



PATIENT & CAREGIVER EDUCATION

About Your Flexible Bronchoscopy

This information will help you get ready for your flexible bronchoscopy at Memorial Sloan Kettering (MSK).

A bronchoscopy is a procedure that lets your doctor to look inside your lung airways using a bronchoscope (a flexible tube with a camera). The bronchoscope is placed in your mouth or nose and moved down your throat and trachea (windpipe), into your airways.

During your flexible bronchoscopy, your doctor may take biopsies (tissue samples) from your airway, your lymph nodes outside your airway, or your lungs. They may also wash your airways with a saline solution to clear your airways or lungs.

You may have other procedures done at the same time as your flexible bronchoscopy, such as an ultrasound, medical lasering to get rid of tissue, or placement of a stent (hollow tube that helps keep your airway open). If you need a stent, read the resource *Tracheal or Bronchial Stent Placement* (www.mskcc.org/pe/tracheal_bronchial_stent). You can find it online or ask your healthcare provider for a copy.

During your clinic visit, your doctor will explain the procedure to you and answer your questions. You'll be asked to sign a consent form. How you get ready for your flexible bronchoscopy will depend on where you'll have it done. Your bronchoscopy may be done either:

- In the operating room at 1275 York Avenue (take the B elevator to the 6th floor).** Read the “Presurgical testing” section.
- In the endoscopy suite at 1275 York Avenue (take the M elevator to**

the 2nd floor). Skip the “Presurgical testing” section and read the section “Talk with your endoscopy nurse” instead.

Before Your Procedure

Presurgical testing

If you’re having your bronchoscopy in the operating room on the 6th floor, you’ll need to have a Presurgical Testing (PST) appointment within 30 days of your procedure.

During your appointment, you’ll meet with a nurse practitioner (NP) who works closely with anesthesiology staff (doctors and specialized nurses who will give you anesthesia during your procedure). Your NP will review your medical and surgical history with you. You’ll have tests, including an electrocardiogram (EKG) to check your heart rhythm, a chest x-ray, blood tests, and any other tests needed to plan your care. Your NP may also recommend that you see other healthcare providers.

Your NP will talk with you about which medications you should take the morning of your procedure.

It’s very helpful to bring the following things to your PST appointment:

- A list of all the medications you’re taking, including prescription and over-the-counter medications, patches, and creams.
- Results of any tests done outside of MSK, such as a cardiac stress test, echocardiogram, or carotid doppler study.
- The name(s) and telephone number(s) of your doctor(s).

Talk with your endoscopy nurse

If you’re having your bronchoscopy in the endoscopy suite on the 2nd floor, an endoscopy nurse will call you before your procedure. They’ll confirm the type of procedure(s) you’re having and review the instructions listed in this resource with you. Your nurse will also ask you questions about your medical history and all the medications you’re taking.

Getting ready for your procedure

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

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

- I take a blood thinner, such as:
 - Aspirin
 - Heparin
 - Warfarin (Jantoven® or Coumadin®)
 - Clopidogrel (Plavix®)
 - Enoxaparin (Lovenox®)
 - Dabigatran (Pradaxa®)
 - Apixaban (Eliquis®)
 - Rivaroxaban (Xarelto®)

There are others, so be sure your healthcare provider knows all the medications you're taking.

- I take prescription medications (medications my healthcare provider prescribes), including patches and creams.
- I take over-the-counter medications (medications I buy without a prescription), including patches and creams.
- I take dietary supplements, such as herbs, vitamins, minerals, or natural or home remedies.
- I have a pacemaker, automatic implantable cardioverter-defibrillator (AICD), or other heart device.
- I have sleep apnea.
- I've had a problem with anesthesia (medication to make me sleep during surgery) in the past.
- I'm allergic to certain medication(s) or materials, including latex.

- I'm not willing to receive a blood transfusion.
- I drink alcohol.
- I smoke or use an electronic smoking device (such as a vape pen, e-cigarette, or Juul®).
- I use recreational drugs.

About drinking alcohol

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

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

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

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

About smoking

If you smoke, you can have breathing problems when you have a procedure. Stopping even for a few days before your procedure can help. Your healthcare provider will refer you to our Tobacco Treatment Program if you smoke. You can also reach the program by calling 212-610-0507.

About sleep apnea

Sleep apnea is a common breathing disorder that causes you to stop breathing for short periods of time while sleeping. The most common type is obstructive sleep apnea (OSA). With OSA, your airway becomes completely blocked during sleep. OSA can cause serious problems during and after your procedure.

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

Ask about your medications

You may need to stop taking some of your medications before your procedure. Talk with your healthcare provider about which medications are safe for you to stop taking. We've included some common examples below.

Anticoagulants (blood thinners)

If you take a blood thinner (medication that affects the way your blood clots), ask the doctor performing your procedure what to do. Their contact information is listed at the end of this resource. Whether they recommend you stop taking the medication depends on the reason you're taking it.

Do not stop taking your blood thinner medication without talking with your doctor.

Examples of Blood Thinners			
apixaban (Eliquis®)	dalteparin (Fragmin®)	meloxicam (Mobic®)	ticagrelor (Brilinta®)
aspirin	dipyridamole (Persantine®)	nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen	tinzaparin (Innohep®)

		(Advil [®] , Motrin [®]) or naproxen (Aleve [®])	
celecoxib (Celebrex [®])	edoxaban (Savaysa [®])	pentoxifylline (Trental [®])	warfarin (Jantoven [®] , Coumadin [®])
cilostazol (Pletal [®])	enoxaparin (Lovenox [®])	prasugrel (Effient [®])	
clopidogrel (Plavix [®])	Fondaparinux (Arixtra [®])	rivaroxaban (Xarelto [®])	
dabigatran (Pradaxa [®])	heparin (shot under your skin)	sulfasalazine (Azulfidine [®] , Sulfazine [®])	

If you take nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil[®]) or naproxen (Aleve[®]), you may need to stop taking them 2 days before your procedure.

Read our resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E* (www.mskcc.org/pe/common_meds). It has important information about medications you'll need to avoid before your procedure and what medications you can take instead

Medications for diabetes

If you take insulin or other medications for diabetes, ask the doctor who prescribes the medication what you should do the morning of your procedure. You may need to change the dose before your procedure.

Diuretics (water pills)

A diuretic is a medication that makes you urinate (pee) more often. Hydrochlorothiazide (Microzide[®]) and furosemide (Lasix[®]) are common diuretics.

If you take any diuretics, ask the healthcare provider doing your procedure what to do. You may need to stop taking them the day of your procedure.

Get a letter from your doctor, if needed

If you have an automatic implantable cardioverter-defibrillator (AICD), you'll need to get a clearance letter (a letter that says you can the procedure) from your cardiologist (heart doctor) before your procedure.

Arrange for someone to take you home

You must have a responsible care partner take you home after your procedure. A responsible care partner is someone who can help you get home safely and report concerns to your healthcare providers, if needed. Make sure to plan this before the day of your procedure.

If you don't have a responsible care partner to take you home, call one of the agencies below. They'll send someone to go home with you. There's usually a charge for this service, and you'll need to provide transportation. It's OK to use a taxi or car service, but you must still have a responsible care partner with you.

Agencies in New York

Partners in Care: 888-735-8913

Caring People: 877-227-4649

Agencies in New Jersey

Caring People: 877-227-4649

The Day Before Your Procedure

Note the time of your procedure

A staff member from the Admitting Office will call you after 2:00 PM the day before your procedure. If your procedure is scheduled for a Monday, they'll call you on the Friday before.

The staff member will tell you what time to arrive at the hospital for your procedure. They'll also remind you where to go. If you don't receive a call by 7:00 PM, please call 212-639-5014.

If you need to cancel your procedure for any reason, call the doctor who scheduled it for you.

Instructions for eating before your procedure



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

The Day of Your Procedure

Instructions for drinking before your procedure



You can drink a total of 12 ounces of water between midnight and 2 hours before your scheduled arrival time. Do not drink anything else.

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

Things to remember

- Take the medications you were instructed to take the morning of your procedure with a few sips of water.
- Wear something comfortable and loose-fitting.
- If you wear contact lenses, wear your glasses instead. Wearing contact lenses during a procedure can damage your eyes.
- Don't put on any lotion, cream, deodorant, makeup, powder, perfume, or cologne.
- Remove any jewelry, including body piercings.
- Leave valuable items (such as credit cards, jewelry, and your checkbook) at home.
- Before you're taken into the procedure room, you'll need to remove your hearing aids, dentures, prosthetic device(s), wig, and religious articles.

What to bring

- A list of the medications you take at home, including patches and creams.
- Your rescue inhaler (such as albuterol for asthma), if you have one, or any other medications for breathing.
- Your cell phone and charger.
- Only the money you may want for small purchases (such as a newspaper).
- A case for your personal items (such as eyeglasses, hearing aid(s), dentures, prosthetic device(s), wig, and religious articles), if you have one.
- Your Health Care Proxy form and other advance directives if you have completed them.

Where to park

MSK's parking garage is located on East 66th Street between York and First Avenues. If you have questions about prices, call 212-639-2338.

To reach the garage, turn onto East 66th Street from York Avenue. The garage is located about a quarter of a block in from York Avenue, on the right-hand (north) side of the street. There's a tunnel that you can walk through that connects the garage to the hospital.



There are also other garages located on East 69th Street between First and Second Avenues, East 67th Street between York and First Avenues, and East 65th Street between First and Second Avenues.

What to expect

You'll be asked to say and spell your name and birth date many times. This is for your safety. People with the same or a similar name may be having a procedure on the same day.

You'll be asked to change into a hospital gown and remove your dentures, prosthesis, and eyeglasses, if you have any.

Meet with a nurse

You'll meet with your nurse before your procedure. Tell them the dose of any medications (including patches and creams) you took after midnight and the time you took them.

Your nurse will place an intravenous (IV) line into one of your veins, usually in your arm or hand. At first, you'll get fluids through the IV, but it will be used later to give you anesthesia (medication to make you sleep during your procedure).

Meet with an anesthesiologist

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

- Review your medical history with you.
- Ask you 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 procedure.
- Talk with you about the kind of anesthesia you'll get.
- Answer your questions about your anesthesia.

During your procedure

When it's time for your procedure, you'll be brought into the procedure room and helped onto an exam table. You'll be attached to equipment to monitor your heart rate, breathing, and blood pressure. You'll also get oxygen through your nose.

You may be asked to gargle with a solution that will numb the back of your throat and stop your gag reflex during the procedure. Your doctor may spray some medication into the back of your mouth to numb your throat. You'll get anesthesia through your IV.

Once you're asleep, your doctor will insert the bronchoscope into your nose or mouth. They'll gently move it down the back of your throat and

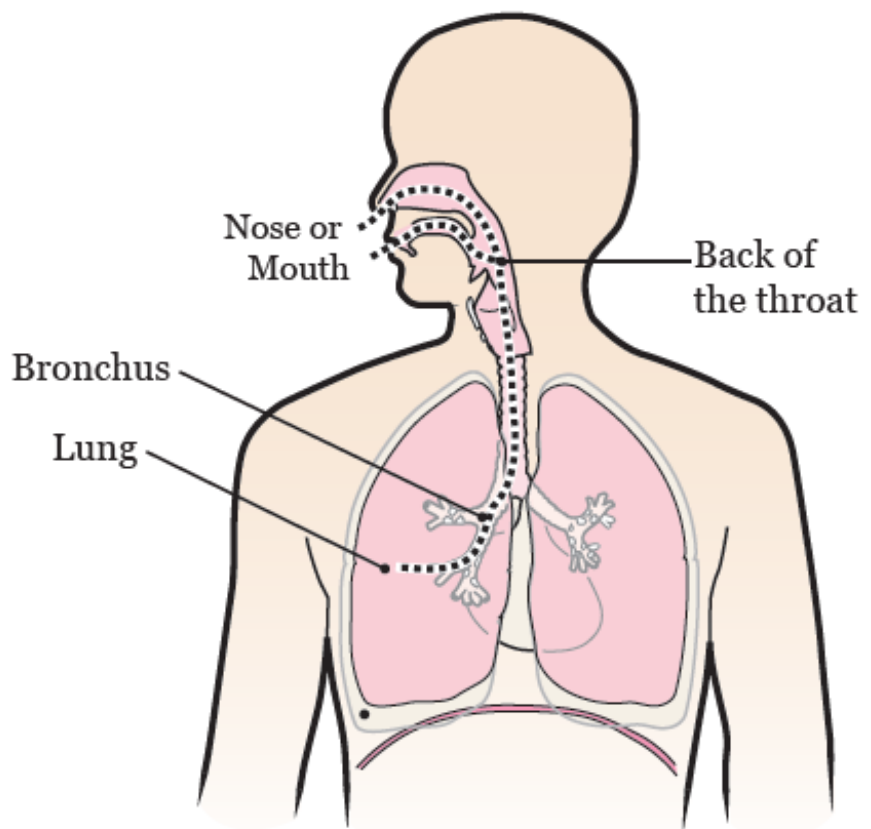


Figure 1. The bronchoscope's path during your bronchoscopy

through the large and small airways leading into your lungs (see Figure 1). If your doctor needs to take any biopsies, they may use fluoroscopy (live x-ray) or ultrasound (also called endobronchial ultrasound), to see the tissue better.

The flexible bronchoscopy usually takes about 45 minutes to 1 hour.

After Your Procedure

In the Post-Anesthesia Care Unit (PACU)

When you wake up after your procedure, you'll be in the Post-Anesthesia Care Unit (PACU).

A nurse will be keeping track of your body temperature, pulse, blood pressure, and oxygen levels. If you had a lung biopsy, you may have a chest x-ray to make sure your lung wasn't damaged. This type of injury is rare.

Once you are fully awake, your nurse may give you a drink and will take out your IV. Your doctor will talk with you and the person taking you home after your procedure to discuss how it went. If you stopped taking any medications before your procedure, ask your doctor when you can start taking them again.

Your nurse will explain your discharge instructions to you and the person taking you home before you leave. If you had a stent placed in your lung, you'll get instructions on how to take care of it.

At home

- You may have a sore throat, a low-grade fever (below 101 °F or 38.3 °C), cough up a small amount of blood, or all 3 after your procedure. These side effects should go away within 3 days. Eating soft foods and sucking on ice chips or throat lozenges may help your sore throat. Avoid eating spicy foods and smoking.
- You may cough up streaks of blood. This is normal after having this procedure. However, call your doctor's office if you cough up more than 1 teaspoon of blood.

- You can resume your usual activities after your procedure.
- A nurse will contact you the day after your procedure to ask how you're doing.
- If you had any tests done during your flexible bronchoscopy, call your doctor's office in a few days to get the results.

When to Call Your Healthcare Provider

Call your healthcare provider if you:

- Have a fever of 101 °F (38.3 °C) or higher
- Have trouble breathing or shortness of breath
- Have chest pain or a feeling of pressure in your chest
- Cough up more than 1 teaspoon of blood or cough up any amount of blood for more than 3 days after your procedure

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.

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