

MRI Modalities of the Brain Guidelines**DEPARTMENT: Utilization Management Physician Practice Guidelines****EFFECTIVE DATE: 02/97****DATE LAST REVIEWED: 08/21**

SOURCES: Milliman, Inc.
American College of Radiology Appropriateness Criteria
<https://acsearch.acr.org/list>
HealthLink Clinical Guidelines; CT/MRI Brain and Head

RECOMMENDED GUIDELINES:

- 1) Medical evidence does not support the routine use of CT or MRI Brain for:
 - a) Headache with:
 - i) Normal neurologic examination and no new features
 - ii) Episodic, disabling headache with a stable pattern and a normal neurologic examination.
 - b) Tension headache.
 - c) Typical Parkinson's disease – (ACR Appropriateness Criteria)
 - d) Dizziness (excluding true vertigo).
- 2) Indications:
New focal neurologic deficit.
 - a) TIA.
 - b) Ataxia.
 - c) Focal sensory deficit of face, limb, or whole side of body.
 - d) Focal weakness of face, limb, or whole side of body.
 - e) Change in speech pattern (aphasia, dysarthria).
 - f) Visual disturbance (ie, diplopia, visual field deficit, central nystagmus).
 - g) Suspected inflammation or infection
 - i) Abscesses
 - ii) Empyema
 - iii) Encephalitis
 - iv) Multiple sclerosis
 - h) Altered mental status. – In conjunction with non-contrast CT
 - i) Congenital abnormalities present on exam.
 - j) Dementia & Movement Disorder:
 - i) Dementia is of abrupt or of relatively recent onset or has acutely worsened.
 - ii) Suspect potentially treatable abnormality such as:
 - (1) Subdural hematoma.
 - (2) Frontal lobe tumor.
 - (3) Normal Pressure Hydrocephalus (should have 2 of 3 symptoms).
 - (a) Gait apraxia.
 - (b) Incontinence.

- (c) Dementia.
 - (4) Probable and Possible Alzheimer's Dementia
 - (5) Suspected frontotemporal dementia
 - (6) Suspected dementia with Lewy Bodies
 - (7) Vascular Dementia
 - (8) Prion disease
 - (9) Suspected Huntington Disease
- iii) Clinical features suggestive of neurodegeneration with brain iron accumulation (Hollovorden Spatz)
- iv) Motor Neuron Disease
- v) Pre-op surgery or stimulator placement
- k) Epilepsies if:
 - i) New onset seizure, various causes
 - ii) Altered mental status
 - iii) Fever
 - iv) History of head trauma – if sub-acute or chronic. CT preferred first in acute setting, MRI is complementary in acute brain injury
 - v) Persistent headache
 - vi) Patient on anticoagulants
 - vii) AIDS
 - viii) Surgical Planning
- l) Headache if:
 - i) First or worst headache of the patient's life, particularly if the onset was rapid. CT should be done first.
 - ii) A change in the frequency, severity, or clinical features of the headache attack.
 - iii) Onset of headache after 55 years of age.
 - iv) A new or progressive headache that persists for days.
 - v) Precipitation of head pain with coughing, sneezing, bending down, or Valsalva.
 - vi) Systemic symptoms such as myalgia, fever, malaise, weight loss, scalp tenderness, or jaw claudication.
 - vii) Focal neurologic symptoms.
 - viii) Abnormal neurologic exam.
 - ix) Confusion
 - x) Seizures.
 - xi) HIV-positive patient.
 - xii) Headache in the elderly with sed rate higher than 55 especially with temporal pain
 - xiii) Cluster Headache / Trigeminal Neuralgia
- m) Hearing loss:
 - i) Sensorineural hearing loss with or without vertigo.
 - ii) Total deafness for cochlear implant planning.
 - iii) Acoustic Neuroma
- n) Hydrocephalus suspected in a child.
- o) Parkinson's disease:
 - i) Typical and Atypical unresponsive to levodopa
 - ii) Preoperatively before Parkinson's surgery.
- p) Neuroendocrine, Visual loss, Cranial neuropathies
 - i) Bitemporal hemianopia.
 - ii) Oculomotor palsies.
 - iii) Abnormal temperature regulation.
 - iv) Hyperprolactinemia.
 - v) Diabetes insipidus.
 - vi) Hypogonadotropic hypogonadism.
 - vii) Central hyperthyroidism.
 - (1) Elevated TSH.
 - (2) Normal or increased free T4.
 - viii) Central hypothyroidism.

- (1) Free T4 below normal.
- (2) TSH below normal.
- ix) Cushing syndrome.
- x) Acromegaly.
- q) Tremor
 - i) Indicated preoperatively before surgery or nerve stimulator implant.
- r) Vertigo if:
 - i) Vertigo that is unresponsive to treatment.
 - ii) Associated focal neurologic findings.
- 3) Indications for MR angiogram/MR venogram:
 - a) Focal neurologic symptoms AND:
 - i) Neck pain.
 - ii) Suspected carotid or vertebral artery dissection.
 - iii) Venous sinus thrombosis
 - iv) Screening for possible aneurysm and monitoring for size
 - v) Carotid artery stenosis (carotid ultrasound preferred screening method).
 - vi) Suspect posterior circulation or intracranial stenosis.
 - vii) If CTA is contraindicated—contrast allergy