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

Your doctor has recommended that you have a biopsy of your lungs, pleura, mediastinum, or adrenal glands (see Figure 1). These organs lie in your chest. Your pleura is a fluid-filled sac that surrounds and protects 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.

![Figure 1. Your organs that may be biopsied](image-guided-biopsy-of-your-lung-pleura-mediastinum-or-adrenal-glands)`
About Your Procedure

During your biopsy, your interventional radiologist will insert 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 and evaluation.

Air leaking around your lungs

This kind of biopsy can cause your air to leak out of your lungs and collect in the pleura. If the amount of air increases, it prevents your lung from expanding fully. About 25 to 30 out of 100 people who have this biopsy have a small amount of air leakage out of the lung into the chest cavity. Most people will not have symptoms and will get better without treatment. We will monitor you after your procedure.

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.

If you take medication that affects the way your blood clots, ask the doctor performing your procedure what to do. The doctor’s contact information is listed at the end of this resource. Some examples of these medications are:

<table>
<thead>
<tr>
<th>apixaban (Eliquis®)</th>
<th>dalteparin (Fragmin®)</th>
<th>meloxicam (Mobic®)</th>
<th>ticagrelor (Brilinta®)</th>
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<tbody>
<tr>
<td>aspirin</td>
<td>dipyridamole (Persantine®)</td>
<td>nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil®) or naproxen (Aleve®)</td>
<td>tinzaparin (Innohep®)</td>
</tr>
<tr>
<td>celecoxib (Celebrex®)</td>
<td>edoxaban (Savaysa®)</td>
<td>pentoxifylline (Trental®)</td>
<td>warfarin (Coumadin®)</td>
</tr>
<tr>
<td>cilostazol (Pletal®)</td>
<td>enoxaparin (Lovenox®)</td>
<td>prasugrel (Effient®)</td>
<td></td>
</tr>
<tr>
<td>clopidogrel</td>
<td>Fondaparinux</td>
<td>rivaroxaban</td>
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Your doctor may or may not tell you to stop taking the medication, depending on the reason you are taking it. Don’t stop taking any of these medications without talking with your doctor.

Review the information in the resource *Common Medications Containing Aspirin and Other Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)*. It includes important information about medications you’ll need to avoid before your procedure and what medications you can take instead.

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

If you take any medication that makes you urinate more often (a diuretic), you may need to stop taking it the day of your procedure. Some examples are furosemide (Lasix®) or hydrochlorothiazide. Speak with your doctor.

**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 will not be able to travel by air until the air leak closes and your doctor tells you that it is safe to fly. If you think you will be flying within 2 weeks of the biopsy, speak 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.* If you don’t have someone to do this, you will need to be admitted to the hospital overnight. If you’re unable to identify a person to stay with you, tell your Interventional Radiology nurse.

**Tell us if you’re sick**

If you develop any illness (fever, cold, sore throat, or flu) before your procedure, please 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. They will tell you what time you should arrive at the hospital for your procedure. If your procedure is scheduled on a Monday, you will be called on the Thursday before. If you don’t receive a call by noon on 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 your medications the morning of your procedure as instructed by your doctor. 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. If you don’t have glasses, please bring a case for your contacts.

What to bring with you

• A list of the medications you take at home.

• A case for your glasses or contacts.

• Only the money you need for a newspaper, taxi, bus, or parking.

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 Interventional Radiology, which is located in the main hospital at 1275 York Avenue, between between East 67th and East 68th Streets. Take the M elevator to the 2nd floor and check in at the desk.

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.

Your nurse will put in an intravenous (IV) line in your hand or arm. You will be brought into the procedure room. You will receive medication through your IV to make you feel drowsy.
Your skin around the biopsy area will be cleaned and covered with a drape. You will get an injection to numb the site.

Your interventional radiologist will insert the biopsy needle and check its position with 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 is not enough, they will take another sample.

When the procedure is finished, the site will be cleaned and covered with a bandage.

Some people cough up some blood right after the biopsy. This is expected. It generally does not last more than a few minutes.

**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 immediately. 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 will not be allowed to eat right after the procedure.

After 2 hours, you will have your second chest x-ray. If it is normal, you will be able to go home. You must go with your adult caregiver 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 caregiver stay with you until the next morning. This is for your safety if something should happen at night.
- You may resume 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 resume your normal activities the day after the procedure.
- If your plans include air travel and you had no air leak around your lungs, it is 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 safe.
- Call the doctor who scheduled your biopsy a few business days after your procedures 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.

**Call Your Doctor in Interventional Radiology if You Have:**

- Increasing pain at biopsy site
- Swelling at the biopsy site
- A temperature of 100.4° F (38° C) or higher
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.