help you get back to your usual activities. Take enough to do your activities and exercises comfortably. You may have a little more pain as you start to be more active.
- Keep track of when you take your pain medicine. It works best 30 to 45 minutes after you take it. Taking it when you first have pain is better than waiting for the pain to get worse.

Some prescription pain medicines, such as opioids, may cause constipation. Constipation is when you poop less often than usual, have a harder time pooping, or both.

Preventing and managing constipation

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

- Exercise, if you can. Walking is a great type of exercise that can help prevent and manage constipation.
- Drink 8 to 10 (8-ounce) cups (2 liters) of liquids daily, if you can. Choose water, juices (such as prune juice), soups, and milkshakes. Limit liquids with caffeine, such as coffee and soda. Caffeine can pull fluid out of your body.
- Both over-the-counter and prescription medicines can treat constipation. Ask your healthcare provider before taking any medicine for constipation. Follow the instructions on the label or from your healthcare provider. Examples of over-the-counter medicines for constipation are:
 - Docusate sodium (Colace®). This is a stool softener (medicine 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 (medicine that causes bowel movements) that causes few side effects. Take it with 8 ounces (1 cup) of a liquid.
 - Senna (Senokot®). This is a stimulant laxative, which can cause cramping. It's best to take it at bedtime.

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

Caring for your incision

The location of your incision will depend on the type of surgery you had. It's normal for the skin below the incision to feel numb, because some of the nerves were cut. The numbness will go away over time.

- By the time you're ready to leave the hospital, your surgical incision will have begun to heal.
- Look at your incision with your nurse before you leave the hospital so you know what it looks like. Have a caregiver to this with you so they can help you, if needed.
- If any fluid is draining from your incision, write down the amount and color. Call your doctor's office to talk with the nurse about any drainage from your incision.

Change your bandages at least once a day. Do this more often if they get wet with drainage. When there is no longer any drainage coming from your incision, leave it uncovered.

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

Showering

Taking a warm shower can help you relax and decrease muscle aches. Use soap when you shower and gently wash your incision.

Pat the areas dry with a towel after showering. Leave your incision uncovered, unless there's drainage. If you see any redness or drainage from your incision, call your doctor.

Don't take tub baths until you talk with your doctor at the first appointment after your surgery.

Eating and drinking

You will need to follow a consistent carbohydrate diet after surgery. A balanced diet will help keep your blood glucose levels within your target range. Your care team will discuss your diet with you. If you have any questions about your diet, call 212-639-7312 to talk with a clinical dietitian nutritionist.

You may not have an appetite after your surgery. Try to eat small amounts of food often throughout the day.

It's important that you don't skip entire meals. This can cause hypoglycemia (low blood sugar). Symptoms of hypoglycemia include feeling faint, problems seeing, headache, shakiness, sweating, and a fast, forceful heartbeat.

Hypoglycemia can cause a life-threatening condition called Diabetic Ketoacidosis (DKA) if it isn't treated. If your blood glucose is too high or too low it is important to notify your doctor immediately.

Always carry a source of sugar with you. It can be hard candy or glucose tablets. Take it right away if you have any symptoms of hypoglycemia.

You may lose weight during the first couple of weeks after your surgery. You may regain the weight slowly as your appetite and amount of food you can eat increases but not everyone does. Your goal is to maintain your new weight.

After surgery, you must take an enzyme replacement pill with your meals. This will help you digest and absorb fat.

Physical activity and exercise

Doing physical activity, such as walking and stair climbing, will help you gain strength and feel better. Each time you walk, try to walk a little bit farther than you did the last time. Climb stairs slowly, resting or stopping as needed. Ask your doctor or nurse before starting more intense exercises.

Check with your doctor before you do any heavy lifting. Normally, you shouldn't lift anything heavier than 10 pounds (4.5 kilograms) for at least 6 weeks. Ask your doctor how long you should avoid heavy lifting.

It's common to have less energy than usual after surgery. This may last for 6 to 8 weeks and improve slowly over time. Try to do more activity each day as much as you can.

Always balance activity periods with rest periods. Rest is an important part of your recovery. You may need a nap during the day. Try to stay out of bed as much as possible so you can sleep at night.

Driving

Ask your healthcare provider when you can drive. Most people can start driving again 2 to 3 weeks after surgery. Do not drive while you're taking pain medicine 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

Talk with your healthcare provider before traveling. You may need to take certain precautions.

Managing your feelings

You may have new and upsetting feelings after a surgery for a serious illness. Many people say they felt weepy, sad, worried, nervous, irritable, or 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. We can also reassure, support, and guide you. It's always a good idea to let us know how you, your family, and your friends are feeling emotionally. Many resources are available to you and your family. We're here to help you and your family and friends handle the emotional aspects of your illness. We can help no matter if you're in the hospital or at home.

First appointment after your surgery

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

You must follow up with an MSK endocrinologist and a local endocrinologist before you're discharged. Tell your surgeon's team in the hospital if you do not have this scheduled.

When to call your healthcare provider



Call your healthcare provider if:

- You have a fever of 101 °F (38.3 °C) or higher.
- You have chills.
- The area around your incision is getting more red.
- There is more drainage coming from your incision than usual.
- You have new pain, or your pain is getting worse.
- You have diarrhea (loose or watery poop).
- You have constipation that doesn't get better in 2 to 3 days.
- You feel nausea (like you're going to throw up).
- You vomit (throw up).
- You have a hard time keeping your blood glucose levels in your target range.
- You have any new or unexplained symptoms.

Contact information

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call.

If you're not sure how to reach your healthcare provider, call 212-639-2000.

MSK support services

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

www.msk.org/international

888-675-7722

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

Counseling Center

www.msk.org/counseling

646-888-0200

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

Food Pantry Program

646-888-8055

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

Integrative Medicine and Wellness Service

www.msk.org/integrativemedicine

Our Integrative Medicine and Wellness Service offers many services to complement (go along with) traditional medical care. For example, we offer music therapy, mind/body therapies, dance and movement therapy, yoga, and touch therapy. Call 646-449-1010 to make an appointment for these services.

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

MSK Library

library.mskcc.org

You can visit our library website or email asklibrarian@mskcc.org to talk with the library reference staff. They can help you find more information about a type of cancer. You can also visit libguides.mskcc.org/patienteducation to see the library's Patient Education Resource Guide.

Nutrition Services

www.msk.org/nutrition

212-639-7312

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

Patient and Community Education

www.msk.org/pe

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

Patient Billing

646-227-3378

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

Patient Representative Office

212-639-7202

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

Perioperative Nurse Liaison

212-639-5935

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

Private Duty Nurses and Companions

646-357-9272

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

Rehabilitation Services

www.msk.org/rehabilitation

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

- **Rehabilitation medicine doctors** diagnose and treat problems that affect how you move and do activities. They can design and help coordinate your rehabilitation therapy program, either at MSK or somewhere closer to home. Call Rehabilitation Medicine (Physiatry) at 646-888-1929 to learn more.
- An **OT** can help if you're having trouble doing usual daily activities. For example, they can recommend tools to help make daily tasks easier. A **PT** can teach you exercises to help build strength and flexibility. Call Rehabilitation Therapy at 646-888-1900 to learn more.

Resources for Life After Cancer (RLAC) Program

646-888-8106

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

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

Sexual Health Programs

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

- Our **Female Sexual Medicine and Women's Health Program** can help with sexual health problems such as premature menopause or fertility issues. Ask a member of your MSK care team for a referral or call 646-888-5076 to learn more.
- Our **Male Sexual and Reproductive Medicine Program** can help with sexual health problems such as erectile dysfunction (ED). Ask a member of your care team for a referral or call 646-888-6024 to learn more.

Social Work

www.msk.org/socialwork

212-639-7020

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

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

Spiritual Care

212-639-5982

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

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

Tobacco Treatment Program

www.msk.org/tobacco
212-610-0507

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

Virtual Programs

www.msk.org/vp

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

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

External support services

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

Visit www.msk.org/pe/external-support-services for a list of these support services. You can also call 212-639-7020 to talk with an MSK social worker.

Notes _____

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

- ***A Guide for Caregivers*** (www.msk.org/pe/guide-caregivers)
- ***Advance Care Planning*** (www.msk.org/pe/advance-care-planning)
- ***Call! Don't Fall!*** (www.msk.org/pe/call-dont-fall)
- ***Common Questions About MSK's Recovery Tracker***
(www.msk.org/pe/recovery-tracker)
- ***Frequently Asked Questions About Walking After Your Surgery***
(www.msk.org/pe/walking-after-surgery)
- ***Herbal Remedies and Cancer Treatment*** (www.msk.org/pe/herbal-remedies)
- ***How to Be a Health Care Agent*** (www.msk.org/pe/health-care-agent)
- ***How To Check if a Medicine or Supplement Has Aspirin, Other NSAIDs, Vitamin E, or Fish Oil*** (www.msk.org/pe/check-med-supplement)
- ***How to Enroll in MyMSK: Memorial Sloan Kettering's Patient Portal***
(www.msk.org/pe/enroll-mysk)
- ***How to Use Your Incentive Spirometer*** (www.msk.org/pe/incentive-spirometer)
- ***Patient-Controlled Analgesia (PCA)*** (www.msk.org/pe/pca)
- ***What You Can Do to Avoid Falling*** (www.msk.org/pe/avoid-falling)



PATIENT & CAREGIVER EDUCATION

Herbal Remedies and Cancer Treatment

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

About Herbal Remedies

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

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

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

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

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

Talk with your healthcare provider about any herbal remedies or other

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

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

Stop taking herbal remedies before your treatment

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

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

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

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

Common Herbal Remedies and Their Effects

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

Echinacea (EH-kih-NAY-shuh)

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

Garlic

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

Gingko (also known as Gingko biloba)

- Can increase your risk of bleeding.

Ginseng (JIN-seng)

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

Turmeric (TER-mayr-ik)

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

St. John's Wort

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

Valerian (vuh-LEER-ee-un)

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

Herbal formulas

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

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

Contact Information

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

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

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

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

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PATIENT & CAREGIVER EDUCATION

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

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

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

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

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

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

What is an active ingredient?

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

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

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

How to find a medicine or supplement's active ingredients

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

Over-the-counter medicines

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

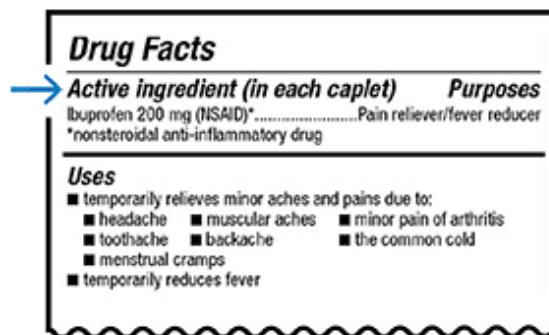


Figure 1. Active ingredients on an over-the-counter medicine label

Prescription medicines

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

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

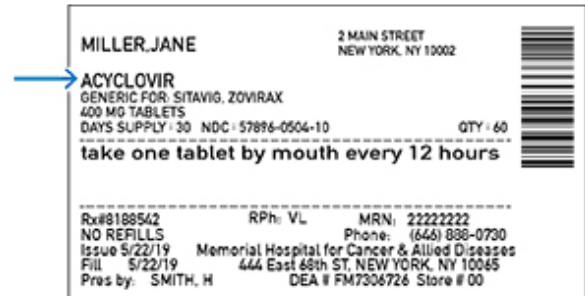


Figure 2. Active ingredients on a prescription medicine label

Dietary supplements

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

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

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

Figure 3. Active ingredients on a supplement label

Active ingredients to look for

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

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

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

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

About acetaminophen (Tylenol)

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

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

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

Instructions before your cancer treatment

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

Before your surgery

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

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

Before your radiology procedure

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

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

Before and during your chemotherapy

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

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

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

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

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PATIENT & CAREGIVER EDUCATION

How To Use Your Incentive Spirometer

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

About your incentive spirometer

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

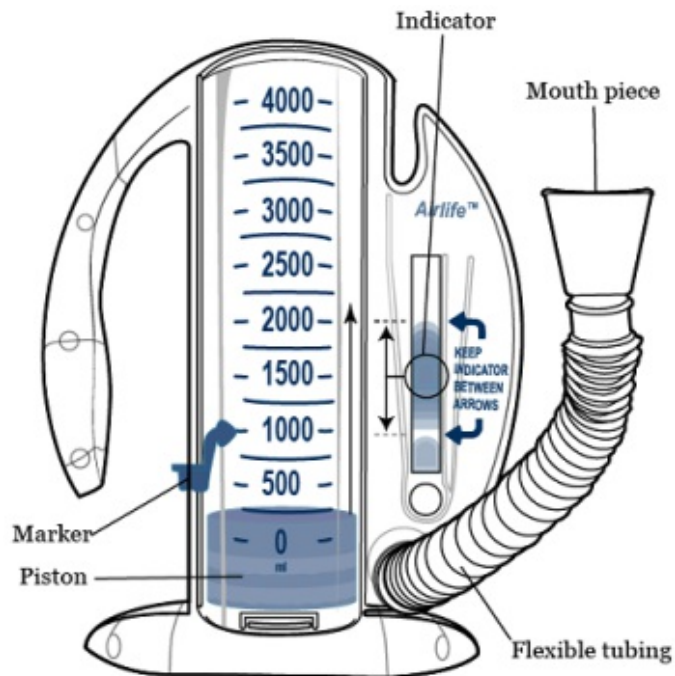


Figure 1. Parts of an incentive spirometer

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

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

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

How to use your incentive spirometer

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



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

Setting up your incentive spirometer

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

Knowing what number to aim for on your incentive spirometer

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

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

incentive spirometer” section.

Using your incentive spirometer

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

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

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

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

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

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

Tips for using your incentive spirometer

Follow these tips when using your incentive spirometer:

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

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

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

Common questions about your incentive spirometer

How often should I use my incentive spirometer?

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

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

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

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

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

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

How do I clean my incentive spirometer?

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

What do the numbers on my incentive spirometer measure?

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

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

What number I should aim for?

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

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

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

What does the coaching indicator on my incentive spirometer measure?

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

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

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

When to call your healthcare provider

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

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

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

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

How To Use Your Incentive Spirometer - Last updated on November 24, 2023

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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 care team decide is right for you.

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

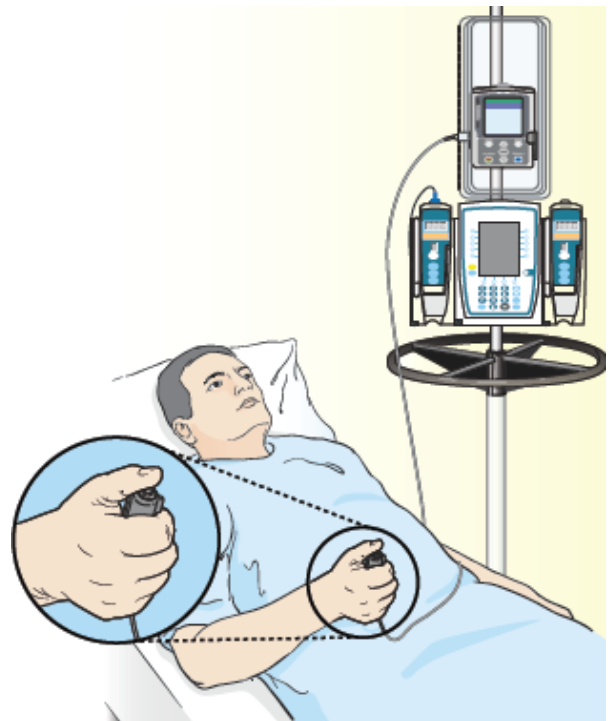


Figure 1. Using the PCA pump

Using the PCA pump

Press the button attached to the pump when you have pain to give yourself pain medication (see Figure 1). The pump will send a safe dose of the medication your care team 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 will not 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 care team if the PCA is not helping with your pain. You should also tell your care team if your pain changes, gets worse, feels different than before, or if you feel pain in a new place. They 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 care team may change your dose or give you a different medication with fewer side effects.

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.

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Patient-Controlled Analgesia (PCA) - Last updated on May 2, 2023

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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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