curium™
LIFE FORWARD

Nuclear Medicine Imaging of Liver, Spleen and Gallbladder

An Introductory Guide For Patients And Their Families

You may be wondering why your doctor ordered a **nuclear medicine scan of your liver and spleen and/or gallbladder.** You likely have questions such as: How does this test work? What can I expect? Do I need to do anything to prepare? Is it safe? When will I know the results?

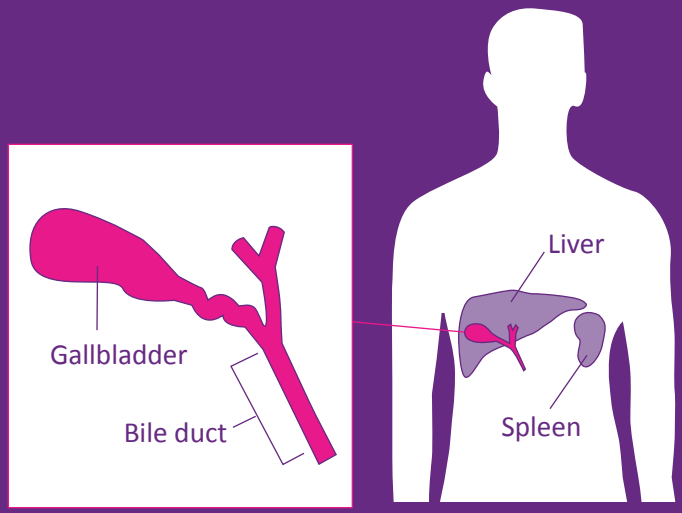
This brochure will help answer these and other questions. As always, talk with your doctor if you have additional questions or concerns.

Why has my doctor ordered this scan?

Liver, spleen and hepatobiliary (or gallbladder) scans let your doctor see the size, shape and position of your liver, spleen, gallbladder and bile duct.

This type of test is often used to gauge how well the liver is working and the production and flow of bile from your liver to your small intestine. It helps to diagnose:

- tumors, cysts, abscesses and/or enlarged organs
- swelling or blockages in the gallbladder or bile duct
- conditions like hepatitis, cirrhosis (scarring of the liver) or cancer
- upper abdominal pain



Bile is fluid produced by your liver that helps your digestive system break down fats in the foods you eat.

The liver, spleen and gallbladder are often examined together because they work together and are located in the same area. In some cases, your doctor may order a scan of the liver alone, the liver and spleen or the gallbladder and bile duct. In some cases, these tests are used to keep an eye on diseases and response to therapy.

How do these scans work?

You will be given a small amount of radioactive material (called a tracer). This tracer is usually injected into a vein in your arm or hand. It travels through your body and, once absorbed, sends signals (gamma waves) to special cameras that:

- **detect** the tracer
- **take pictures** of your liver, spleen and/or gallbladder and small intestine
- **record and store** information on a computer

When the tracer travels through your body, it collects in the most active cells. Those areas then give off higher levels of gamma rays, which show up as “hot” spots or brighter areas on the scan. Areas with less active cells show up as “cold” spots or darker areas. In normal tissue, the tracer is evenly distributed and the area appears uniform on the scan.

Millions of Americans have nuclear medicine imaging exams each year[1]

What is nuclear medicine?

Nuclear medicine is a type of medical imaging that uses small amounts of radioactive material (called tracers) to help find and/or treat a variety of diseases, including heart disease, kidney disease, many types of cancers and many other problems.

Unlike other imaging tests, nuclear medicine scans give doctors important information about how various parts of the body are working. Millions of Americans have nuclear medicine imaging exams each year.

1 Goethals P, Zimmermann R. Nuclear Medicine Market, Nuclear Medicine Procedures. In: Nuclear Medicine World Market Report and Directory. MEDrays Intell. June 2016: 45.

Are there any safety concerns with this test?

Don't let the words "nuclear" or "radioactivity" scare you. These tests are designed to expose you to the least amount of radiation possible. The drug or drugs that will be used during the exam are prepared with exceptional care and have been approved by the U.S. Food and Drug Administration. However, there is always a chance that you may have a reaction to the drugs.

Your doctor will explain the risks before the test. It is important to tell your doctor or the person performing the test if you notice any side effects.

The exam is minimally invasive and generally painless except for the injection.

If you are pregnant, trying to get pregnant or breast feeding, tell your doctor before having the test.

What will the procedure be like?

The test is done in a hospital or outpatient clinic that offers this type of imaging. Usually, a technologist with special training in nuclear medicine will conduct the test.

Do I need to prepare for the test?

It depends on the test used.

For a gallbladder scan, your doctor may ask that you:

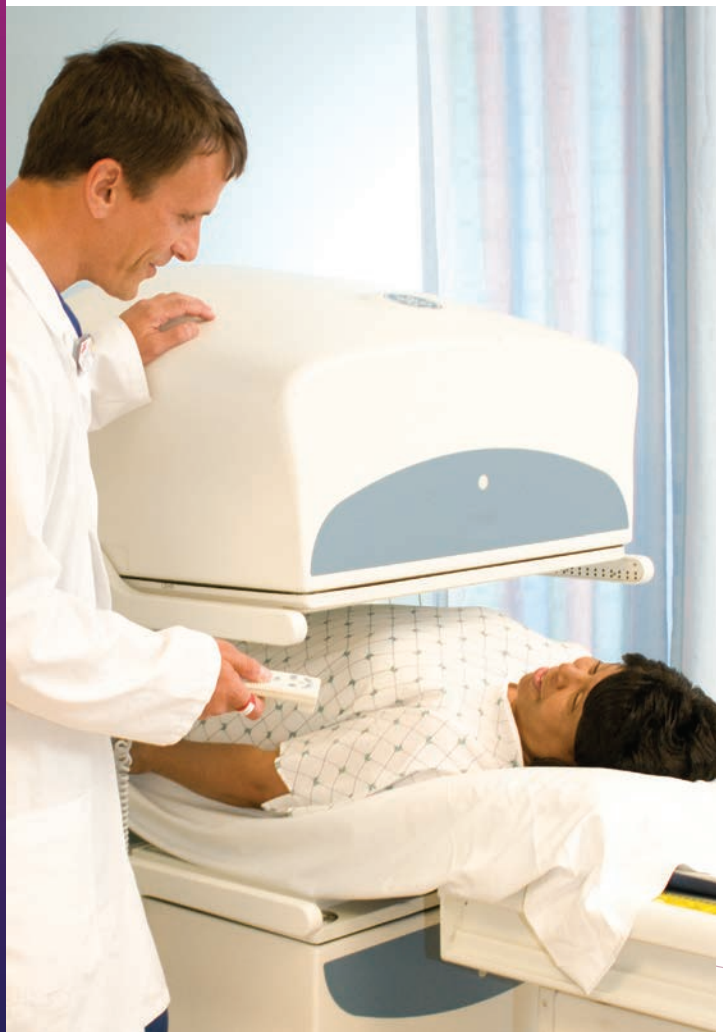
- Do not eat or drink anything for at least two hours before your scan; this is because any food or fluid can alter the results.
- Do not have any barium studies (those using contrast) for 24 to 48 hours before the scan.
- Delay taking some medications. Certain medications may interfere with your scan, so your doctor may ask that you delay taking your medications on the day of your scan. Tell your doctor about any medications you're taking.

For a liver and spleen scan, there is generally no special preparation needed. Check with your doctor to see if you should stop taking any medications.

What can I expect?

Here is a basic description of what you can expect. Keep in mind, this process may vary based on:

- whether a liver and spleen and/or gallbladder scan is ordered
- the patient
- where the test is performed



Step 1. You may be asked to undress and wear a hospital gown. Leave your jewelry at home and be sure to remove any metal objects (for example, belts, most dentures or change in your pockets).

Step 2. The technologist will insert a tube called an intravenous (IV) line in your arm or hand to administer the tracer. You may feel a slight prick. It will take up to 30 minutes for the tracer to enter the bloodstream and be absorbed by your liver and spleen. For gallbladder tests, serial images will be taken within an hour of the injection.

Step 3. When it's time for the scan, you will be asked to lie down on an imaging table while a gamma camera is positioned above your abdomen. The technologist may move the camera several times and/or ask you to lie in different positions to take images from different angles.

During the test, you will need to remain as still as possible to prevent the images from blurring. Children and some adults may be given a sedative to help stay calm.

If the gallbladder or bile duct is not visible within an hour of the injection, a second one might be needed. Additional pictures will be taken.

Step 4. At the end of the exam, the technologist will carefully remove the IV line.

How long does the test take?

It depends on the test. A scan of the liver and spleen usually takes about one hour. A gallbladder scan usually takes one to two hours, although sometimes additional images are taken for up to four hours.

Is there anything I need to do after the test?

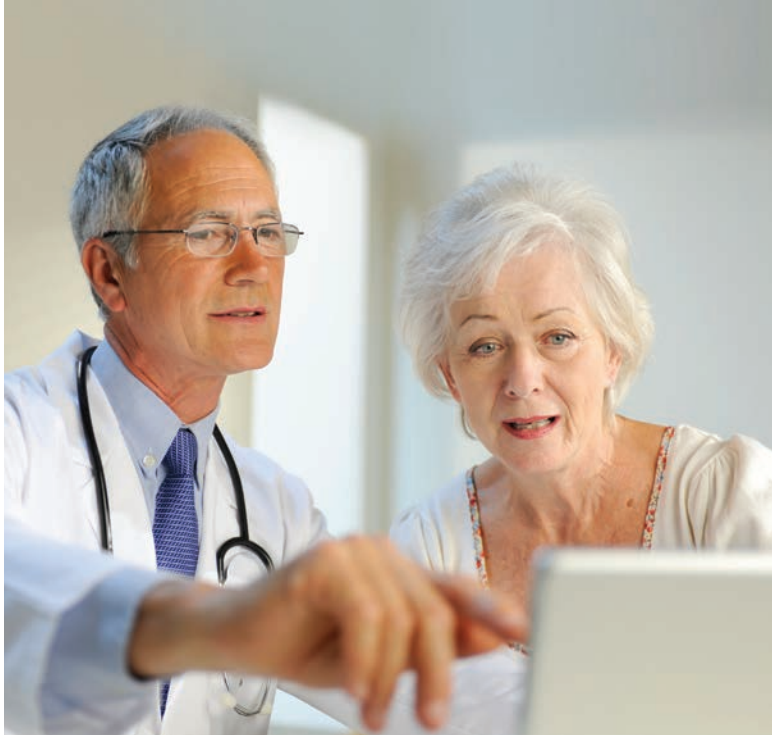
You may be asked to wait for a short time while the doctor (a radiologist who is trained to read the images) reviews the scans to see whether additional pictures are needed.

Make sure that you:

- Drink plenty of fluids to help clear the remaining tracer from your body. It is usually flushed from the body within 24 hours.
- Keep an eye on the injection site. Tell your doctor if you notice any redness or swelling.
- Ask your doctor for any special follow up instructions. You should be able to resume most activities right away.

How do I get the results?

When the test is over, a radiologist trained in nuclear medicine will review the images and send a written report to your doctor. Your doctor will then discuss the results with you. Be sure to ask your doctor what the test results mean and what you should do next.



Talking to your health team

Be sure to talk with your health team if you have any concerns. Here are some questions that you might want to ask:

- Why is this test being ordered?
- How long does the test take?
- What can I expect during the exam?
- Is it safe?
- Should I stop taking any of my medications before the exam?
- Will the test be covered by my health insurance?
- When will I get the results?
- When will I be able to resume normal activities?

CURIUM™
LIFE FORWARD

Your examination has been scheduled for:

Location:_____

Doctor:_____

Phone:_____

Date: _____

Time:_____

An educational service from Curium.

www.curiumpharma.com
111 Westport Plaza | Suite 800 | St. Louis, MO 63146
888-744-1414 | NuclearMedicine@curiumpharma.com

NM0008 0120