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 - 0.1 mSv for chest x-ray. 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 accoustic 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%
MPI vs. SE
Procedure Request Tip Sheet

13) COPD (documented on prior PFT’s), severe SOB with minimal exertion, home O2
14) In patients on an IC antiarrhythmic agent such as Propafenone or Flecanide 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