PATIENT & CAREGIVER EDUCATION

Image-guided Biopsy of Your Lung, Pleura, Mediastinum, or Adrenal Glands

This information will help you get ready for your image-guided biopsy of the lung, pleura, mediastinum, or adrenal glands and let you know what to expect after.

Your doctor recommended that you have a biopsy (a procedure to collect small pieces of tissue from your organs) of your lungs, pleura, mediastinum, or adrenal glands (see Figure 1). These organs are in your chest. Your lungs are surrounded by 2 layers of tissue, called the pleura, that protect your lungs. The space between the 2 layers is called the pleural space.

- Your **pleura** is 2 layers of tissue that surround and protect your lungs.
- Your **mediastinum** is the area in the middle of your chest, between your lungs.
- Your **adrenal glands** are glands that sit on top of your kidneys under your ribs and produce several hormones.
About Your Procedure

During your biopsy, your interventional radiologist will place a needle through your skin to collect a sample of tissue. An interventional radiologist is a doctor who specializes in image-guided procedures. They may use computed tomography (CT), magnetic resonance imaging (MRI), ultrasound, or fluoroscopy (realtime x-rays) to find the area to biopsy. The sample is sent to the laboratory for testing.

Air leaking around your lungs

This kind of biopsy can cause air to leak out of your lungs and collect in your pleura. If the amount of air increases, it prevents your lung from expanding fully. About 30 out of 100 people who have this biopsy have a small amount of air leakage out of their lung into their chest cavity. Most people won’t have symptoms and will get better without treatment. We will monitor you after your procedure.

Hemoptysis

Hemoptysis (coughing up blood) is caused by bleeding around your biopsy site. This can make it hard for your doctor to continue with the procedure. This
generally won’t last for more than a few minutes. You may be asked to lay on your side if this happens.

Before Your Procedure

Ask about your medications

You may need to stop taking some of your medications before your procedure. Talk with your doctor about which medications are safe for you to stop taking. We have 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.

<table>
<thead>
<tr>
<th>Examples of Blood Thinners</th>
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<tbody>
<tr>
<td>apixaban (Eliquis®)</td>
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<tr>
<td>dalteparin (Fragmin®)</td>
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<tr>
<td>meloxicam (Mobic®)</td>
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<td>ticagrelor (Brilinta®)</td>
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<td>aspirin</td>
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<td>dipyridamole (Persantine®)</td>
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<tr>
<td>nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil®) or naproxen (Aleve®)</td>
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<td>tinzaparin (Innohep®)</td>
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<td>celecoxib (Celebrex®)</td>
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<td>edoxaban (Savaysa®)</td>
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<td>pentoxifylline (Trental®)</td>
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<td>warfarin (Coumadin®)</td>
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<td>cilostazol (Pletal®)</td>
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<td>enoxaparin (Lovenox®)</td>
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<td>prasugrel (Effient®)</td>
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<td>clopidogrel (Plavix®)</td>
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<td>Fondaparinux (Arixtra®)</td>
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<td>rivaroxaban (Xarelto®)</td>
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<td>dabigatran (Pradaxa®)</td>
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<td>heparin (shot under your skin)</td>
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<td>sulfasalazine (Azulfidine®, Sulfazine®)</td>
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Please read our resource *Common Medications Containing Aspirin and Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs)* ([www.mskcc.org/pe/common_meds](http://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)**
If you take any diuretics (medications that make you urinate more often), ask the doctor performing your procedure what to do. You may need to stop taking them the day of your procedure. Diuretics are sometimes called water pills. Some examples are furosemide (Lasix®) and hydrochlorothiazide.

**Ask about air travel**
After your biopsy, there is a risk of air leaking out of your lung and collecting around it. If this happens, you won’t be able to travel by plane until the air leak closes and your doctor tells you that it’s safe to fly. If you think you will be traveling by plane within 2 weeks of your biopsy, talk with the doctor who is doing your procedure.

**Arrange for someone to take you home and stay with you overnight**
You must have a responsible care partner take you home and stay with you overnight. Make sure to plan this before the day of your procedure. If you don’t have someone to do this, tell your Interventional Radiology nurse.

**Tell us if you’re sick**
If you get sick (fever, cold, sore throat, or flu) before your procedure, call a nurse in Interventional Radiology at 212-639-2236. A nurse is available Monday through Friday from 9:00 AM to 5:00 PM. After 5:00 PM, during the weekend, and on holidays, call 212-639-2000 and ask for the Interventional Radiology fellow on call.

**Note the time of your appointment**
A staff member from Interventional Radiology will call you 2 business days before your procedure. If your procedure is scheduled on a Monday, you will be called on the Thursday before.
The staff member will tell you what time you should arrive at the hospital for your procedure. They will also tell you where to go for your procedure. If you don’t receive a call by noon the business day before your procedure, please call 212-639-5051.

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

Instructions for eating and drinking before your procedure

- Do not eat anything after midnight the night before your procedure. This includes hard candy and gum.
- Between midnight and up until 2 hours before your scheduled arrival time, you may drink a total of 12 ounces of water (see figure).
- Starting 2 hours before your scheduled arrival time, do not eat or drink anything. This includes water.

The Day of Your Procedure

Things to remember

- Take only the medications your doctor told you to take the morning of your procedure. Take them with a few sips of water.
- Don’t apply cream or petroleum jelly (Vaseline®). You can use deodorant and light moisturizers. Don’t wear eye makeup.
- Remove any jewelry, including body piercings.
- Leave all valuables (such as credit cards and jewelry) at home.
- If you wear contact lenses, wear your glasses instead, if possible.
What to bring with you

- A list of the medications you take at home, including patches and creams.
- A case for your glasses or contacts.
- Your Health Care Proxy form, if you have completed one.

Where to park

Parking at MSK is available in the garage on East 66th Street between York and First Avenues. For questions about prices, call 212-639-2338.

To reach the garage, enter 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. A pedestrian tunnel connects the garage to the hospital.

There are also nearby commercial garages on East 69th Street between First and Second Avenues and on East 65th Street between First and Second Avenues.

Where to go

Your procedure will take place at:

- Memorial Hospital (MSK’s main hospital)
  1275 York Avenue (between East 67th and East 68th Streets)
  New York, NY 10065
  Take the M elevator to the 2nd Floor. Enter through the glass doors.

Parking when you arrive

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 is a pedestrian 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

Once you arrive at the hospital, doctors, nurses, and other staff members will ask you to state and spell your name and date of birth many times. This is for your safety. People with the same or similar names may be having procedures on the same day.

After changing into a hospital gown, you will meet your nurse. They will place an intravenous (IV) catheter into one of your veins, usually in your hand or arm. The IV will be used to give you anesthesia (medication to make you sleep) during your procedure.

You will talk with your doctor before your procedure. They will explain the procedure and answer your questions.

During your procedure

When it’s time for your procedure, you will be brought into the procedure room and helped onto an exam table. You will be attached to equipment to monitor your heart, breathing, and blood pressure. You will also receive oxygen through a thin tube that rests below your nose.

You will get anesthesia through your IV, which will make you fall asleep. Once
you’re asleep, your doctor will clean the skin around your biopsy area and cover it with a drape. A local anesthetic (medication to make an area numb) will be injected in the area where your doctor will be working.

Your interventional radiologist will place the biopsy needle into your skin and check its position with an MRI, CT, ultrasound, or fluoroscopy. When the needle is in the right place, your radiologist will take the biopsy. The sample will be checked to make sure there is enough tissue. If there is enough, your interventional radiologist will remove the needle. If there isn’t enough, they will take another sample.

When the procedure is finished, your doctor will clean the site and cover it with a bandage.

**After Your Procedure**

**In the hospital**

You will be taken to the recovery room. There, you will have at least 2 chest x-rays to check for air around your lungs. The first is done right away. The second will be done about 2 hours later.

While you’re in the recovery room, tell your nurse if you have:

- Any shortness of breath or trouble breathing
- Pain or discomfort
- Any symptoms that concern you

During this time, you may be given oxygen through your nose. You won’t be allowed to eat right after the procedure.

After 2 hours, you will have your second chest x-ray. If it’s normal, you’ll be able to go home. You must go with your responsible care partner who must spend the night with you.

If you have air around your lungs, your doctor will decide whether you need more chest x-rays to watch the lung. You may need to have a small chest tube placed to allow your lung to re-expand. The chest tube allows the air around your lung to escape until the leak heals itself. You may be admitted to the
hospital while your lung re-expands. This happens to about 8 out of 100 people who have this kind of biopsy.

At home

- You must have your responsible care partner stay with you until the next morning. This is for your safety.
- You may go back to your normal diet when you leave the hospital.
- You can shower or bathe the day after your biopsy. Remove the bandage after your shower.
- You may go back to your normal activities the day after your procedure.
- If you plan to travel by plane and you had no air leak around your lungs, it’s safe for you to fly 2 days after your biopsy. If your chest x-ray shows an air leak, you may need to delay flying until your doctor tells you it’s safe.
- Call the doctor who scheduled your biopsy a few business days after your procedure to get the results.

Call 911 or Go to the Nearest Emergency Room if You:

- Become short of breath or have chest pain. This may mean that your lung is collapsing. Tell the paramedic or doctor that you had a needle biopsy of your lung, pleura, mediastinum, or adrenal glands.

When to Call Your Healthcare Provider

Call your doctor in Interventional Radiology if you have:

- A fever of 100.4° F (38° C) or higher
- Increasing pain at your biopsy site
- Swelling at your biopsy site
Contact Information

If you have any questions or concerns, please call Interventional Radiology at 212-639-2236. You can reach a staff member Monday through Friday from 9:00 am to 5:00 pm. After 5:00 pm, during the weekend, and on holidays, please call 212-639-2000 and ask for the fellow on call for Interventional Radiology.

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