

Nuclear Medicine Imaging

ADVANCED DIAGNOSTIC IMAGING
MEETS ADVANCED PATIENT CARE

A **radiopharmaceutical** and a **gamma camera** assess the function of organs, such as the heart, thyroid, gallbladder and bones, to detect disease.

Mayfair Diagnostics continues to offer both exercise stress testing and myocardial perfusion imaging (MPI) at our Mayfair Place location, as well as leading-edge nuclear medicine imaging services at five locations in Calgary.

A LOOK AT

NUCLEAR MEDICINE IMAGING

Like X-rays and other radiological tests, nuclear medicine imaging can image organs, but also goes one step further to examine their function. This helps identify the cause or status of a disease before it is apparent using other diagnostic tests.

Nuclear medicine can help to:

- Assess the function of organs, such as the heart, thyroid, gallbladder and bones in order to detect disease.
- Determine if cancer has spread to other areas.
- Ascertain the effectiveness of cancer treatment.

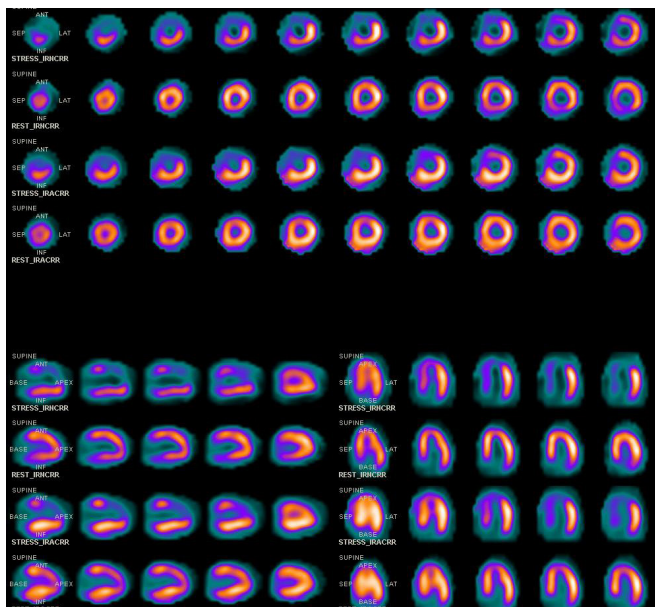
Nuclear Medicine Exams

THYROID SCAN

This scan is used primarily to evaluate the way the thyroid gland functions. It looks at its ability to take up the radiopharmaceutical. We use a thyroid scan predominantly to determine causes of hyperthyroidism and, occasionally, for the workup of a thyroid nodule or goiter.

MYOCARDIAL PERFUSION IMAGING (MPI)

This is a non-invasive way to detect and assess for coronary artery disease, to determine its severity and how much of the heart is affected.



ABNORMAL MPI

HIDA BILIARY SCAN

This scan evaluates the biliary system's function. It is used to assess the function of the gallbladder or to evaluate issues post-cholecystectomy. We also use it to examine:

- Functional biliary pain syndromes.
- Chronic cholecystitis.
- Gallbladder ejection fraction (GBEF).
- Post-cholecystectomy biliary dysfunction - we use a drug called CCK to study patients who've had their gallbladder removed (if the drug is available at the time of imaging).

BONE SCAN WITH SPECT/CT

This scan combines a "SPECT" scan with a "CT" scan to help localize an area of abnormal activity that may be present on the planar (two dimensional) bone scan image. For the "SPECT" (single photon emission computed tomography) component, the nuclear medicine gamma camera rotates 360 degrees around the body and creates three dimensional pictures based on the data it obtains.

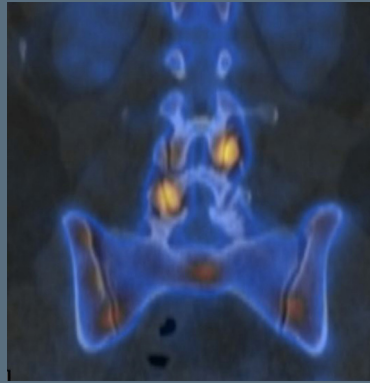
For the "CT" (computed tomography) portion, the CT detector uses a lower dose of radiation than regular CT scans to help the SPECT scan create a better image. These CT images are fused with the SPECT images to generate what is called a "SPECT/CT image." These images are taken near the end of the second appointment of the bone scan.

SPECT/CT imaging is often used to examine:

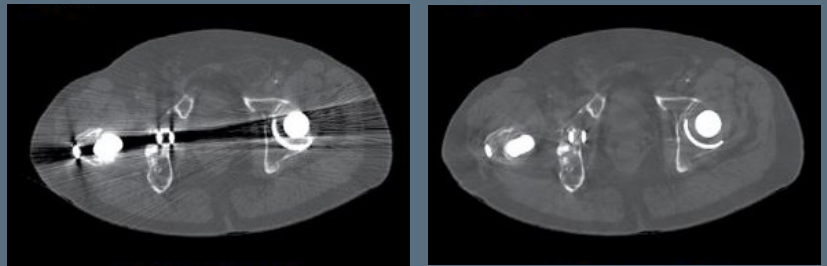
- Chronic back or neck pain, to improve localization of any potential abnormal activity as well as provide guidance for possible pain management injections, for example facetogenic versus discogenic activity.
- Ankle and foot pain, such as abnormal activity in people who have osteochondral injuries, chronic pain, or have had previous surgeries.
- Suspected scaphoid (wrist) fractures.

Our Sunpark location also has added functionality:

- Up to 25% faster scan times.
- Software to optimize image quality, including metal artifact reduction to improve imaging of internal metal hardware, such as artificial joints.



SPECT/CT IMAGE

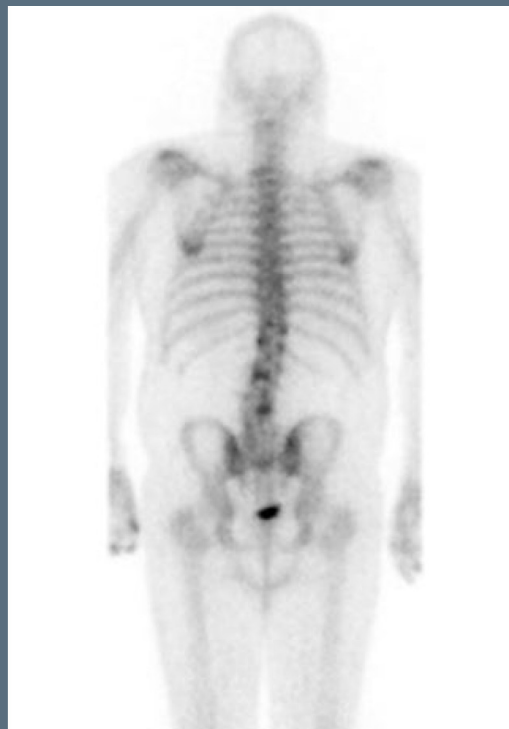


SPECT/CT IMAGE BEFORE AND AFTER METAL ARTIFACT REDUCTION FOR DOUBLE HIP REPLACEMENT

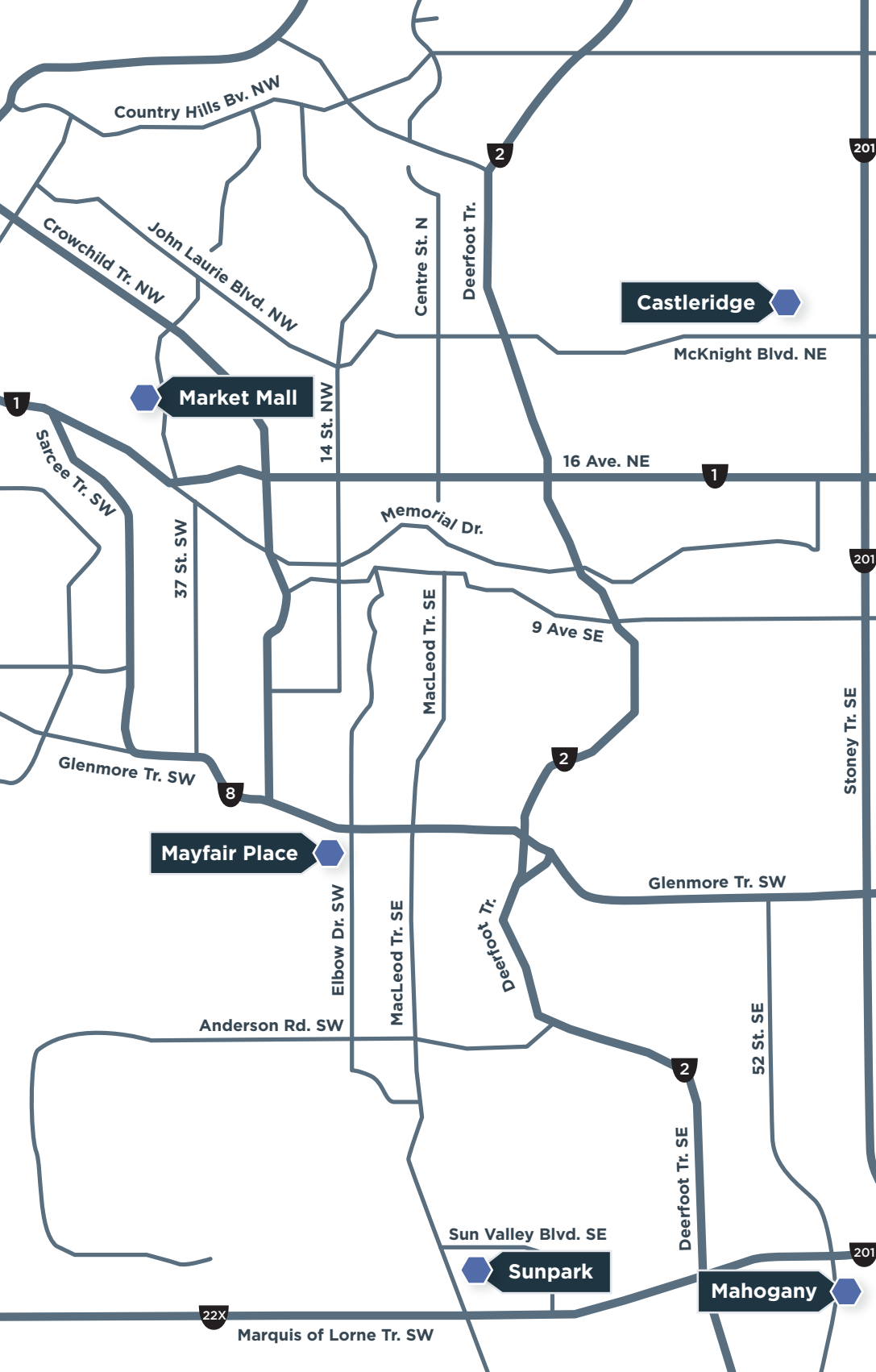
BONE SCAN

This scan helps detect, or further examine, bone and joint problems, such as:

- Oncology:
 - Workup for primary bone tumours (e.g., osteochondromas, giant cell tumours, etc.).
 - Assessment for skeletal metastases.
- Paget's disease.
- Hypertrophic osteoarthropathy.
- Fractures and stress fractures.
- Bone graft viability.
- Unexplained bone and joint pain.
- Infection (osteomyelitis).
- Areas of abnormal joint activity in inflammatory conditions such as rheumatoid arthritis.



PLANAR BONE SCAN IMAGE



Mayfair Diagnostics Clinic Locations

 NUCLEAR MEDICINE
LOCATIONS

Market Mall Professional Building

333, 4935 - 40 Ave. NW

Castleridge Plaza

20, 55 Castleridge Blvd. NE

Mahogany Village

230, 3 Mahogany Row SE

Mayfair Place*

132, 6707 Elbow Dr. SW

Sunpark Professional Centre

125, 40 Sunpark Plz. SE



**Exercise stress testing and myocardial perfusion imaging are only offered at our Mayfair Place location.*



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