



Cardiac Test Request Tip Sheet

Myocardial Perfusion Imaging (MPI) vs Stress Echocardiography (SE)

- Both MPI and SE are performed for evaluation of CAD/IHD.
- In general, MPI has a more powerful role in assessment of myocardial viability in patients who have had a prior MI particularly in whom an intervention is contemplated.
- Sensitivity for MPI is slightly greater than for SE (88% vs 76%) but specificity is greater for SE (88% vs 77%).
- When deciding between MPI and SE the patient's **ability to exercise on a treadmill** should be considered along with **baseline EKG, and coronary risk factors**.
- **SE avoids risk of radiation - 15-25 mSv for MPI (for comparison 0.1 mSv for chest x-ray).**

Radiation Exposure

MPI: 15 - 25 mSv

SE: 0 mSv

Radiation exposure should be limited when possible.

MPI is preferred over Stress Echocardiography in patients with the following:

- 1) Presence of Pacemaker or ICD
- 2) LBBB on EKG
- 3) WPW Syndrome
- 4) Poorly controlled AF
- 5) Frequent PVC's
- 6) Prior cardiac surgery - CABG, valve surgery
- 7) Documented regional wall motion abnormalities (dyskinesis, akinesis, hypokinesis, hyperkinesis) on prior echocardiography, cath, or MPI study
- 8) Poor acoustic window as documented on baseline or prior echocardiography
- 9) Obese patients - BMI 40 or greater
- 10) Unable to ambulate on a treadmill - amputees, requires cane or walker, wheelchair bound, arthritis with documented limitation, recent hip or knee replacement
- 11) Poor functional capacity - less than 4 METS
- 12) CHF with LVEF < 40%
- 13) COPD (documented on prior PFT's), severe SOB with minimal exertion, home O₂
- 14) In patients on a IC antiarrhythmic agent such as Propafenone or Flecainide in whom coronary disease is suspected.
- 15) Poorly controlled Hypertension (Systole > 180, Diastole > 120)
- 16) (Active) Foot wound/ulcer
- 17) Unable to perform ADL's with documented extent of limitations

SE is an alternative to MPI for most other patients, including:

- 1) Patients who can exercise
- 2) Patients who are at low risk for cardiac events or do not exhibit high risk markers