

# Amyloid PET Imaging

## INDICATION:

- Amyloid imaging radiopharmaceuticals are indicated for Positron Emission Tomography (PET) imaging of the brain to estimate  $\beta$ -amyloid neuritic plaque density in adult patients with cognitive impairment who are being evaluated for Alzheimer's disease (AD) and other causes of cognitive decline.

## RADIOPHARMACEUTICALS (FDA APPROVED):

- 18F-Florbetapir (Amyvid™, Eli Lilly)
- 18F-Florbetaben (NeuraCeq™, Piramal Life Sciences)
- 18F-Flutemetamol (Vizamyl™, GE Healthcare)

## CONTRAINDICATIONS:

- Inability to cooperate with PET brain imaging.
- Amyloid PET imaging should be performed on a pregnant woman only if there is a clear clinical benefit.
- Previous reaction to the radiopharmaceutical or any excipient.

## ADVERSE REACTIONS (SEE INDIVIDUAL PACKAGE INSERT FOR COMPLETE LISTINGS):

- 18-F Florbetapir (Amyvid™) - headache (<2%), dizziness, nausea (<1%), fatigue (<1%), injection site reaction (<1%).
- 18F-Florbetaben (NeuraCeq™) - injection site reactions (<2%) consisting of erythema, irritation and pain.
- 18F-Flutemetamol (Vizamyl™) - flushing (2%), blood pressure increase (2%), headache (1%), nausea (1%), dizziness (1%)

## STORAGE:

- Store radiopharmaceutical at room temperature.
- Radiopharmaceutical is provided in unit dose syringe and must not be diluted.

## PATIENT PREPARATION:

- It is not necessary for patients to be NPO prior to imaging.
- It is not necessary to control the post injection conditions (e.g. ambient light, temperature, noise).
- It is not necessary to discontinue any medications.
- Patient should wear comfortable clothing, with no metal on head (hair clips, earrings, etc.)
- If patient is breast feeding, recommend discontinuation of breast feeding for 24 hours after administration of radiopharmaceutical.
- It is often useful to engage a family member or caregiver in the process of explaining the scan procedure and assessing the patient's ability to follow instructions.
- Screen patient for claustrophobia and ability to hold still for imaging. Arrange for sedation as required.

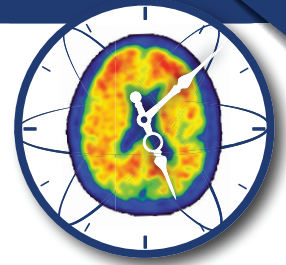
## DOSE AND ADMINISTRATION:

- Inspect the radiopharmaceutical dose solution prior to administration and do not use it if it contains particulate.
- Inject through short tubing (ideally  $\leq 8"$ ) in order to minimize adsorption to tubing

Radiopharmaceutical	Dose	Volume	Injection	Uptake Period	Acquisition length
18F-Florbetapir (Amyvid™)	10mCi	$\leq 10$ cc	bolus	30-50 minutes	10 minutes
18F-Florbetaben (NeuraCeq™)	8.1mCi	$\leq 10$ cc	Slow bolus (6sec/ml)	45-130 minutes	15-20 minutes
18F-Flutemetamol (Vizamyl™)	5mCi	$\leq 10$ cc	Bolus (infused within 40sec)	60-120 minutes	10-20 minutes

## IMAGING PARAMETERS:

- 3D imaging
- Patient supine with the head positioned to center the brain, if possible, with cantho-meatal line perpendicular to the floor.
- Include cerebellum in the PET scanner field of view.
- Reduce head movement with tape or other flexible head restraints.



PROCESSING PARAMETERS:

- Reconstruction should include attenuation correction with resulting transaxial, with pixel sizes between 2 and 3 mm.
- Refer to package insert and radiopharmaceutical manufacturer's instructions for camera-specific processing recommendations.

DISPLAY PARAMETERS:

<b>Radiopharmaceutical</b>	<b>Display</b>
18F-Florbetapir (Amyvid™)	Inverse gray scale (black on white)
18F-Florbetaben (NeuraCeq™)	Gray scale (white on black)
18F-Flutemetamol (Vizamyl™)	Rainbow or Sokoloff color scale

PATIENT INSTRUCTION:

- Advise patient to hydrate and void after procedure to reduce radiation exposure if possible.