KAISER PERMANENTE®

Kaiser Foundation Health Plan of Washington

Clinical Review Criteria
Brain MRI

Criteria

For Medicare Members

This policy does not apply to Medicare members.

For Non-Medicare Members

***Site of Care review also applies -** See the High-end imaging Site of Care Medical Policy

Magnetic resonance imaging (MRI) studies of the brain may be medically necessary when the following criteria are met:

I. **Evaluation of headache:**
Brain MRI is not indicated for any of the following headache diagnoses in the absence of focal neurological deficits: migraine, cluster headache, tension-type headache, or chronic stable headache**.**
MRI can be considered for 1 or more of the following –
   a. Chronic headache with a change in character/pattern (e.g., more frequent, increased severity, or duration) not explained after evaluation of common causes (e.g., medication overuse syndrome or cervicogenic headache) and failure to respond to standard medical management
   b. Suspected aneurysm rupture/leak or AVM. Typically described as a new onset (< 48 hours) of “worst headache in my life” or “thunderclap” headache. A thunderclap type headache is a sudden onset new headache reaching maximum intensity within 2-3 minutes, lasting more than 5 minutes.
   c. Prior history of stroke or intracranial bleed with sudden onset of severe headache
   d. New onset of headache and any of the following:
      i. Onset of headache before age 6 years
      ii. Onset of headache after age 50 years not explained after evaluation of common causes (e.g., medication overuse syndrome or cervicogenic headache)
      iii. A combination of acute, new, or fluctuating neurologic deficits such as unilateral sensory deficits, unilateral limb weakness, speech difficulties, visual loss, lack of coordination, gait disturbance, seizures, otherwise unexplained vomiting, otherwise unexplained acute hypertension, cranial nerve abnormality, mental status changes, or with papilledema or other signs of increased intracranial pressure
      iv. Clinical signs and symptoms strongly suggesting metastatic cancer as the cause of the headache
      v. Significantly immunocompromised patient (i.e., patient with HIV or immunosuppression)
      vi. Patients with risk factors for cerebral venous thrombosis:
         1. Pregnancy or post-partum
         2. Known history of active coagulation disorder (e.g., sickle cell crisis, or clinical signs of active coagulation disorder)
      vii. Fever or meningismus with suspected CNS cause
      viii. Reproducible headache immediately preceded by physical exertion, sexual activity, Valsalva maneuver, or positional change, e.g., leaning forward
   e. MRI can be considered in a **pediatric age (0-16 years old)** patient with worsening headache and **1 or more** of the following:
      i. Occipital location

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ii. Age < 6 years
iii. Repeatedly awakens child from sleep or is present upon awakening

II. **Acute, new, or fluctuating neurologic symptoms or deficits** such as **1 or more** of the following:
a. Ataxia or gait disturbance without other cause
b. Change in speech or language (e.g., dysarthria, aphasia)
c. Cranial nerve palsy (not otherwise explained (e.g., Bell's Palsy or diabetic CN III palsy)
d. Focal sensory /motor deficit suggesting brain or spinal cord cause (e.g., unilateral numbness or paresthesia's of face, arm and leg *OR* arm and leg)
e. Horner syndrome (unilateral miosis, ptosis, facial anhidrosis)
f. Papilledema
g. New visual disturbance (e.g., diplopia, visual field defect, nystagmus, visual loss)

III. **Evaluation of known or suspected seizure disorder and 1 or more** of the following:
a. New onset of a seizure (first focal seizure or first unprovoked generalized seizures)
b. Newly identified change in seizure activity/pattern not otherwise explained.
c. Medically refractory epilepsy
d. Preoperative evaluation when surgery being considered
e. Seizure in child younger than 2 years, excluding those with febrile seizures

IV. **Evaluation of movement disorders** – **Not indicated for **typical** Parkinson's Disease, essential tremor, primary dystonia, restless leg syndrome, or tics/spasms which can be duplicated at will*
a. Evaluation of suspected Parkinson's with atypical feature(s) or unresponsive to levodopa
b. Evaluation of new non-Parkinson symptoms in known Parkinson's disease complicating the evaluation of the current condition
c. Evaluation of other movement disorder to exclude a structural lesion (e.g., suspected Huntington disease, chorea, atypical parkinsonian syndromes, hemiballismus, secondary dystonia)
d. Prior to surgery or deep brain stimulation in patient with known Parkinson disease

V. **Evaluation of new or acutely worsened cognitive impairment with unclear cause (to rule out large frontal tumor or frontal stroke). Not indicated if the patient has a classic Alzheimer 's history of several years of progressive decline. CT may be sufficient if MRI cannot be done. Must meet ALL of the following:**
a. Change in mental status with a mental status score of either Mini-Mental State Exam (MMSE) or Montreal Cognitive Assessment (MoCA) of less than 26 or other similar mental status instruments showing at least mild cognitive impairment **AND**
b. A completed medication review and exclusion of medical causes (e.g., thyroid function testing, liver function testing, complete blood count, electrolytes, and B12) without cause found

VI. **Evaluation of known or suspected inflammatory disease or infection** (e.g., meningitis or abscess) for **1 of the following:**
a. Intracranial abscess or brain infection with acute altered mental status OR positive lab findings (such as elevated WBC's) OR follow up assessment during or after treatment completed
b. Meningitis with positive signs and symptoms (such as fever, headache, mental status changes, stiff neck) OR positive lab findings (such as abnormal lumbar puncture fluid exam)
c. Suspected encephalitis with a headache, altered mental status OR positive lab finding, (such as elevated WBC's)
d. Endocarditis with suspected septic emboli
e. Central nervous system (CNS) involvement in members with known or suspected vasculitis or autoimmune disease with positive lab findings

VII. **Evaluation of vertigo/dizziness** *All patients should have full neurologic examination, medication review, orthostatic vitals, and Dix-Hallpike test for peripheral vertigo prior to consideration of MRI.
MRI can be considered appropriate if **1 or more** of the following signs or symptoms suggestive of a CNS lesion:
a. Brainstem findings (e.g., dysarthria, Horner syndrome, double vision, vertical nystagmus) **OR**
b. Cerebellar findings (e.g., ataxia/incoordination of voluntary movements, intention tremor, disorder of equilibrium or gait, diminished muscle tone) **OR**
c. Focal neurologic findings (e.g., weakness, numbness, paresthesia's on one side of body) **OR**

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d. Acute or rapidly progressing unilateral hearing loss

VIII. **Evaluation of syncope, with 1 or more of the following:**
a. Concurrent bowel or bladder incontinence
b. Witnessed tonic-clonic seizure
c. Strong clinical suspicion of symptomatic third ventricular cyst

IX. **Precocious puberty** (central), as indicated by **ALL of the following**:
a. Clinical findings suggestive of central precocious puberty
b. Patient has been evaluated by pediatric endocrinologist

X. Global developmental delay or developmental delay with abnormal neurological examination (initial evaluation)

XI. Other indications for a brain MRI

Effective until May 1, 2024	a. Multiple sclerosis – known or strong clinical suspicion after discussion with neurology i. Frequency after diagnosis: annually to monitor for new lesions or following clinical flare up
Effective May 1, 2024	a. Multiple sclerosis – known or strong clinical suspicion after discussion with neurology. Frequency after diagnosis: i. annually to monitor for new lesions, or ii. following clinical symptoms of a flare up, or iii. 3-6 months after radiologic evidence of a flare up, or iv. iv. 3-6 months and/or 6-12 months after changing disease modifying agent

b. Trauma to the head with acute, new, or fluctuating neurologic findings
c. Brain tumor, mass, or metastasis – known or strong clinical suspicion based on history and physical exam
d. Routine surveillance of previously diagnosed brain tumor based on treatment plan from neuroscience specialty or oncology
e. Initial evaluation of stroke/TIA
f. Evaluation of known or suspected congenital abnormality with any acute, new, or fluctuating neurologic, motor, or mental status changes (hydrocephalus, craniosynostosis)
g. Evaluation of suspected acute subarachnoid hemorrhage (SAH) if CT scan is non-diagnostic
h. Evaluation of known or suspected cerebrospinal fluid (CSF) leakage
i. Follow-up of a recent brain hemorrhage to check for underlying tumor or AVM
j. Immunocompromised member (e.g., transplant recipients, HIV with CD4 < 200, primary immunodeficiency syndromes, hematologic malignancies) with focal neurologic symptoms, headaches, behavioral, cognitive, or personality changes
k. Pre-operative evaluation for brain/skull surgery, stereotactic radiosurgery
l. Post-operative/procedural evaluation - A follow-up study may be needed to help evaluate a member's progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested
m. Suspected acoustic neuroma include IAC protocol (to ensure that imaging looks in detail at that part of the anatomy)
n. Anatomy or structural defect evaluation – e.g., when Chiari malformation is clinically suspected
o. Suspected intracranial vasculitis
p. Evaluation of neurological signs or symptoms in sickle cell disease
q. Unexplained acute unilateral hearing loss after other reasonable causes ruled out
r. Optic neuritis – consider orbit MRI in addition to brain MRI
s. Abnormal eye findings on physical or neurologic examination (e.g., papilledema, pathologic nystagmus, ocular nerve palsies, new onset anisocoria, visual field deficit)
t. Horner's syndrome with symptoms localizing the lesion to the central nervous system
u. Trigeminal neuralgia if medication is not effective or if atypical features/exam (e.g., bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain >2 min, pain outside trigeminal nerve distribution, progression)
v. Bell's palsy - only if atypical signs, or no improvement at four months, or facial twitching/spasms prior to onset

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w. Psychological changes with neurological deficits on exam or after completion of a full neurological assessment by a neurologist that suggests a possible neurologic cause
x. Multiple cranial neuropathies.

If requesting this service (*or these services*), please send the following documentation to support medical necessity:

- Last 6 months of clinical notes from requesting provider &/or specialist

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

MRI can detect a variety of conditions of the brain such as cysts, tumors, bleeding, swelling, developmental and structural abnormalities, infections, inflammatory conditions, or problems with the blood vessels. It can determine if a shunt is working and detect damage to the brain caused by an injury or a stroke.

MRI of the brain can be useful in evaluating problems such as persistent headaches, dizziness, weakness, and blurry vision or seizures, and it can help to detect certain chronic diseases of the nervous system, such as multiple sclerosis.

In some cases, MRI can provide clear images of parts of the brain that can't be seen as well with an X-ray, CAT scan, or ultrasound, making it particularly valuable for diagnosing problems with the pituitary gland and brain stem.

Applicable Codes

Non-Medicare - Considered Medically Necessary when criteria in the applicable policy statements listed above are met
Medicare – Medical Necessity Review not required

CPT® or HCPCS Codes	Description
70551	Magnetic resonance (eg, proton) imaging, brain (including brain stem); without contrast material
70552	Magnetic resonance (eg, proton) imaging, brain (including brain stem); with contrast material(s)
70553	Magnetic resonance (eg, proton) imaging, brain (including brain stem); without contrast material, followed by contrast material(s) and further sequences

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

****To verify authorization requirements for a specific code by plan type, please use the **Pre-authorization Code Check**.

Date Created	Date Reviewed	Date Last Revised
02/01/2022	02/01/2022[MPC], 02/07/2023[MPC]	12/09/2023

[MPC] Medical Policy Committee

Revision History	Description

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02/01/2022	MPC approved to adopt criteria for Brain MRI for non-Medicare members. Requires 60-day notice, effective date 07/01/2022.
12/09/2023	MPC approved to modify medical necessity criteria for brain MRI; allowing for a short-term imaging follow-up after radiologic signs of MS disease activity and more rapid imaging follow-up for up to one year following a change in therapy. Requires 60- day notice. Effective May 1, 2024

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