

**SELECT HEALTH NETWORK, INC.
PHYSICIAN PRACTICE GUIDELINES**

SUBJECT: MRI Modalities of the Brain

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

- I. Medical evidence does not support the routine use of CT or MRI Brain for:
 - A. Headache with:
 1. Normal neurologic examination and no new features
 2. 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).
- II. 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
 1. Abscesses
 2. Empyema
 3. Encephalitis
 4. Multiple sclerosis
 - H. Altered mental status. – In conjunction with noncontrast CT
 - I. Congenital abnormalities present on exam.
 - J. Dementia & Movement Disorder:
 1. Dementia is of abrupt or of relatively recent onset or has acutely worsened.
 2. Suspect potentially treatable abnormality such as:
 - a. Subdural hematoma.
 - b. Frontal lobe tumor.
 - c. Normal Pressure Hydrocephalus (should have 2 of 3 symptoms).
 1. Gait apraxia.
 2. Incontinence.
 3. Dementia.
 - d. Probable and Possible Alzheimer's Dementia
 - e. Suspected frontotemporal dementia
 - f. Suspected dementia with Lewy Bodies
 - g. Vascular Dementia
 - h. Prion disease

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

- b. TSH below normal.
 - 9. Cushing syndrome.
 - 10. Acromegaly.
- Q. Tremor
 - 1. Indicated preoperatively before surgery or nerve stimulator implant.
- R. Vertigo if:
 - 1. Vertigo that is unresponsive to treatment.
 - 2. Associated focal neurologic findings.
- III. Indications for MR angiogram/MR venogram:
 - A. Focal neurologic symptoms AND:
 - 1. Neck pain.
 - 2. Suspected carotid or vertebral artery dissection.
 - 3. Venous sinus thrombosis
 - 4. Screening for possible aneurysm and monitoring for size
 - 5. Carotid artery stenosis (carotid ultrasound preferred screening method).
 - 6. Suspect posterior circulation or intracranial stenosis.
 - 7. If CTA is contraindicated—contrast allergy