Diagnosing Chest and Lung Problems: Imaging Tests

You’ve been told that you need imaging tests to diagnose a problem in your chest or lung. These images (scans) help the doctor locate the problem and determine if it affects other structures. You will likely need more than one imaging test. If a mass has been found, imaging tests can also help determine if it has spread. Common imaging tests are described below.

CT Scan

Computed tomography (CT or CAT) allows the doctor to view a more detailed image of the chest and lungs than a regular chest x-ray. During a CT scan, many images are taken of the lungs and chest. A computer combines the images to create one detailed image. In some cases, special dye (contrast) is given through an intravenous (IV) line. The contrast highlights any suspicious area on the scan.

PET Scan

Positron emission tomography (PET) is used to diagnose chest and lung problems. For a PET scan, a safe radioactive liquid (tracer) is injected into the bloodstream. Once the tracer is in your system (which takes about 45 minutes), a scan is taken of the body. A PET scan can be helpful for detecting cancer. It can also help determine if a cancer has spread. This is called staging. In some cases, further testing is needed before cancer is diagnosed or ruled out.

MRI

Like the CT scan, magnetic resonance imaging (MRI) takes many images of the chest and lungs. Contrast may be given through an intravenous (IV) line. A scan is taken. MRI helps the doctor determine if a mass is affecting other structures in the chest, such as blood vessels.

Preparing for the Test

Before your imaging test, do the following:

- Follow your doctor’s instructions about eating and drinking
- Tell your doctor about the medications you take. You may need to stop taking certain medications before the test.
- Discuss any allergies and health problems with your doctor. Be sure to tell him or her if you are allergic to iodine or contrast or if you have kidney problems.
- Tell your doctor and the healthcare professional performing the scan if you wear a medicated adhesive patch.
- Mention if you have any metal in your body. This includes loose pieces of metal or metal devices such as an aneurysm clip, a pacemaker, a prosthesis, or an intraocular lens.
- Tell your doctor if you are pregnant.

During the Test

For the test, you lie on your back inside a tubelike machine (scanner). You hear loud clicking sounds as images are taken. To ensure clear images, you must lie still. Straps may be used to help with this. Imaging tests (especially MRI) are done in a confined space. Talk to your doctor before the day of your test if you are afraid of confined spaces. You may be given medication (sedation) to help you relax during the test.
Risks and Complications

- Swelling, infection, or other problems at the IV site
- Contrast or tracer-related problems, such as allergic reaction or kidney damage
- Damage to metal devices or prostheses from large magnetic MRI scanner