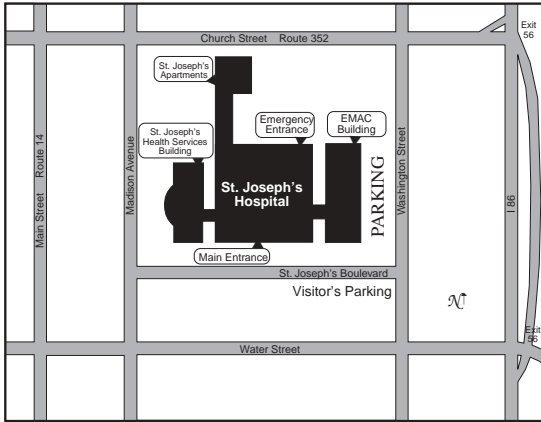


Directions and Map

St. Joseph's is conveniently located in Elmira, NY just off the Southern Tier Expressway (NY Route 17/I-86).

From Route 17/I-86: Take the Elmira exit (Exit 56). Continue straight on Church Street for three blocks to Washington Street. Turn left onto Washington Street for one block. Then turn right on St. Joseph's Boulevard and proceed to the Visitors Parking Lot.



Nuclear Medicine

Department
of
Medical Imaging



555 St. Joseph's Boulevard • Elmira, NY 14901
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(607) 737-7813



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What is Nuclear Medicine?

Nuclear Medicine involves the use of radioactive materials to help diagnose and treat a wide variety of diseases and disorders. These radioactive materials, called radiopharmaceuticals, are usually injected into the blood stream and then absorbed by various organs of the body. Some radiopharmaceuticals are swallowed or inhaled. Different compounds are used to study different parts of the body.

For most nuclear medicine procedures you are required to lie on an imaging table while being scanned. The imaging is done using a gamma camera. The term gamma refers to the type of radiation the radiopharmaceuticals emit. As the scan is being done, the camera detects the radiation coming from the compounds in your body and produces an image. These images are then stored and processed on a computer. There are a wide variety of software programs specifically designed for nuclear medicine to analyze these images.

Some Common Nuclear Medicine Problems

Stress thallium

This procedure is used to diagnose the presence of coronary artery disease. Usually you exercise on a tread mill while a radioactive compound called thallium is injected into your bloodstream. The thallium is then absorbed by the walls of your heart. Imaging is begun immediately after exercising and then again 3-4 hours later.

Bone Scan

Bone scans are used to detect areas of bone growth, fractures, tumors, bone infections, arthritis, etc. A radioactive compound is injected into your bloodstream and is absorbed by the bones. Imaging is done two hours later. Usually the entire body is scanned, although it may sometimes require just the area in question.

Lung Scan

Used primarily to detect pulmonary embolism (blood clots in the lung). This study is done in two phases. First, you inhale a radioactive gas that lines the tissues of the lungs. Then a series of images

are acquired. This phase shows how well your lungs are ventilating. Next, a radioactive compound is injected into your bloodstream and more images are taken. This phase checks the blood supply to your lungs. Imaging time is approximately one hour.

Liver Scan

Used to diagnose liver disorders such as cirrhosis or tumors. A radioactive compound is injected into your bloodstream and absorbed by the liver. Various images are taken 15-20 minutes later. Imaging time is approximately 20 minutes.

Thyroid Imaging and Function

Used to diagnose disorders of the thyroid gland. For the function study a capsule containing radioactive iodine is swallowed and absorbed by the thyroid gland. You return 24 hours later to see how much of the iodine was absorbed. This measurement determines how active the thyroid gland is. Thyroid imaging is used to check the size and shape of the gland and to localize nodules or tumors. Imaging time is approximately 20 minutes.

How Safe Is It?

Facilities, equipment, and materials all must meet strict safety standards and every precaution is taken to reduce radiation exposure. Only small quantities are used for diagnosis. The compounds lose most of their radioactivity in hours or days. They are usually quickly eliminated from the body. Some procedures are restricted during pregnancy and breast feeding because a safe dose for the mother may be too high for the baby.

The nuclear medicine procedures are performed by a technologist who is trained in the safe handling and use of radiopharmaceuticals and imaging equipment.

The results of the procedure are read by a radiologist who is a physician specializing in medical diagnosis by x-ray and trained in nuclear medicine. These results are then given to your doctor.

The information in this pamphlet is meant to be a general guideline to nuclear medicine. If you have any specific questions or concerns, feel free to ask your doctor or call the Department of Medical Imaging at 737-7813.