AmeriHealth Caritas Louisiana

National Imaging Associates, Inc.*	
Clinical guidelines **BRAIN PET SCAN**	**Original Date: July 1999**
CPT Codes: 78608, 78609	**Last Revised Date: May 2~~June 2~~0221**
Guideline Number: NIA_CG_071	**Implementation Date: January 2023~~2~~**

INDICATIONS FOR BRAIN PET SCAN ~~using FDG (Fluorodeoxyglucose)~~[1-5]
~~(Albano, 2018; de-Bonilla-Damiá, 2017; Jones, 2016; Lewitschnig, 2013; Maza, 2013)~~

Known brain tumor or cancer

- To differentiate radiation necrosis or post-treatment change from residual/recurrent tumor ~~on~~ **when** brain **MRI‡** [1] **is inconclusive** ~~(NCCN, 2020)~~
- To differentiate low from high grade glioma when brain **MRI‡** is inconclusive[2, 3] ~~(Dunet, 2016; Verger, 2017)~~
- **For evaluation of primary brain lymphoma when brain MRI‡ is inconclusive**[4]
- For evaluation ~~of primary brain lymphoma~~**evaluation of meningiomas** when brain **MRI‡** is inconclusive[4, 5]
- To guide intervention/biopsy

To determine operability of refractory seizures[6-8]
~~(Govil-Dalela, 2018; Jones, 2016; Tang, 2019)~~

Post-treatment/procedural evaluation

- A follow-up study may be needed to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed.
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Mild Cognitive Impairment or Dementia[9]
~~(Motara, 2017)~~

- For the detection of early Alzheimer's disease†;
- For the differentiation between Alzheimer's disease, ~~-~~**d~~D~~**ementia with Lewy body disease (DLB) and **f~~F~~**rontotemporal lobar degeneration (FTD)†; or

* National Imaging Associates, Inc. (NIA) is a subsidiary of Magellan Healthcare, Inc.

- To assess for the presence of b~~B~~eta amyloid plaque in Alzheimer's disease when being considered for Aduhelm treatment†

†Note: **AFTER** an initial insufficient evaluation with a Brain **MRI‡** and the following 2 criteria have been met[10, 11] ~~(ACR, 2015; Bohnen, 2011)~~:

- Objective cognitive impairment[12, 13] ~~(Albert, 2011; Iaccarino, 2017)~~ has been demonstrated by:
  - Either by Mini Mental Status Evaluation (MMSE) or Montreal Cognitive Assessment (MoCA) less than 26[14] ~~(Davis, 2015)~~
  - **OR** by Neuropsychological testing showing at least mild cognitive impairment[15, 16] ~~(Caminiti, 2018; Inui, 2017)~~
- Potential treatable causes have been assessed and addressed ~~(Albert, 2011)~~,[12] such as:
  - Metabolic causes, such as thyroid or vitamin deficiency, anemia, or toxic metabolic encephalopathy
  - Medication side effects[17] ~~(Campbell, 2010)~~
  - Medical causes, such as vascular or traumatic or inflammatory

‡**Note:** Brain CT is acceptable if brain MRI is contraindicated. However, Brain CT cannot be substituted for MRI when Brain PET is requested for evaluation of amyloid plaque because MRI is a prerequisite to Aduhelm treatment.

BACKGROUND

Positron Emission Tomography (PET) scanning ~~using FDG (fluorodeoxyglucose)~~**can be used to** assesses brain metabolism and perfusion. Uses include identifying epileptic foci prior to surgery, differentiation of residual tumor versus scar, **helping differentiate inconclusive findings on Brain MRI** and **identifying** causes of cognitive decline ~~(Wippold, 2015)~~.[18]

~~Current agents which show promise in assessing plaques of the protein beta-amyloid include: florbetapir F-18, florbetaben F-18, and flutemetamol F-18 with PET. PET/MR is also being studied (Zhang, 2017).[21] Other new agents target the tau protein and microglial activation.~~

POLICY HISTORY

Date	Summary
May ~~July~~ 2022	• **Updated references and background** • **Removed FDG from Indications title** • **Added meningioma when MR is inconclusive**
July 2021	• Added information on detection of amyloid for use with Aduhelm
May 2020	• Added CNS lymphoma and glioma after inconclusive imaging • For the detection of early Alzheimer's disease or the differentiation between Alzheimer's disease, Dementia with Lewy body disease (DLB) versus Frontotemporal lobar degeneration (FTD) after appropriate clinical work up and initial insufficient evaluation with a brain MRI • Changed post-surgery to post treatment

	• Removed longitudinal assessment of memory decline • Added references
June 2019	• Changed indications title to specify: 'using FDG (fluourodeoxyglucose)' • For indication: Mild Cognitive Impairment or Dementia, added '*Brain MRI to rule out structural causes or Brain CT if MRI is contraindicated'* • Added information to background section

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Reviewed / Approved by NIA Clinical Guideline Committee

~~**GENERAL INFORMATION**~~

~~It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.~~

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State-Specific Required Language

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Reviewed / Approved by NIA Clinical Guideline Committee

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