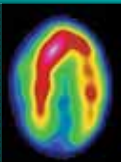
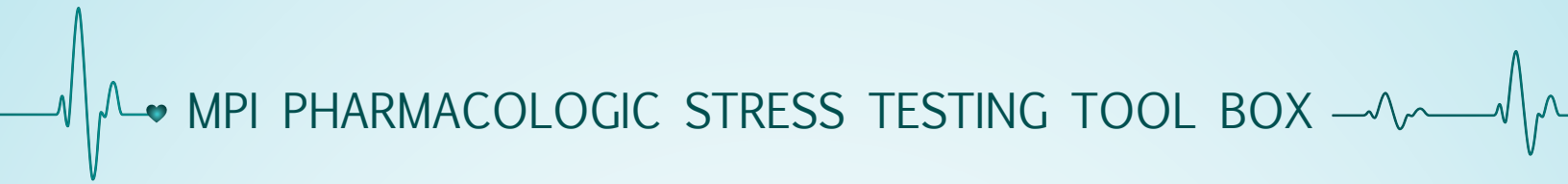




MYOCARDIAL PERFUSION
IMAGING (MPI)

♥ *Pharmacologic Stress*
TESTING TOOL BOX





MPI PHARMACOLOGIC STRESS TESTING TOOL BOX

The purpose of the *MPI Pharmacologic Stress Testing Tool Box* is to assist with distinguishing various patient profiles requiring pharmaceutical stress agents and to provide a resource for clinicians who are utilizing single-photon emission computed tomography myocardial perfusion imaging (SPECT MPI or MPI). The Tool Box does not specifically endorse any of the recommendations.

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ASNC Guidelines and Standards

The American Society of Nuclear Cardiology (ASNC) served as the author or co-author on each of the documents listed below. The date shown with each guideline or statement reflects the most recent date of approval or endorsement. For clinical documents related to nuclear cardiology training (such as COCATS), [click here](#).

Clinical Documents are available in PDF format and require the free [Adobe Acrobat Reader](#) plug-in for your Web browser.

Imaging Guidelines for Nuclear Cardiology Procedures

- [Introduction](#) - 2009
- [First-Pass Radionuclide Angiography \(FPRNA\)](#) - 2009
- [Equilibrium Radionuclide Angiocardiography \(ERNA\)](#) - 2009
- [Stress Protocols and Tracers](#) - 2009
- [Myocardial Perfusion and Planar Imaging](#) - 2009
- **Updated!** [Single Photon Emission Computed Tomography](#) - 2010
- [PET Myocardial Perfusion and Glucose Metabolism Imaging](#) - 2009
- [Standardized Reporting of Radionuclide Myocardial Perfusion and Function](#) - 2009

Appropriate Use Criteria

- [Appropriate Use Criteria for Cardiac Radionuclide Imaging](#) - 2009
Appendix: [Appropriate Use Criteria for Cardiac Radionuclide Imaging Data Supplement](#) - 2009
- [Appropriate Use Criteria for Coronary Revascularization](#) - 2009
- [Appropriate Use Criteria for Stress Echocardiography](#) - 2008
- [Appropriate Use Criteria for Transthoracic and Transesophageal Echocardiography](#) - 2007
- [Appropriate Use Criteria for Cardiac Computed Tomography and Cardiac Magnetic Resonance Imaging](#) - 2006

Clinical Updates

- [Stress-Only Myocardial Perfusion Imaging](#) - 2009
- [Combined Pharmacologic and Low-Level Exercise Stress Protocols for Radionuclide Myocardial Perfusion Imaging](#) - 2009
- [Adenosine Stress Protocols for Myocardial Perfusion Imaging](#) - 2007

Information Statements

- **New!** [Recommendations for Reducing Radiation Exposure in Myocardial Perfusion Imaging](#) - 2010
- [Variability in Radiation Dose Estimates from Nuclear and Computed Tomography Diagnostic Imaging](#) - 2009
- [DICOM and Interconnectivity Update](#) - 2009
- [Clinical Imaging for Prevention: Directed Strategies for Improved Detection of Presymptomatic Patients with Undetected Atherosclerosis](#) - 2008
- [ASNC Review of the ACCF/ASNC Appropriateness Criteria for SPECT MPI](#) - 2007
- [Computed Tomographic Imaging within Nuclear Cardiology](#) - 2005
- [Cost-Effectiveness of Myocardial Perfusion Imaging](#) - 2005

Other ASNC Documents

- [Conference Proceedings from the Ninth Nuclear Cardiology Invitational Conference](#) - 2008
- [Verification of Experience in Cardiovascular Computed Tomography](#) - 2007
- [A Report of the ASNC Task Force on Women and Heart Disease](#) - 2003
- [Suspected Acute Ischemic Syndromes in the Emergency Department or Chest Pain Center](#) - 2002

Other Clinical Guidelines

- [Outcomes Research in Cardiovascular Imaging: Report of a Workshop Sponsored by the National Heart, Lung and Blood Institute](#) - 2009
- [Introduction of New Technology for Clinical Use](#) - ASNC Imaging Guideline, 2009
- [Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women: 2007 Update](#) - AHA Guideline, 2007
- [Perioperative Cardiovascular Evaluation and Care for Noncardiac Surgery](#) - ACC/AHA Guideline, 2007
[Click here](#) for the Executive Summary

Joint Society Statements

- [ACCF/AHA Focused Update on Perioperative Beta Blockade](#) - 2009
- [2009 ACCF/AHA Focused Update on Perioperative Beta Blockade Incorporated Into the ACC/AHA 2007 Guidelines on Perioperative Cardiovascular Evaluation and Care for Noncardiac Surgery](#) - 2009
- [2008 Key Data Elements and Definitions for Cardiac Imaging](#) - 2008
- [2008 Health Policy Statement on Structured Reporting in Cardiovascular Imaging](#) - 2008
- [Clinical Competence Statement on Cardiac Imaging With Computed Tomography and Magnetic Resonance](#) - 2005
[Click here](#) for the correction posted online November 23, 2009

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ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging

A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine: *Endorsed by the American College of Emergency Physicians* can be accessed by clicking on the following link: <http://circ.ahajournals.org/cgi/content/full/119/22/e561>

Current Pharmacologic Stress Agents

Adenosine

Click on the following link for the full prescribing information:

<http://www.astellas.us/docs/adenoscan.pdf>

Dipyridamole

Click on the following link for the full prescribing information:

<http://www.bedfordlabs.com/BedfordLabsWeb/products/inserts/DPP06.pdf>

Regadenoson

Click on the following link for the full prescribing information:

<http://www.astellas.us/docs/lexiscan.pdf>

Patient Profiles: Special Populations

Overview

Special Patient Populations and A2A Agonists for Pharmacologic Stress Testing:

Patient Type or Issue	Special Consideration or Recommendation
COPD/Asthma	Contraindications to Pharmacologic Vasodilators
Renal Insufficiency/ESRD on Dialysis	Safety Concerns Due to Slow Drug Clearance
Caffeine Consumption	Competition for the A2A Receptor
BMI Heterogeneity	Fixed Dose of Regadenoson for all Patients vs. Binodenoson Weight-Based Approach
Left Bundle Branch Block	Higher Heart Rate Response with A2A Agonists a Possible Concern

Patient with COPD/Asthma

- Dyspnea is the most common Regadenoson AE vs. placebo (61%)
- Regadenoson currently not contraindicated in such patients

Caffeine Consumption

- Regadenoson results consistent with Adenosine findings

Caffeine Content of Popular Coffee

- *Starbucks Coffee*
 - Short (8 oz.): 180mg; Decaf – 15mg
 - Tall (12 oz): 260mg; Decaf – 20mg
 - Grande (16 oz.): 330mg; Decaf – 25mg
 - Venti (20-24oz.): 415mg; Decaf – 30mg
- *McDonald's Coffee*
 - Small coffee (12 oz): 109mg
 - Large coffee (16 oz): 145mg

Patient with Obesity

- No difference in diagnostic accuracy or side-effect profile based on weight with Regadenoson

Left Bundle Branch Block

- LBBB induced septal defects are heart rate dependent
- Currently no data available but study underway using quantitative SPECT analysis

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Webcast 3: Managing Special Populations and Side Effects with Pharmacologic Stress Agents

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