**PET Myocardial Perfusion Imaging (MPI)**

**Typical Workflow**

- Topogram/Scout scan → Emission scan → Stress test
- Topogram/Scout scan → Emission scan → Transmission scan

**Typical Dosimetry and Duration of Imaging (numbers refer to either rest or stress imaging)**

**Dosing (based on 3D imaging):**
- 82-Rubidium: 10-20 mCi
- N-13 Ammonia: 10-20 mCi

**Duration of scan:**
- 82-Rubidium: 3-10 min
- N-13 Ammonia: 10-15 min

*Decay period of 20-50 minutes required between N-13 doses

**Exercise for PET MPI**

- One IV required.
- Only N-13 ammonia can be used for exercise (longer half-life than 82-Rubidium) but cannot obtain myocardial blood flow measurements as patient will not be in scanner at the time of radiotracer injection (maximum exercise capacity, preferably >85% maximum age predicted heart rate).
- Radiotracer dose must account for decay during the delay to transport patient to the scanner.
- Imaging is started as soon as possible but may be impacted by patient breathing.

**Pharmacologic Stress Agents for PET MPI**

**Regadenoson**
- Regadenoson is injected from a pre-filled syringe over 10 seconds followed by a 10 mL saline flush.
- Radiotracer is injected at least 20 seconds after flush (some data supports waiting longer to achieve peak hyperemia).

**Adenosine**
- Two IVs required.
- Administer adenosine over 4-6 minutes with injection of radiotracer 2 minutes after starting the infusion. Continue adenosine infusion for 2 minutes or until 6 minutes in total have been reached.

**Dipyridamole**
- One IV required.
- Give dipyridamole as a continuous infusion over 4 minutes with injection of radiotracer given about 3 minutes after infusion completion.

**Dobutamine**
- Two IVs required.
- Under the guidance of a certified clinician, dobutamine is increased until 85% maximum age predicted heart rate is achieved. Atropine can be used with appropriate guidance if target heart rate is not achieved and there are no contraindications (e.g., glaucoma, urinary retention).
- Infusion should continue throughout radiotracer administration.
- Imaging is started upon completion of radiotracer infusion.

**Key Reference:** ASNC Practice Points Positron Emission Tomography Myocardial Perfusion Imaging. www.asnc.org