

<b>Subject: MCR PET Scan, Heart (Cardiac) (78459, 78492)</b>		<b>Original Effective Date:</b> <b>12/13/17</b>
<b>Policy Number: MCR: 653</b>	<b>Revision Date(s): 11/27/18</b>	
<b>Review Date: 12/13/2017, 12/13/18</b>		

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**DESCRIPTION OF PROCEDURE/SERVICE/PHARMACEUTICAL**

**Myocardial perfusion scan** (also referred to as **MPI**) is a nuclear medicine procedure that illustrates the function of the heart muscle. Single-photon emission computed tomography (SPECT) imaging is used and can often be completed in less than 10 minutes. With SPECT, interior and posterior abnormalities and small areas of infarction can be identified, as well as the occluded blood vessels and the mass of infarcted and viable myocardium. The usual isotopes for such studies are either Thallium-201 or Technetium-99m.

**Stress echocardiography** is an ultrasound procedure that illustrates the function of heart muscle. It shows your heart function at rest and then if any changes occur during exercise. During a stress test it shows changes before EKG changes or chest pain develops.

**RECOMMENDATIONS**

Below are recommendations for performing **Pet (Cardiac) Stress Imaging**. Echo Cardiography Stress test (**Stress Echo**), Nuclear Myocardial Perfusion Imaging (**Nuclear Stress**) and Pet (Cardiac) Perfusion Imaging are frequently all capable of evaluating the heart function. Only for situations where **Cardiac Stress Imaging** is recommended AND **Stress Echo** or **Nuclear Stress** imaging are not appropriate do we then consider Pet(Cardiac).

**PET (CARDIAC) STRESS RECOMMENDED OVER NUCLEAR STRESS**

- PET (CARDIAC) is appropriate instead of Echo Stress or Nuclear Stress imaging in the following clinical situations:
- Myocardial viability prior to possible percutaneous or surgical revascularization if:
  - Previous SPECT/MPI imaging for viability is inadequate; AND
  - Patient has severe left ventricular dysfunction (LVEF = 35%).
- SPECT/MPI imaging completed with
  - Indeterminate findings or ,
  - Technical difficulties with interpretation, or
  - Discordant results with previous clinical data.
- Expected ATTENUATION ARTIFACT with Nuclear Stress Test SPECT
  - Morbid obesity with BMI over 40,
  - Large Breasts,
  - Breast Implants,
  - Previous Mastectomy,
  - Chest wall DEFORMITY
  - Pleural/pericardial EFFUSION
- SARCOIDOSIS with
  - Reduced heart function OR
  - Heart Block on EKG
  - Equivocal MRI heart for Sarcoid
  - Contraindication to MRI
- CARDIOMYOPATHY (including hypertrophic, Duchenne Muscular Dystrophy, etc.)

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NOTE: Below are the policies on Stress Imaging. Patient must fit this policy before a PET (CARDIAC) can be considered:

- STRESS IMAGING (Stress Echo test or Nuclear Stress test )

**I. SUSPECTED CAD:**

- SYMPTOMATIC: Except atypical chest pain in low risk patients (one risk factor or less)
- REPEAT STRESS TESTING FOR SIMILAR SYMPTOMS or high risk
  - signs or symptoms of NEW Disease
  - 5 YEARS since last test.
- ASYMPTOMATIC HIGH GLOBAL RISK -20% coronary event rate over next 10 years
- Strong history of peripheral arterial disease or history of stroke or TIA

- Clearly pathologic Q waves on the EKG
- Marked ST-segment and/or T wave abnormalities of myocardial ischemia without symptoms
- Clear regional wall motion abnormalities of the left ventricle
- Reduced ejection fraction below 50% with contraindication to CATH
- Based upon Framingham-ATP IV, ACC/AHA Risk Calculator, or very similar risk calculator
- Coronary Calcium Scores over 400
- EKG changes that make (non-imaging) stress EKG uninterpretable
  - ST depression on the rest EKG: May be due to Digitalis Effect, LVH, or Ischemia
  - T wave inversion. Minor ST and T abnormalities are not indications for MPI, but deep T inversion is an indication for MPI

## II. Known CAD:

- New, Recurrent, or Worsening symptoms
- High Risk - ASYMPTOMATIC OR WITH STABLE symptoms 2 years since last test
  - Stenosis known 70+% in major vessel
  - Left main coronary artery (LM) disease after a stent is placed
  - Ejection Fraction less than 50% (note: if less than 40% Nuclear Stress is best test)
  - Severe Multi-vessel Disease
  - High Risk occupations or hobbies e.g. bus driver, scuba diver
- Ischemia Persists after Revascularization
- Myocardial Viability testing -Resting myocardial perfusion imaging prior to coronary revascularization
- After Myocardial Infarction or Acute Coronary Syndrome and no CATH has been done
- Indeterminate or Positive Exercise Stress test or CCTA and a specific reason that noninvasive approach is preferred to CATH

## III. New Cardiac Concerns

- Non-Coronary Cardiac Diagnoses. (Any of these)
  - New Heart Failure
  - Episode of Ventricular Tachycardia (> 100 bpm), or Ventricular Fibrillation
  - Frequent PVCs (over 30 per hour),
  - New antiarrhythmic drug (AAD) therapy

- New onset Atrial Fibrillation within two years.
- Syncope in intermediate or high risk patient (not lightheadedness or vasovagal syncope)
- New Left Bundle Branch Block
- Kawasaki Disease and CCTA not available

**IV. Pre-Op non-cardiac surgery**

- Thoracoabdominal Aortic - No Stress Test or CATH in the past year  
**AND** one of the following:
  - Known coronary artery disease
  - Cerebrovascular disease
  - Insulin requiring diabetes
  - History of CHF
  - Ejection fraction less than 40%
  - Creatinine greater than 2
  - Organ Transplantation

**V. Cardiac Transplantation- F/U every 1-2 years**

- First 5 Years- only if CATH not safe, (e.g. GFR less than 40)
- After 5 Years- yearly Nuclear Stress

**VI. Bariatric surgery is not an indication for MPI or Stress Echo**

**ADDITIONAL INFORMATION**

The above medical necessity recommendations are used to determine the best diagnostic study based on a patient’s specific clinical circumstances. The recommendations were developed using evidence based studies and current accepted clinical practices. Medical necessity will be determined using a combination of these recommendations as well as the patient’s individual clinical or social circumstances.

- Tests that will not change treatment recommendations should not be approved.
- Tests completed recently need a specific reason for repeat

**CODING INFORMATION:** THE CODES LISTED IN THIS POLICY ARE FOR REFERENCE PURPOSES ONLY. LISTING OF A SERVICE OR DEVICE CODE IN THIS POLICY DOES NOT IMPLY THAT THE SERVICE DESCRIBED BY THIS CODE IS COVERED OR NON-COVERED. COVERAGE IS DETERMINED BY THE BENEFIT DOCUMENT. THIS LIST OF CODES MAY NOT BE ALL INCLUSIVE.

CPT	Description
78492	PET (Positron Emission Tomography) Heart

78492	PET (Positron Emission Tomography) Cardiac
78492	Myocardial Imaging, Positron Emission Tomography (PET), Perfusion; multiple studies at rest and/or stress

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