

MYOCARDIAL PERFUSION STUDY

Background:

Myocardial perfusion imaging uses an intravenously administered radiopharmaceutical to depict the distribution of blood flow in the myocardium. Perfusion imaging identifies areas of relatively reduced myocardial blood flow associated with ischemia or infarct. The relative regional distribution of perfusion can be assessed at rest, during cardiovascular stress, or both. Perfusion images are acquired with SPECT/CT techniques for attenuation correction purposes, using radiopharmaceuticals that are taken up in myocardium for a variable period of time.

Patients with significant coronary artery narrowing or abnormal coronary flow reserve will have a zone of diminished radiopharmaceutical concentration in the area of relatively decreased perfusion.

Indications include but are not limited:

- Diagnosis and management of patients with known or suspected coronary heart disease.
- Provides important information on rest and post-stress myocardial perfusion, viability, and global and regional left ventricular systolic function, which generally signify the presence and extent of underlying coronary artery disease.
- Powerful tool for risk stratification of patients with known or suspected coronary artery disease.

Contraindication:

For the pregnant or potentially pregnant patient, and breastfeeding patients, please advise reception staff. Consultation with Radiologist or Technologist may be required.

Procedure Prep:

- Certain medication are required to be ceased for the study. (Beta Blockers and calcium channel blockers).
- Cease caffeinated food and beverages for 24 hours prior to appointment.
- Light meal (toast and juice) only, then fast for 4 hours prior to appointment.
- Detailed cardiac history is will taken by the cardiac nurse prior to appointment.
- Patient to wear comfortable active wear with appropriate footwear for exercising on the treadmill.
- Preferable to wear a shirt/blouse that opens at the front.
- Preferable for females to wear a sports bra without a under wire.
- Please advise Cardiac nurse of any food allergies.

Procedure information:

The patient is informed about the procedure and consent is gained.

The patient will be in the department for up to 5 hours.

There are 6 parts to the study.

Initial cannulation and injection for rest study.

Uptake time for Radiopharmaceutical to be taken up by the myocardium.

Imaging myocardium (Rest scan).

Exercise Stress Test: Walking on treadmill, reaching 80% maximum heart rate. Second injection of radiopharmaceutical will be administered.

Uptake time for Radiopharmaceutical to be taken up by the myocardium (light meal supplied).

Imaging myocardium (Stress Scan)

Image interpretation/report:

Myocardial Perfusion gated SPECT imaging is able to observe myocardial contraction, in segments with apparent fixed perfusion defects, permitting the Nuclear Medicine Physician to discern attenuation artifacts from true perfusion abnormalities with the assistance of CT Attenuation Correction (CTAC). The ability of gated SPECT to provide measurement of Left Ventricular Ejection Fraction (LVEF), segmental wall motion, and absolute LV volumes also adds to the prognostic information that can be derived from a SPECT study.

