CIGNA MEDICAL COVERAGE POLICIES- RADIOLOGY

Head Imaging Guidelines

Effective Date: February 02, 2027

Instructions for use

The following coverage policy applies to health benefit plans administered by Cigna. Coverage policies are intended to provide guidance in interpreting certain standard Cigna benefit plans and are used by medical directors and other health care professionals in making medical necessity and other coverage determinations. Please note the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these coverage policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a coverage policy.

In the event of a conflict, a customer's benefit plan document always supersedes the information in the coverage policy. In the absence of federal or state coverage mandates, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of:

1. The terms of the applicable benefit plan document in effect on the date of service
2. Any applicable laws and regulations
3. Any relevant collateral source materials including coverage policies
4. The specific facts of the particular situation

Coverage policies relate exclusively to the administration of health benefit plans. Coverage policies are not recommendations for treatment and should never be used as treatment guidelines.

This evidence-based medical coverage policy has been developed by EviCore, Inc. Some information in this coverage policy may not apply to all benefit plans administered by Cigna.

These guidelines include procedures EviCore does not review for Cigna. Please refer to the **Cigna CPT code list** for the current list of high-tech imaging procedures that EviCore reviews for Cigna.

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Abbreviations for Head Imaging Guidelines

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Abbreviations for Head Imaging Guidelines	
ACTH	adrenocorticotropic hormone
AD	Alzheimer's Disease
ADH	antidiuretic hormone
AION	arteritic ischemic optic neuritis
AVM	arteriovenous malformation
CBCT	cone-beam computerized tomography
CMV	cytomegalovirus
CSF	cerebrospinal fluid
CT	computed tomography
CTA	computed tomography angiography
DNA	deoxyribonucleic acid
DWI	diffusion weighted imaging (for MRI)
EEG	electroencephalogram
ENT	ear, nose, throat
ESR	erythrocyte sedimentation rate
FDG	fluorodeoxyglucose
FSH	follicle-stimulating hormone

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Abbreviations for Head Imaging Guidelines	
FTD	Frontotemporal Dementia
GCA	giant cell arteritis
GCS	Glasgow Coma Scale
HIV	human immunodeficiency virus
LH	luteinizing hormone
MMSE	mini mental status examination
MRA	magnetic resonance angiography
MRI	magnetic resonance imaging
MRN	magnetic resonance neurography
MS	multiple sclerosis
MSI	magnetic source imaging
NAION	non-arteritic ischemic optic neuritis
NPH	normal pressure hydrocephalus
PET	positron emission tomography
PML	progressive multifocal leukoencephalopathy
PNET	primitive neuro ectodermal tumor
PWI	perfusion weighted imaging (for MRI)
SAH	subarachnoid hemorrhage
SIADH	syndrome of inappropriate antidiuretic hormone secretion

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Abbreviations for Head Imaging Guidelines	
SLE	systemic lupus erythematosus
TIA	transient ischemic attack
TMJ	temporomandibular joint disease
TSH	thyroid-stimulating hormone
VBI	vertebrobasilar insufficiency
VP	ventriculoperitoneal
XRT	radiation therapy

Head Imaging Guidelines

General Guidelines (HD-1.0)

HD.GG.0001.0.A
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- A pertinent clinical evaluation including a detailed history, physical examination including a neurological examination since the onset or change in symptoms, and appropriate laboratory studies should be performed prior to considering the use of an advanced imaging (CT, MR, Nuclear Medicine) procedure.
  - A pertinent clinical evaluation furnished via telehealth, since the onset or change in symptoms, is treated the same as an in-person clinical evaluation.
  - An exception to a pertinent clinical evaluation can be made if the individual is undergoing a guideline-supported, scheduled follow-up imaging evaluation.
    - Scheduled follow-up of known problems such as, multiple sclerosis, tumors, or hydrocephalus, scheduled surveillance with no new symptoms, screening asymptomatic individual due to family history or otherwise meet criteria for repeat imaging, as well as appropriate laboratory studies and non-advanced imaging modalities
  - A detailed neurological exam is required prior to advanced imaging except in the following scenarios:
    - Tinnitus, TMJ, sinus or mastoid disease, ear pain, hearing loss, eye disease, pituitary disease, or epistaxis. (A pertinent clinical evaluation since onset of symptoms is still required).
    - The request is from a neurologist, neurosurgeon, neuro-ophthalmologist, endocrinologist, gynecologist, otolaryngologist, or ophthalmologist who has seen the individual since onset of symptoms, or any provider in consultation with one of the above specialists.
- Other meaningful contact (telephone call, electronic mail, or messaging) since the onset or change in symptoms, with an established individual can substitute for a face-to-face clinical evaluation.
- CT Head contrast as requested (CPT® 70450 OR CPT® 70460 OR CPT® 70470) is considered medically necessary when MRI is contraindicated.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence;

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education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Head Imaging Guidelines

General Guidelines – Anatomic Issues (HD-1.1)

HD.GG.0001.1.A
v1.0.2027

Criteria

- If two studies using the same modality both cover the anatomic region of clinical interest, only one is generally needed, with the exception of the following scenarios:
  - CT Maxillofacial (CPT® 70486, CPT® 70487, or CPT® 70488) or CT Orbit/Temporal bone (CPT® 70480, CPT® 70481, or CPT® 70482): both cover the structures of the orbits, sinuses, and face. Two separate imaging studies are only supported if there is suspicion of simultaneous involvement of more posterior lesions, especially of the region involving the middle or inner ear.
  - Pituitary Gland: one study (either MRI Brain [CPT® 70553] or MRI Orbit/Face/Neck [CPT® 70543]) is adequate to report the imaging of the pituitary. If a previous routine MRI Brain was reported to show a possible pituitary tumor, a repeat MRI with dedicated pituitary protocol is considered medically necessary.
  - Internal Auditory Canal: (IAC) MRI can be reported as a limited study with one code from the set (CPT® 70540, CPT® 70542, or CPT® 70543), but should not be used in conjunction with MRI Brain codes (CPT® 70551, CPT® 70552, or CPT® 70553) if IAC views are performed as part of the brain.
  - Mandible (jaw): CT Maxillofacial (CPT® 70486, CPT® 70487, or CPT® 70488) or CT Neck (CPT® 70490, CPT® 70491, or CPT® 70492) can be used to report imaging of the mandible. CT Neck will also image the submandibular space.
    - If MRI is considered medically necessary, MRI Orbit/Face/Neck (CPT® 70540, CPT® 70542, or CPT® 70543) can be used to report imaging of the mandible and submandibular space.
    - MRI Temporomandibular Joint(s) (TMJ) is reported as CPT® 70336. This code is inherently bilateral and should not be reported twice on the same date of service.

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General Guidelines – Modality (HD-1.2)

HD.GG.0001.2.A
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Criteria

- MRI is preferable to CT for most indications. For exceptions, See **General Guidelines – CT Head (HD-1.4)**
- MRI is considered medically necessary for these indications following an initial CT:
  - MRI Brain without and with contrast (CPT® 70553) to follow-up abnormalities seen on CT Head without contrast (CPT® 70450) when a mass, lesion, or infection is found.
  - MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) to follow-up abnormalities seen on CT Head without contrast (CPT® 70450) when there is suspected Multiple Sclerosis or other demyelinating disease.
  - MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) to follow up on stroke or TIA when initial CT Head was done on emergent basis.
  - MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) for evaluation of new onset seizures.

Evidence Discussion (HD-1.2)

- MRI of the brain is the appropriate initial imaging study for diagnosis, characterization and surveillance of a variety of neurologic conditions, including, but not limited to: neoplastic conditions, evaluation of the brain parenchyma, meninges, ischemia and infarction, neurodegenerative disorders, hydrocephalus, demyelinating conditions, post-traumatic brain injury, inflammatory and autoimmune disorders, and infectious disorders (ACR, 2024a).
- MRI Brain has some benefit over CT for determining age of intracranial hemorrhage, early stroke (via Diffusion imaging sequences), and detection of micro hemorrhage (ACR, 2024a; Kubal, 2012; Burgess & Kidwell 2011, Kidwell et al. 2004).
- MRI is also considered medically necessary for further characterization of abnormalities detected on other imaging tests such as CT or sonography (ACR, 2024a).
- Limitations to MRI include artifacts due to motion and susceptibility effects, contrast complications, contraindication due to ferromagnetic devices or implants. Additionally, severe claustrophobia may require sedation in order to complete the study (Kanal et al., 2013).

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General Guidelines – MRI Brain (HD-1.3)

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Criteria

- MRI Brain with contrast (CPT® 70552) should not be ordered except to follow-up on a very recent abnormal or equivocal non-contrast MRI Brain.
- After an MRI Brain without contrast (CPT® 70551), a follow up MRI Brain with contrast (CPT® 70552) may be performed at the discretion of a neurologist, a neurosurgeon, or a neuro-ophthalmologist, or any provider in consultation with a neurologist, neurosurgeon, or neuro-ophthalmologist, and/or at the recommendation of the radiologist.
- Gadolinium is relatively contraindicated in pregnancy, MRI Brain without contrast (CPT® 70551) is supported.
- The AMA CPT® manual does not describe nor assign any minimum or maximum number of sequences for any CT or MRI study. Both MRI and CT imaging protocols are often influenced by the individual clinical situation of the individual and additional sequences are not uncommon. There are numerous MRI sequences that are performed to evaluate specific clinical questions, and this technology is constantly undergoing development. Additional sequences, however, are still performed and coded under the routine MRI Brain CPT® 70551, CPT® 70552, or CPT® 70553.

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General Guidelines – CT Head (HD-1.4)

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Criteria

- Scenarios in which MRI is contraindicated (e.g., pacemakers, ICDs, cochlear implants, aneurysm clips, orbital metallic fragments, etc.)
- In urgent cases, CT Head, contrast as requested is considered medically necessary [CT Head without contrast (CPT® 70450) or CT Head with contrast (CPT® 70460) or CT Head without and with contrast (CPT® 70470)]
- CT Head without contrast (CPT® 70450) is considered medically necessary for:
  - mass effect
  - blood/blood products
  - urgent/emergent settings due to availability and speed of CT
  - trauma
  - recent hemorrhage, whether traumatic or spontaneous
  - bony structures of the head evaluations including dystrophic calcifications
  - hydrocephalus evaluation and follow-up (some centers use limited non-contrast "fast or rapid MRI" (CPT® 70551) to minimize radiation exposure in children).
  - prior to lumbar puncture in individuals
  - evaluation of optic disc edema and/or papilledema, a non-contrast CT Head is useful to assess for space-occupying processes such as intracranial hemorrhage, mass effect, and hydrocephalus, See **Papilledema/Pseudotumor Cerebri (HD-17.1)** and **Eye Disorders and Visual Loss (HD-32.1)**

Evidence Discussion (HD-1.4)

- CT head is the preferred modality for evaluation of bony structures, acute intracranial hemorrhage, trauma, and detection of abnormalities associated with calcifications (Kubal, 2012; Kidwell et al., 2011; ACR 2020a; ACR 2021a).
- This modality is also useful for follow-up of intracranial hemorrhage, hydrocephalus shunts, and post-operative follow-up (Kubal, 2012; Kidwell et al., 2011; ACR 2020a; ACR 2021a).
- CT head provides more rapid detection of intracranial abnormalities in urgent or emergent situations (ACR 2020a; ACR 2021a; Barnes 2011).
- CT has less motion artifact than MRI due to its faster acquisition and better spatial resolution than MRI.
- Limitations of CT include lower early detection rates for occult fracture than MRI, ionizing radiation exposure, and lower contrast resolution than MRI.

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General Guidelines – CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)

HD.GG.0001.5.A
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Criteria

Angiography imaging refers to both arterial and venous imaging. Vascular angiography is not the same imaging as diagnostic MRI.

- MRA Head is performed without contrast (CPT® 70544), with contrast (CPT® 70545), or without and with contrast (CPT® 70546)
- MRA Neck is performed without contrast (CPT® 70547), with contrast (CPT® 70548), or without and with contrast (CPT® 70549), depending on facility preference and protocols and type of scanner
- CTA Head is performed without and with contrast (CPT® 70496)
- CTA Neck is performed without and with contrast (CPT® 70498)
- CTA Head and Neck is performed without and with contrast (CPT® 70471). This code must be substituted when both CTA head and neck are performed together during the same session.
- CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart (there is no specific code for CT/MR venography).
  - If arterial and venous CT or MR studies are both performed in the same session, only **one** CPT® code is used to report both procedures.
  - If an arterial CTA or MRA study has been performed and subsequently a repeat study is needed to evaluate the venous anatomy, then this study is considered medically necessary.
  - If a venous CTV or MRV study has been performed and subsequently a repeat study is needed to evaluate the arterial anatomy, then this study is considered medically necessary.
- Medically necessary indications for CTA or MRA Head and Neck vessels include, but are not limited to the following:
  - Pulsatile tinnitus
  - Hemifacial spasm if consideration for surgical decompression
  - Evaluation of stroke or TIA (see **Stroke/TIA (HD-21.1)**) including collateral assessment

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- Trigeminal neuralgia (see **Trigeminal Neuralgia and other Centrally Mediated Facial Pain Syndromes (HD-10.1)**)
- Cerebral venous sinus thrombosis (see **Cerebral Venous Sinus Thrombosis (HD-21.8)** and **Papilledema/Pseudotumor Cerebri (HD-17.1)**)
  - MRA without and with contrast is considered medically necessary for venous sinus thrombosis to differentiate total from subtotal occlusion.
- Aneurysm suspected with acute "thunderclap" headache syndrome and appropriate screening or evaluation of known subarachnoid hemorrhage and pseudoaneurysms (appropriate to limit CTA to include only the head to avoid unnecessary radiation to the individual)
- Non-inflammatory vasculopathy, including radiation vasculopathy
- Traumatic vascular injuries
- Vascular malformations, vascular anatomic variants, and fistulas
- Arterial dissections
- Tumors of vascular origin or involving vascular structures
- Surgical and radiation therapy localization, planning, and neuronavigation
- Evaluation for vascular intervention and follow-up including post-surgical/post-treatment vascular complications
- Intracranial pre-operative planning if there is concern of possible vascular involvement or risk for vascular complication from procedure
- Vasculitis and collagen vascular disease
- Eagle Syndrome - Dynamic/positional CTA to assess for vascular compression (also known as bow-hunter's syndrome) (see **Eagle Syndrome (Neck-10.3)**)
- NOTE: Evaluation of posterior circulation disease requires both neck and head MRA/CTA to visualize the entire vertebral-basilar system.

- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496) is considered medically necessary for follow-up of aneurysm clipping or coiling procedures (see **Intracranial Cerebral Aneurysms (HD-12.1)**)
- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496) **AND/OR** MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498) is considered medically necessary if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon)
  - There are high-risk scenarios including, but not exclusive to, fibromuscular dysplasia (FMD), Marfan disease, motor vehicle accident (MVA) with whiplash, or chiropractic manipulation.
- Other vascular imaging indications for headaches require additional information.
  - See **Stroke/TIA (HD-21.1)**, **Sudden Onset of Headache (HD-11.3)**, **New Headache Onset Older than Age 50 (HD-11.7)**, **Abnormal Blood Clotting**

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(HD-11.9), **Pregnancy (HD-11.10)**, **Physical Exertion (HD-11.11)**, and **Systemic Infections (HD-11.13)**

Evidence Discussion (HD-1.5)

- Indications for cervicocerebral computed tomography angiography (CTA) of the head and neck vessels include the diagnosis, characterization and/or surveillance of a variety of vascular conditions, including, but not limited to, arterial aneurysms, dissections, ischemic stroke and transient ischemic attacks, vasculitis, traumatic vascular injuries, pulsatile tinnitus, tumors of vascular origin, and prior to surgical intervention (ACR 2020b). CTA may refer to arterial vessels (CTA) or evaluation of venous structures (CTV) (ACR, 2020b).
- CTA may be used as the initial imaging modality or as a follow up study for characterizing known disease or assessing changes over time (ACR, 2020b).
- Depending on the indication, CTA may be limited to the head to avoid unnecessary radiation to the individual. Examples include surveillance of intracranial aneurysms (that are not located in the posterior circulation) (ACR, 2020b).
- Risks of CTA include exposure to ionizing radiation; thus, magnetic resonance angiography (MRA) is available as an alternative to reduce radiation exposure. In addition, MRA is an alternative for individuals with iodinated contrast allergies or other contraindications to iodinated contrast (ACR, 2020b; ACR 2020c).
- Magnetic resonance angiography (MRA) indications also cover a variety of vascular conditions of the head and neck, for diagnosis, characterization, and surveillance, and may be used to evaluate either arterial (MRA) or venous structures (MRV) (ACR, 2020c).
- MRA, as an alternative modality, is noninvasive, and does not require iodinated contrast (Bailey & Robinson, 2007). Limitations include artifacts due to motion, slow or turbulent flow, and susceptibility effects, and claustrophobia (Bailey & Robinson, 2007). MRA may be performed without contrast or with gadolinium contrast (Bailey & Robinson, 2007). Gadolinium contrast administration is limited to those without renal impairment or known gadolinium contrast allergy (Bailey & Robinson, 2007). Additionally, MRA may not be a feasible option for those with contraindications to MRI such as incompatible pacemakers, cochlear implants, neurostimulators, or other devices (Expert Panel on MR Safety, 2013). In these scenarios, CTA may be the appropriate alternative (ACR, 2020b).

General Guidelines – PET Coding Notes (HD-1.6)

HD.GG.0001.6.A

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- Metabolic Brain PET should be reported as Metabolic Brain PET (CPT® 78608)
- Amyloid Brain PET should be reported as limited PET (CPT® 78811) or limited PET/CT (CPT® 78814)

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General Guidelines – Other Imaging Situations (HD-1.7)

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Persistent Nausea and Vomiting

Screening for Metallic Fragments Before MRI

Gender Affirming Care Head and Neck Surgical Planning

3D Rendering

AI-powered Connectomic Analysis of the Brain

Eagle Syndrome

CSF Leak with or without Headache

Evidence Discussion (HD-1.7)

Persistent Nausea and Vomiting

Criteria

- Nausea and vomiting, persistent, unexplained and a negative GI evaluation: MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary.

Screening for Metallic Fragments Before MRI

Criteria

- Screening for metallic fragments before MRI should be done initially with plain x- ray.
  - The use of CT Orbital to rule out orbital metallic fragments prior to MRI is rarely necessary.
  - Plain x-rays are generally sufficient; x-ray detects fragments of 0.12 mm or more, and CT detects those of 0.07 mm or more.
- Plain x-ray is generally sufficient to screen for aneurysm clips.

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Gender Affirming Care Head and Neck Surgical Planning

Criteria

- For gender affirming care procedure planning:
  - **ANY** or **ALL** the following pre-operative CT requests are considered medically necessary if the individual has a health plan benefit covering the gender affirming surgeries:
    - CT Maxillofacial without contrast (CPT® 70486)
    - CT Orbits/Temporal bone without contrast (CPT® 70480)
    - CT Neck with contrast (CPT® 70491)
    - CT Head without (CPT® 70450)
    - 3D rendering (CPT® 76376 or CPT® 76377)
  - Pre-operative imaging is not supported if the gender affirming surgeries are not health plan covered benefits.
  - Requesting providers are encouraged to confirm eligibility with the member's health plan prior to service.

3D Rendering

Criteria

- CPT® 76376 (3D rendering not requiring imaging post-processing on an independent workstation) or CPT® 76377 (3D rendering requiring image post-processing on an independent workstation) is considered medically necessary in **ANY** of the following clinical scenarios:
  - Bony conditions:
    - Evaluation of congenital skull abnormalities in newborns, infants, and toddler (usually for pre-operative planning)
    - Complex joint fractures or pelvis fractures
    - Spine fractures (usually for pre-operative planning)
    - Complex facial fractures
  - Pre-operative planning for other complex surgical cases
  - Cerebral angiography: 3D rendering when performed in conjunction with conventional angiography (i.e., conventional 4 vessel cerebral angiography).
    - See **Cerebral Aneurysms (HD-12.1)**, **Arteriovenous Malformations (AVMs) and Related Lesions (HD-12.2)**, **Stroke/TIA (HD-21.1)**, and **Cerebral Vasculitis (HD-22.1)**

- 3D Rendering (CPT® 76376 or CPT® 76377) for surgical planning and surgical follow up after craniotomy when ordered by surgical specialist or any provider in consultation with a surgical specialist.
- 3D Rendering indications in pediatric head imaging are identical to those in the general imaging guidelines.
- See **3D Rendering (Preface-4.1)** in the Preface Imaging Guidelines.

AI-powered Connectomic Analysis of the Brain

Criteria

AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T.

- These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

Eagle Syndrome

- See **Eagle Syndrome (Neck-10.3)** in the Neck Imaging Guidelines.
- See **General Guidelines - CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)** for vascular imaging related to Eagle Syndrome.

CSF Leak with or without Headache

- CSF Leak with or without headache, see **Low-Pressure Headache and CSF Leak (HD-11.15)**

Evidence Discussion (HD-1.7)

Neurologic evaluation of Nausea and vomiting

- In the evaluation of persistent, unexplained nausea and vomiting, an MRI Brain is supported after a negative GI evaluation (Hornby, 2001; Shosha et al., 2018; Singh et al., 2015; Johns & Lawrence, 2024). Nausea and vomiting were reported as the initial symptom of a brain tumor in 5% of brain tumor cases (Alther et al., 2020). During the time course until diagnosis, nausea and vomiting is present in 25% of brain tumor cases (Alther et al., 2020).

Screening for metallic fragments

- The American College of Radiology White Paper on MR safety advised that all individuals who have a history of orbit trauma by a potential ferromagnetic foreign body for which they sought medical attention are to have their orbits cleared by

either a plain x-ray orbit films (2 views) or by a radiologist's review and assessment of a prior CT or MR images obtained since the suspected traumatic event (Bailey & Robinson, 2007; Kanal et al., 2002). Screening for the presence of a metallic aneurysm clips with plain films of the skull is also recommended (Kanal et al., 2002). Although CT is more sensitive than plain films, the radiation dose is greatly increased (Bailey & Robinson, 2007).

3D Rendering

- 3D/rotational angiography, as part of cerebral angiography, is also useful for radiation dose reduction during diagnostic and interventional neuroradiology procedures (ACR 2021b).

AI-powered Connectomic Analysis of the Brain

- Limitations to the application of this new technology include the need for meta-analysis and/or systematic review studies and external validation studies. Currently studies are based on retrospective cohorts of patients (Magnani et al., 2022).

Gender affirming head and neck surgeries

- As the field has evolved, more centers are using frontal sinus setback as 90% of individuals require frontal bone osteotomy and setback, based on their frontal bone anatomy. (Dang 2021, Louis 2021) For individuals requiring bony manipulation, a fine-cut, non-contrast craniofacial CT scan from the vertex to the hyoid bone is used to map the bony framework (Dang et al., 2021; Louis et al., 2021). Virtual surgical planning improves efficiency, safety, and accuracy for frontal sinus setback and mandibular angle reduction surgeries (Gray et al., 2019). CT Neck is considered medically necessary for laryngoplasty surgeries (Capitán, et al., 2020).

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References (HD-1)

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1. Alther, B., Mylius, V., Weller, M., & Gantenbein, A. (2020). From first symptoms to diagnosis: Initial clinical presentation of primary brain tumors. *Clinical and Translational Neuroscience*, 4(2). https://doi.org/10.1177/2514183X20968368
2. American College of Radiology. (2020). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the head. https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2020). ACR–ASNR–SPR practice parameter for the performance and interpretation of cervicocerebral computed tomography angiography (CTA). https://gravitas.acr.org/PPTS/
4. American College of Radiology. (2020). ACR–ASNR–SNIS–SPR practice parameter for the performance of cervicocerebral magnetic resonance angiography (MRA). https://gravitas.acr.org/PPTS/
5. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
6. American College of Radiology. (2021). ACR–ASNR–SIR–SNIS practice parameter for the performance of diagnostic cervicocerebral catheter angiography in adults. https://gravitas.acr.org/PPTS/
7. American College of Radiology. (2022). ACR practice parameter for performing and interpreting magnetic resonance imaging (MRI). https://gravitas.acr.org/PPTS/
8. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
9. American College of Radiology. (2024). ACR manual on contrast media. https://www.acr.org/
10. American Medical Association. (2026). CPT®—Current procedural terminology (1995–2026 ed.). American Medical Association.
11. Badhey, A., Jategaonkar, A., Anglin Kovacs, A. J., Kadakia, S., De Deyn, P. P., Ducic, Y., & Virk, J. S. (2017). Eagle syndrome: A comprehensive review. *Clinical Neurology and Neurosurgery*, 159, 34–38. https://doi.org/10.1016/j.clineuro.2017.04.021
12. Bailey, W., & Robinson, L. (2007). Screening for intra-orbital metallic foreign bodies prior to MRI: Review of the evidence. *Radiography,* 13(1), 72–80. https://doi.org/10.1016/j.radi.2005.09.006
13. Barnes, P. D. (2011). Imaging of nonaccidental injury and the mimics: Issues and controversies in the era of evidence-based medicine. *Radiologic Clinics of North America*, 49, 205–229.
14. Bookwalter, C. A., McDonald, R. J., Packard, A. T., Little, J. T., McDonald, J. S., & Watson, R. E. (2025). Contrast media in pregnant and lactating patients. *American Journal of Roentgenology*, 224(4), e2431415. https://doi.org/10.2214/AJR.24.31415
15. Burgess, R. E., & Kidwell, C. S. (2011). Use of MRI in the assessment of patients with stroke. *Current Neurology and Neuroscience Reports*, 11(1), 28–34. https://doi.org/10.1007/s11910-010-0150-2
16. Capitán, L., Santamaría, J. G., Simon, D., Salminen, S., Pérez-Mendez, D., & Olascoaga, J. (2020). Facial gender confirmation surgery. *Plastic and Reconstructive Surgery*, 145(4). https://doi.org/10.1097/PRS.0000000000006686
17. Callen, A. L., Badiee, R. K., Phelps, A., Potigailo, V., Wang, E., Lee, S., Talbott, J., Glastonbury, C., Pomerantz, J. H., & Narvid, J. (2020). Facial feminization surgery: Key CT findings for preoperative planning and postoperative evaluation. *American Journal of Roentgenology*. Advance online publication. https://doi.org/10.2214/AJR.20.25228
18. Chou, D. W., Tejani, N., Kleinberger, A., & Shih, C. (2020). Initial facial feminization surgery experience in a multicenter integrated health care system. *Otolaryngology–Head and Neck Surgery*, 163(4), 737–742. https://doi.org/10.1177/0194599820924635
19. Chuang, W.-C., Short, J. H., McKinney, A. M., Anker, L., Knoll, B., & McKinney, Z. J. (2007). Reversible left hemispheric ischemia secondary to carotid compression in Eagle syndrome. *American Journal of Neuroradiology*, 28, 143–145.
20. Dang, B. N., Hu, A. C., Bertrand, A. A., De La Cruz, C., Sisti, A., & Whitaker, I. S. (2021). Evaluation and treatment of facial feminization surgery: Part I. *Archives of Plastic Surgery*, 48(5), 503–510. https://doi.org/10.5999/aps.2021.00199

21. Ederies, A., Demchuk, A., Chia, T., Gladstone, D. J., Dowlatshahi, D., Bendavit, G., Wong, K., Symons, S. P., & Aviv, R. I. (2009). Postcontrast CT extravasation is associated with hematoma expansion in CTA spot-negative patients. *Stroke*, 40(5), 1672–1676. https://doi.org/10.1161/STROKEAHA.108.541201
22. Eggerstedt, M., Hong, Y. S., Wakefield, C. J., Westrick, J., Smith, R. M., & Revenaugh, P. C. (2020). Setbacks in forehead feminization cranioplasty. *Aesthetic Plastic Surgery,* 44(3), 743–749. https://doi.org/10.1007/s00266-020-01664-8
23. Expert Panel on MR Safety, Kanal, E., Barkovich, A. J., Bell, C., Borgstede, J. P., Bradley, W. G., Froelich, J. W., Gimbel, J. R., Gosbee, J. W., Kuhni-Kaminski, E., Larson, P. A., Lester, J. W., Nyenhuis, J. A., Schaefer, D. J., Sebek, S. J., Weinreb, J., & Wilkoff, B. L. (2013). ACR guidance document on MR safe practices. *Journal of Magnetic Resonance Imaging,* 37(3), 501–530. https://doi.org/10.1002/jmri.24011
24. Expert Panel on Neurologic Imaging, Kennedy, T. A., Corey, A. S., Policeni, B., et#al. (2018). ACR Appropriateness Criteria®: Orbits, vision, and visual loss. *Journal of the American College of Radiology*, 15(5S), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
25. Expert Panel on Neurological Imaging, Luttrull, M. D., Boulter, D. J., Kirsch, C. F. E., Aulino, J. M., Broder, J. S., Chakraborty, S., Choudhri, A. F., Ducruet, A. F., Kendi, A. T., Lee, R. K., Liebeskind, D. S., Mack, W., Moritani, T., Roca, R. P., Shah, L. M., Sharma, A., Shih, R. Y., Symko, S. C., & Bykowski, J. (2019). ACR Appropriateness Criteria® acute mental status change, delirium, and new onset psychosis. J*ournal of the American College of Radiology*, 16(5, Suppl.), S26–S37. https://doi.org/10.1016/j.jacr.2019.02.024
26. Expert Panel on Neurological Imaging, Pannell, J. S., Corey, A. S., & Ledbetter, L. N. (2023). ACR Appropriateness Criteria® cerebrovascular diseases—Stroke and stroke-related conditions. American College of Radiology. https://acsearch.acr.org/docs/3149012/Narrative/
27. Expert Panel on Neurological Imaging, Rath, T. J., Policeni, B., Juliano, A. F., Agarwal, M., Block, A. M., Burns, J., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., Zander, D., & Corey, A. S. (2022). ACR Appropriateness Criteria® cranial neuropathy: 2022 update. *Journal of the American College of Radiology*, 19(11, Suppl.), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
28. Expert Panel on Neurologic Imaging, Shih, R. Y., Burns, J., et#al. (2021). ACR Appropriateness Criteria®: Head trauma—2021 update. *Journal of the American College of Radiology*, 18(5S), S13–S36. https://doi.org/10.1016/j.jacr.2021.01.006
29. Expert Panel on Neurological Imaging, Whitehead, M. T., Cardenas, A. M., et#al. (2019). ACR Appropriateness Criteria®: Headache. *Journal of the American College of Radiology*, 16(11S), S364–S377. https://doi.org/10.1016/j.jacr.2019.05.030
30. Expert Panel on Neurological Imaging, Ledbetter, L. N., Burns, J., et#al. (2021). ACR Appropriateness Criteria®: Cerebrovascular diseases—Aneurysm, vascular malformation, and subarachnoid hemorrhage. *Journal of the American College of Radiology,* 18(11S), S283–S304. https://doi.org/10.1016/j.jacr.2021.08.012
31. Gray, R., Nguyen, K., Lee, J. C., Deschamps-Braly, J., Bastidas, N., Tanna, N., & Bradley, J. P. (2019). Osseous transformation with facial feminization surgery: Improved anatomical accuracy with virtual planning. *Plastic and Reconstructive Surgery*, 144(5), 1159–1168. https://doi.org/10.1097/PRS.0000000000006166 [pubmed.ncb...lm.nih.gov]
32. Gutkowski, P., Rot, S., Fritsch, M., Meier, U., Gölz, L., & Lemcke, J. (2020). Secondary deterioration in normal pressure hydrocephalus after shunt placement. *Fluids and Barriers of the CNS,* 17(1). https://doi.org/10.1186/s12987-020-00180-w
33. Hatcher-Martin, J. M., Adams, J. L., Anderson, E. R., Bove, R., Burrus, T. M., Chehrenama, M., Dolan O'Brien, M., Eliashiv, D. S., Erten-Lyons, D., Giesser, B. S., Moo, L. R., Narayanaswami, P., Rossi, M. A., Soni, M., Tariq, N., Tsao, J. W., Vargas, B. B., Vota, S. A., Wessels, S. R., Planalp, H., & Govindarajan, R. (2020). Telemedicine in neurology: Telemedicine Work Group of the American Academy of Neurology update. *Neurology,* 94(1), 30–38. https://doi.org/10.1212/WNL.0000000000008708
34. Hornby, P. J. (2001). Central neurocircuitry associated with emesis. *The American Journal of Medicine*, 111(8), 106–112. https://doi.org/10.1016/S0002-9343(01)00849-X
35. James, S. E., Herman, J. L., Rankin, S., Keisling, M., Mottet, L., & Anafi, M. (2016). The report of the 2015 U.S. transgender survey. National Center for Transgender Equality. Jalisi, S., Jamal, B., & Grillone, G. (2017). Surgical management of long-standing Eagle's syndrome. *Annals of Maxillofacial Surgery*, 7(2), 232. https://doi.org/10.4103/ams.ams_53_17
36. Johns, T., & Lawrence, E. (2024). Evaluation and treatment of nausea and vomiting in adults. *American Family Physician,* 109(5), 417–425.

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37. Kanal, E., Borgstede, J. P., Barkovich, A. J., Bell, C., Bradley, W. G., Felmlee, J. P., Froelich, J. W., Kaminski, E. M., Keeler, E. K., Lester, J. W., Scoumis, E. A., Zaremba, L. A., Zinninger, M. D., & American College of Radiology(2002). ACR white paper on MR safety. *American Journal of Roentgenology*, 178(6), 1335–1347. https://doi.org/10.2214/ajr.178.6.1781335
38. Kidwell, C. S., Chalela, J. A., Saver, J. L., Starkman, S., Hill, M. D., Demchuk, A. M., Butman, J. A., Patronas, N., Alger, J. R., Latour, L. L., Luby, M. L., Baird, A. E., Leary, M. C., Tremwel, M., Ovbiagele, B., Fredieu, A., Suzuki, S., Villablanca, J. P., Davis, S., Dunn, B., … Warach, S.. (2004). Comparison of MRI and CT for detection of acute intracerebral hemorrhage. *JAMA*, 292(15), 1823–1830.
39. Kubal, W. S. (2012). Updated imaging of traumatic brain injury. Radiologic Clinics of North America, 50(1), 15.
40. Louis, M., Travieso, R., Oles, N., & Coon, D. (2021). Narrative review of facial gender surgery. *Annals of Translational Medicine*, 9(7), 606. https://doi.org/10.21037/atm-20-6432
41. Magnani, M., Rustici, A., Zoli, M., Tuleasca, C., Chaurasia, B., Franceschi, E., Tonon, C., Lodi, R., & Conti, A. (2024). Connectome-Based Neurosurgery in Primary Intra-Axial Neoplasms: Beyond the Traditional Modular Conception of Brain Architecture for the Preservation of Major Neurological Domains and Higher-Order Cognitive Functions. Life (Basel, Switzerland), 14(1), 136. https://doi.org/10.3390/life14010136
42. Pasternak, J. J., & Abcejo, A. S. (2020). Anesthesia and the brain after concussion. *Current Opinion in Anesthesiology,* 33, 639–645. https://doi.org/10.1097/ACO.0000000000000906
43. Policeni, B. A., Smoker, W. R. K., Corey, A. S., Burns, J., Kennedy, T. A., & Expert Panel on Neurologic Imaging. (2018). ACR Appropriateness Criteria®: Orbits, vision, and visual loss. *Journal of the American College of Radiology,* 15(5S), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
44. Raffaini, M., Perello, R., Tremolada, C., & Agostini, T. (2019). Evolution of full facial feminization surgery. *Journal of Craniofacial Surgery,* 30(5), 1419–1424. https://doi.org/10.1097/SCS.0000000000005221
45. Shellock, F. G., et al. (2013). ACR guidance document on MR safe practices: 2013. *Journal of Magnetic Resonance Imaging*, 37(3), 501–530. https://doi.org/10.1002/jmri.24011
46. Shosha, E., Dubey, D., Palace, J.,Nakashima, I., Jacob, A., Fujihara, K., Takahashi, T., Whittam, D., Leite, M. I., Misu, T., Yoshiki, T., Messina, S., Elsone, L., Majed, M., Flanagan, E., Gadoth, A., Huebert, C., Sagen, J., Greenberg, B. M., Levy, M., … Pittock, S. J . (2018). Area postrema syndrome. *Neurology*, 91(17). https://doi.org/10.1212/WNL.0000000000006392
47. Singh, P., Yoon, S. S., & Kuo, B. (2015). Nausea: A review of pathophysiology and therapeutics. Therapeutic *Advances in Gastroenterology*, 9(1), 98–112. https://doi.org/10.1177/1756283X15618131
48. Spiegel, J. H. (2019). Facial feminization for the transgender patient. *Journal of Craniofacial Surgery*, 30(5), 1399–1402. https://doi.org/10.1097/SCS.0000000000005645
49. Spiegel, J. H. (2020). Gender-affirming and aesthetic cranioplasty. *Current Opinion in Otolaryngology & Head and Neck Surgery,* 28, 201–205. https://doi.org/10.1097/MOO.0000000000000640
50. Tillema, J.-M. (2023). Imaging of central nervous system demyelinating disorders. *Continuum,* 29(1), 292–323. https://doi.org/10.1212/CON.0000000000001246

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Taste and Smell Disorders (HD-2)

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Taste and Smell Disorders (HD-2.1)

HD.TS.0002.1.A
v1.0.2027

Criteria

- MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) **AND/OR** MRI Orbit/Face/Neck without contrast (CPT® 70540) or MRI Orbit/Face/Neck without and with contrast (CPT® 70543) is considered medically necessary with unexplained unilateral or bilateral anosmia (inability to perceive odor) or dysgeusia (complete or partial loss of taste)
- CT Maxillofacial (CPT® 70486, CPT® 70487 or CPT® 70488) is considered medically necessary initially if sinus or facial bone disorders are suspected
- For individuals who test positive for SARS-CoV-2 (see: **Neuro-COVID-19 and Sars-CoV-2 Vaccines (HD-14.2)** and **Stroke/TIA (HD-21.1)**)

Evidence Discussion (HD-2.1)

Initial imaging of the olfactory nerve and pathway for unexplained unilateral or bilateral anosmia or for dysgeusia should utilize MRI brain and/or MRI orbits, face and neck (ACR, 2022; ACR, 2024). These imaging studies are supported by clinical evidence for the identification and characterization of a potential cranial nerve lesion (ACR, 2022; ACR, 2024). CT of the sinuses and face may be superior to identify fractures, inflammatory sinus disease, and other bony lesions in some cases (ACR, 2022).

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References (HD-2)

v1.0.2027

1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS
2. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
3. DeVere, R. (2017). Disorders of taste and smell. *Continuum: Lifelong Learning in Neurology*, 23(2), 421–446. https://doi.org/10.1212/CON.0000000000000463
4. Expert Panel on Neurological Imaging, Rath, T. J., Policeni, B., Juliano, A. F., Agarwal, M., Block, A. M., Burns, J., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., Zander, D., & Corey, A. S. (2022). ACR Appropriateness Criteria® cranial neuropathy: 2022 update. *Journal of the American College of Radiology*, 19(11, Suppl.), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
5. Politi, L. S., Salsano, E., & Grimaldi, M. (2020). Magnetic resonance imaging alteration of the brain in a patient with coronavirus disease 2019 (COVID-19) and anosmia. *JAMA Neurology*. https://doi.org/10.1001/jamaneurol.2020.2125
6. Soler, Z. M., Patel, Z. M., Turner, J. H., & Holbrook, E. H. (2020). A primer on viral-associated olfactory loss in the era of COVID-19. *International Forum of Allergy & Rhinology*, 10(7), 814–820. https://doi.org/10.1002/alr.22578

Ataxia (HD-3)

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Ataxia (HD-3.1)

HD.AX.0003.1.A
v1.0.2027

Criteria

- Common manifestations include poor coordination, an abnormal (including wide-based) gait, abnormal finger to nose testing, abnormal rapid alternating movements, abnormal eye movements, and/or difficulty with navigation of stairs and around corners.
- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is considered medically necessary in all individuals with ataxia:
  - MRI Cervical without contrast or without and with contrast (CPT® 72141 or CPT® 72156) **AND/OR** MRI Thoracic without contrast or without and with contrast (CPT® 72146 or CPT® 72157) **AND/OR** MRI Lumbar Spine without contrast or without and with contrast (CPT® 72148 or CPT® 72158) may be added if spinal disease is suspected
  - If these symptoms are acute and stroke is suspected, see **Stroke/TIA (HD-21.1)**
  - If MS is suspected, see **Multiple Sclerosis (MS) (HD-16.1)**
  - CT Head without contrast (CPT® 70450) **AND/OR** CT Orbit/Temporal Bone without contrast (CPT® 70480) is considered medically necessary in addition if these symptoms are acute following head trauma, (see also: **Head Trauma (HD-13.1)**)
- If brain tumor is suspected, see **Primary Central Nervous System Tumors (ONC-2.1)** in the Oncology Imaging Guidelines.
- For suspected Normal Pressure Hydrocephalus, see **Normal Pressure Hydrocephalus (NPH) (HD-8.4)**

Background and Supporting Information

- In general, MRI is preferred over CT, unless there is a history of acute trauma or contraindication to MRI. For all other causes, MRI provides better visualization of the cerebellum and posterior fossa.

Evidence Discussion (HD-3.1)

- MRI Brain is the preferred initial imaging modality for evaluation of ataxia when a central nervous system cause is suspected (Wang et al., 2023; ACR 2024). MRI of the spinal cord, to include the cervical and thoracic spine, may also be added if clinically indicated (Wang 2023 et al.; Expert Panel on Neurologic Imaging, 2019).
- CT head is not recommended for the initial evaluation of non-traumatic ataxia due to inferior soft tissue resolution when compared to MRI Brain. In addition, MRI Brain

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provides better visualization of the cerebellum and posterior fossa and is more sensitive for the detection of posterior fossa infarcts (Wang et al., 2023)

- In general, MRI is preferred over CT, unless there is a history of acute trauma or a contraindication to MRI (Wang et al., 2023).

Head Imaging Guidelines

References (HD-3)

v1.0.2027

1. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
2. Ashizawa, T., & Xia, G. (2016). Ataxia. *Continuum: Lifelong Learning in Neurology*, 22(4), 1208–1226. https://doi.org/10.1212/CON.0000000000000362
3. Expert Panel on Neurologic Imaging, Juliano, A. F., Policeni, B., Agarwal, V., Burns, J., Bykowski, J., Harvey, H. B., Hoang, J. K., Hunt, C. H., Kennedy, T. A., Moonis, G., Pannell, J. S., Parsons, M. S., Powers, W. J., Rosenow, J. M., Schroeder, J. W., Slavin, K., Whitehead, M. T., & Corey, A. S. (2019). ACR Appropriateness Criteria® ataxia. *Journal of the American College of Radiology*, 16(5, Suppl.), S44–S56. https://doi.org/10.1016/j.jacr.2019.02.021
4. Graff-Radford, N. R., & Jones, D. T. (2019). Normal pressure hydrocephalus. *Continuum: Lifelong Learning in Neurology*, 25(1), 165–186. https://doi.org/10.1212/CON.0000000000000689
5. Wang, L. L., Thompson, T. A., Shih, R. Y., Ajam, A. A., Bulsara, K., Burns, J., Davis, M. A., Ivanidze, J., Kalnins, A., Kuo, P. H., Ledbetter, L. N., Pannell, J. S., Pollock, J. M., Shakkottai, V. G., Shih, R. D., Soares, B. P., Soderlund, K. A., Utukuri, P. S., Woolsey, S., & Policeni, B. (2024). ACR Appropriateness Criteria® dizziness and ataxia: 2023 update. *Journal of the American College of Radiology,* 21(6, Suppl.), S100–S125. https://doi.org/10.1016/j.jacr.2024.02.018

Mental Health Disorders and Mental Status Change (HD-4)

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Autism Spectrum Disorders (HD-4.0)

HD.BD.0004.0.A
v1.0.2027

Criteria

- This group of diagnoses, including Asperger syndrome, is classified as pervasive development disorders (PDD). These diagnoses are established on clinical criteria, and no imaging study can confirm the diagnosis.
- Comprehensive evaluation for autism might include history, physical exam, audiology evaluation, speech, language, and communication assessment, cognitive and behavioral assessments, and academic assessment.
  - MRI Brain without and with contrast (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551) is considered medically necessary for **ANY** of the following:
    - New or worsening cognitive decline or focal neurologic findings documented on a pertinent physical
  - PET imaging is considered not medically necessary in the evaluation of individuals with autism spectrum disorders.

Evidence Discussion (HD-4.0)

- While the diagnosis of Autism Spectrum Disorder is based on behavioral signs and symptoms, MRI Brain without and with contrast is medically necessary for new or worsening focal neurological findings and/or loss of developmental milestones and/or regression. In these clinical situations, advanced imaging may be used to adjust an individual's treatment plan, without which their development may continue to regress (Baker & Jeste, 2015).
- PET is considered not currently considered medically necessary in the evaluation of individuals with autism spectrum disorder. PET imaging in this scenario would unnecessarily expose individuals to radiation and provide no clinical utility related to autism spectrum disorder (Zürcher et al., 2015).

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Mental Health Related Disorders (HD-4.1)

HD.BD.0004.1.A
v1.0.2027

Criteria

- Mental health diagnoses, including Attention Deficit Hyperactivity Disorder (ADHD), do not routinely require advanced imaging.
- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) **OR** CT Head without contrast (CPT® 70450) is considered medically necessary for the exceptions listed below:
  - Acute mental status change, disturbance in consciousness or arousal state
  - Psychotic disorders (including schizophrenia), bipolar disorder and related disorders in the following clinical presentations:
    - Acute psychosis
    - Late onset over age 40
    - Presentation of acute psychiatric symptoms with comorbid serious medical illness
    - Non-auditory hallucinations (e.g., visual, tactile, olfactory) with no known etiology
    - Nonresponse to adequate medication trials
    - Symptoms of an organic brain disorder (e.g., focal deficits, severe headache, or seizures)
- Prior to electroconvulsive therapy (ECT) treatment, the following are considered medically necessary to screen for intracranial disease: MRI Brain without contrast (CPT® 70551) **OR** CT Head without contrast (CPT® 70450)
- Deep Brain Stimulation Therapy for psychiatric disorders is considered not medically necessary, except for medically refractory Obsessive Compulsive Disorder (OCD).
  - Medically necessary imaging prior to Deep Brain Stimulation (DBS) therapy for medically refractory Obsessive Compulsive Disorder (OCD):
    - MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) **AND/OR** unlisted CT procedure code (CPT® 76497)

Evidence Discussion (HD-4.1)

- There is no role for advanced imaging in mental health workup (including ADHD). Unnecessary imaging has detrimental effects in that it provides no positive impact on outcomes/management and does expose individuals to unnecessary radiation, contrast, and financial strain.

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- It would be appropriate to utilize Advanced imaging (CT or MRI) in the following conditions:
  - Acute mental status change, disturbance in consciousness or arousal state (Soares et al., 2024).
  - Psychiatric disorders with the following clinical presentations (Soares et al., 2024):
    - Acute psychosis
    - Late onset over age 40
    - Presentation of acute psychiatric symptoms with comorbid serious medical illness
    - Non-auditory hallucinations of unknown etiology
    - Nonresponse to adequate medication trials
    - Symptoms of an organic brain disorder (e.g., focal deficits, severe headache, or seizures)
- Advanced imaging may be considered medically necessary for electroconvulsive therapy clearance and prior to deep brain stimulation for medically refractory obsessive compulsive disorder (Staudt et al., 2021).

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Mental Status Change (HD-4.2)

HD.BD.0004.2.A
v1.0.2027

Criteria

After a detailed history, which includes onset, duration, and timeframe (i.e., constant vs intermittent) **AND** bedside neurologic exam that includes a mental status evaluation providing a description of the level of alertness, other characteristics and/or cognitive testing, the following are considered medically necessary:

Indication	Medically Necessary Imaging
Acute, subacute, or worsening mental status change, initial or repeat imaging	• CT Head without contrast (CPT® 70450) **OR** • If setting is urgent, CT Head contrast as requested (CPT® 70450 OR CPT® 70460 OR CPT® 70470) **OR** • If MRI is contraindicated, CT Head contrast as requested (CPT® 70450 OR CPT® 70460 OR CPT® 70470) • *CT Head permitted even with prior MRI Brain imaging* **OR** • MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) • *MRI Brain permitted even with prior head CT imaging*

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Indication	Medically Necessary Imaging
Additional imaging may be considered medically necessary as listed below : • Sudden language, focal motor, or sensory deficit – **Stroke/TIA (HD-21.1)** • Headache – **Headaches with Red Flags (HD-11.2)** • Hypertensive urgency – **Stroke/TIA (HD-21.1)** and **Sudden Onset of Headache (HD-11.3)** • Fever/tachycardia, possible meningitis, or other CNS infection – **CNS and Head Infection (HD-14.1)** • COVID-19 – **Neuro-COVID-19 and Sars-CoV-2 Vaccines (HD-14.2)** • Coagulopathy or anticoagulant use- **Abnormal Blood Clotting (HD-11.9)** • Pregnancy or post-partum – **Pregnancy (HD-11.10)** • Known malignancy – **Low Grade Gliomas (ONC-2.2)**, **High Grade Gliomas (ONC-2.3)** and **Brain Metastases (ONC-31.3)** • Trauma- **Head Trauma (HD-13.1)** • Non-auditory hallucinations – **Mental Health Related Disorders (HD-4.1)** • Suspected increased intracranial pressure – **Papilledema/Pseudotumor Cerebri (HD-17.1)** and **Hydrocephalus Shunts (HD-11.14)** • Seizure/suspected seizure – **Epilepsy/ Seizures (HD-9.1)**	*See relevant guideline

Background and Supporting Information

This section refers to acute/subacute mental status change, which generally involves signs and symptoms which begin over minutes to days, and includes changes in behavior and alertness, agitation, and/or confusion – as opposed to chronic, progressive cognitive decline, as in dementia.

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Acute mental status change or encephalopathy is characterized by changes in behavior or alertness, agitation, confusion, as opposed to chronic, progressive cognitive decline, such as dementia-related disorders.

Delirium and psychosis are defined as follows:

- Delirium is a disorder of acute onset involving deficits in attention, awareness, and cognition that fluctuate in severity over time. These are often associated with psychomotor disturbance, altered sleep cycle, and emotional variability. These disturbances may be hyperactive (restlessness, agitation) or hypoactive (psychomotor retardation, lethargy) and there may be accompanying fever and/or autonomic symptoms (tachycardia, sweating), depending on the underlying cause.
- Psychosis is a disorder of impaired reality, characterized by hallucinations, delusions, or both, without insight into their pathologic nature. It may be associated with disorganized behavior, thought blocking, illogicality, tangentiality, perseveration, and/or neologisms.

The purpose of the initial assessment is to characterize the etiology. This may include toxic/metabolic (e.g., hypoglycemic, drug exposures), structural (e.g., trauma, stroke, hypoxic-ischemic, hydrocephalus, tumor), paroxysmal (e.g., seizure, psychiatric), and inflammatory (e.g., infectious, autoimmune).

Of note, even a seemingly mild, reversible brain insult superimposed upon a chronic pathophysiologic process may cause a sudden mental status change, and head imaging may or may not be necessary, depending on the provider's pre-test suspicion of a significant new diagnosis.

Vagal Nerve Stimulators (VNS), which are FDA approved for treatment of depression, are included among potential treatments, which also include medication trials.

Evidence Discussion (HD-4.2)

- Altered mental status (AMS) is not a diagnosis, but rather a term for symptoms of acute or chronic disordered mentation, including memory impairment, confusion, disorientation, lethargy, drowsiness, somnolence, unresponsiveness, agitation, altered behavior, inattention, hallucinations, delusions, and psychosis (Soares et al., 2024).
- Advanced brain imaging is supported for acute onset of mental status change, or worsening symptoms in the setting of a known intracranial process with MRI Brain with or without a previous CT Head (Uzelac, 2020).
- Advanced imaging supported for mental status change with precipitating factors including suspected seizure, COVID-related symptoms, head trauma, stroke, mass, or known malignancy, suspected increased intracranial pressure, intracranial infection, hypertensive emergency, presence of coagulopathy, pregnancy and postpartum period, associated headache (Soares et al., 2024).

- According to the ACR, advantages of MRI for altered mental state include: 1) higher sensitivity for detection of ischemia, encephalitis, subtle cases of subarachnoid hemorrhage (SAH); and 2) enhancement of pathology compared with CT. The disadvantages of MRI in this clinical scenario are the same as with MRI in general, including individual inconvenience (longer examination time), imaging quality is susceptible to individuals' movements, and implanted devices that are not MRI safe (Soares et al., 2024).

Head Imaging Guidelines

References (HD-4)

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1. Ali, S. A., Mathur, N., Malhotra, A. K., & Braga, R. J. (2019). Electroconvulsive therapy and schizophrenia: A systematic review. *Molecular Neuropsychiatry*, 5(2), 75–83. https://doi.org/10.1159/000497376
2. Andrea, S., Papirny, M., & Raedler, T. (2019). Brain imaging in adolescents and young adults with first-episode psychosis. *The Journal of Clinical Psychiatry*, 80(6). https://doi.org/10.4088/JCP.18m12665
3. Baker, E., & Jeste, S. S. (2015). Diagnosis and management of autism spectrum disorder in the era of genomics. *Pediatric Clinics of North America*, 62(3), 607–618. https://doi.org/10.1016/j.pcl.2015.03.003
4. Expert Panel on MR Safety, Kanal, E., Barkovich, A. J., Bell, C., Borgstede, J. P., Bradley, W. G., Froelich, J. W., Gimbel, J. R., Gosbee, J. W., Kuhni-Kaminski, E., Larson, P. A., Lester, J. W., Nyenhuis, J. A., Schaefer, D. J., Sebek, S. J., Weinreb, J. C., & Wilkoff, B. L. (2013). ACR guidance document on MR safe practices: 2013. *Journal of Magnetic Resonance Imaging*, 37(3), 501–530. https://doi.org/10.1002/jmri.24011
5. Julayanont, P., & Suryadevara, U. (2021). Psychosis. *Continuum: Lifelong Learning in Neurology*, 27(6), 1682–1711. https://doi.org/10.1212/CON.0000000000001013
6. Keepers, G. A. (Ed.). (2021). The American Psychiatric Association practice guideline for the treatment of patients with schizophrenia (3rd ed.). American Psychiatric Association.
7. Pereira-Sanchez, V., & Castellanos, F. X. (2021). Neuroimaging in attention-deficit/hyperactivity disorder. *Current Opinion in Psychiatry*, 34(2), 105–111. https://doi.org/10.1097/YCO.0000000000000669
8. Rapinesi, C., Kotzalidis, G. D., Ferracuti, S., Sani, G., Girardi, P., & Del#Casale, A. (2019). Brain stimulation in obsessive-compulsive disorder (OCD): A systematic review. *Current Neuropharmacology*, 17(8), 787–807. https://doi.org/10.2174/1570159X17666190409142555
9. Soares, B. P., Shih, R. Y., Utukuri, P. S., Soares, B. P., Wang, L. L., Shih, R. Y., Ajam, A. A., Bulsara, K., Burns, J., Davis, M. A., Ivanidze, J., Kalnins, A., Kuo, P. H., Ledbetter, L. N., Pannell, J. S., Pollock, J. M., Shakkottai, V. G., Shih, R. D., Soderlund, K. A., Utukuri, P. S., Woolsey, S., & Policeni, B. (2024). ACR Appropriateness Criteria® altered mental status, coma, delirium, and psychosis. *American College of Radiology*. https://acsearch.acr.org/docs/3102409/Narrative/
10. Staudt, M. D., Pouratian, N., Miller, J. P., Alterman, R. L., Baltuch, G. H., Eskandar, E. N., Greenberg, B. D., Rezai, A. R., Sheth, S. A., & Congress of Neurological Surgeons. (2021). Congress of Neurological Surgeons systematic review and evidence-based guidelines for deep brain stimulation for obsessive-compulsive disorder: Update of the 2014 guidelines. *Neurosurgery*, 88(4), 710–712. https://doi.org/10.1093/neuros/nyaa596
11. Uzelac, A. (2020). Imaging of altered mental status. *Radiologic Clinics of North America*, 58(1), 187–197. https://doi.org/10.1016/j.rcl.2019.08.002
12. Zürcher, N. R., Bhanot, A., McDougle, C. J., & Hooker, J. M. (2015). A systematic review of molecular imaging (PET and SPECT) in autism spectrum disorder: Current state and future research opportunities. *Neuroscience & Biobehavioral Reviews*, 52, 56–73. https://doi.org/10.1016/j.neubiorev.2015.02.002

Chiari and Skull-Base Malformations (HD-5)

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Chiari Malformations (HD-5.1)

HD.CM.0005.1.A
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Criteria

Indication	Medically Necessary Imaging
Initial evaluation for suspected or known Chiari malformations	• MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRI Cervical Spine without contrast (CPT® 72141) or MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) or MRI Thoracic Spine without and with contrast (CPT® 72157) **AND/OR** • MRI Lumbar Spine without contrast (CPT® 72148) or MRI Lumbar Spine without and with contrast (CPT® 72158)
Repeat imaging for one of the following: • New or worsening signs or symptoms • Surgical procedure is actively being considered • At the discretion of or in consultation with a neurologist and/or neurosurgeon coordinating the individual's care	• MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRI Cervical Spine without contrast (CPT® 72141) or MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) or MRI Thoracic Spine without and with contrast (CPT® 72157) **AND/OR** • MRI Lumbar Spine without contrast (CPT® 72148) or MRI Lumbar Spine without and with contrast (CPT® 72158)

- Familial screening is considered NOT medically necessary for Chiari Malformations.
- For CSF flow imaging, see **CSF Flow Imaging (HD-24.4)**
- For CT head imaging indications, see **General Guidelines CT Head (HD-1.4)**.

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Background and Supporting Information

Chiari I malformations involve caudal displacement or herniation of the cerebellar tonsils. Chiari I may be associated with syringomyelia and rarely with hydrocephalus. Most cases are asymptomatic and discovered incidentally on a head scan performed for another indication. When symptoms are present, they are usually nonspecific but can include headache, lower cranial nerve palsies, or sleep apnea.

Chiari II malformations are more severe than Chiari I malformations. These individuals usually present at birth. Myelomeningocele is always present, and syringomyelia and hydrocephalus are extremely common.

Chiari III malformations include cerebellar herniation into a high cervical myelomeningocele. Chiari IV malformation refers to complete cerebellar agenesis. Both Chiari III and IV malformations are noted at birth and are rarely compatible with life.

Repeat brain and spine imaging in individuals with Chiari I malformations and known syringomyelia or hydromyelia is highly individualized.

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Chiari II Malformations (Arnold Chiari Malformation) (HD-5.2)

HD.CM.0005.2.A
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- See **Chiari Malformations (HD-5.1)**

Head Imaging Guidelines

Chiari III and IV Malformations (HD-5.3)

HD.CM.0005.3.A
v1.0.2027

- See **Chiari Malformations (HD-5.1)**

Head Imaging Guidelines

Basilar Impression/Basilar Invagination (HD-5.4)

HD.CM.0005.4.A
v1.0.2027

Criteria

Medically necessary imaging for suspected or known Basilar Impression or Basilar Invagination:

- MRI Brain without contrast (CPT® 70551) **AND/OR** MRI Cervical Spine without contrast (CPT® 72141)
- If surgery is being considered, CT Head (CPT® 70450) **AND/OR** CT Cervical Spine (CPT® 72125) without contrast are also considered medically necessary **AND/OR** MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** CTA Head (CPT® 70496) **AND/OR** MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR** CTA Neck (CPT® 70498)
  - CTA Head and Neck (CPT® 70471) must be substituted for CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) when performed during the same session.
- One-time screening of first-degree relatives with MRI Brain without contrast (CPT® 70551) is considered medically necessary.

Background and Supporting Information

Basilar impression involves malformation of the occipital bone in relation to C1-2 (cervical vertebrae 1 and 2). The top of the spinal cord is inside the posterior fossa and the foramen magnum is undersized. Over time, this can lead to brain stem and upper spinal cord compression. Basilar impression can also be associated with the Chiari malformation, producing very complex anatomical abnormalities.

Basilar invagination is an abnormality at the craniovertebral junction, either congenital or degenerative, resulting in the odontoid prolapsing into the already limited space of the foramen magnum. It is commonly associated with conditions such as Chiari malformation, syringomyelia, and Klippel-Feil syndrome (Brito et al., 2019).

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Platybasia (HD-5.5)

HD.CM.0005.5.A
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Criteria

Medically necessary imaging indications for suspected or known Platybasia:

- MRI Brain without contrast (CPT®70551) or CT Head without contrast (CPT®70450)
- If surgery is being considered,
  - CT Head (CPT®70450) **AND/OR**
  - CT Cervical Spine (CPT®72125) **AND/OR**
  - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR**
  - CTA Head (CPT® 70496) **AND/OR**
  - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR**
  - CTA Neck (CPT® 70498)
    - CTA Head and Neck (CPT® 70471) must be substituted when CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed during the same session.

Background and Supporting Information

Platybasia is a flattening malformation of the skull base, in which the clivus has a horizontal orientation.

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Evidence Discussion (HD-5)

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- A CT scan of the head is less sensitive than an MRI of the brain for evaluation of intracranial structures, including major structural abnormalities of the posterior fossa (Expert Panel on Pediatric Imaging et al., 2022a; Expert Panel on Neurologic Imaging et al., 2022b).
- Neuroimaging in the initial evaluation of Chiari malformation should include the spinal cord due to the common occurrence or increased frequency of associated conditions such as cervical syrinx and tethered cord (Strahle et al., 2011a; Strahle et al., 2011b; Strahle et al., 2015a; Strahle et al., 2015b; Dantas et al., 2020; Holly & Batzdorf, 2019).
- For initial evaluation, treatment planning, and follow up, MRI is the preferred modality for malformations of the brain and cervicocranial junction (Smoker & Khanna, 2008; Expert Panel on Pediatric Imaging, 2022; Expert Panel on Neurologic Imaging, 2022; Expert Panel on Pediatric Imaging, 2018). MRI is ideal for evaluating soft tissues, neural structures, and ligaments (Smoker & Khanna, 2008; Pinter 2016).
- As congenital brainstem and cerebellar anomalies are associated with spinal anomalies, MRI of the complete spine is helpful for diagnosis, follow up, and treatment planning (Strahle et al., 2011a;, Strahle et al., 2011b; Strahle et al., 2015a; Strahle et al.,2015b; Expert Panel on Pediatric Imaging et al., 2022).
- A phase-contrast CSF flow study at the craniocervical junction is a supportive study for evaluation of Chiari malformation (Vicotiro & Khoury, 2016; Expert Panel on Pediatric Imaging et al.,2018).
- Evaluation of cervicojunction anomalies, including basilar invagination and platybasia, may require more than one modality for diagnosis and surgical planning (Smoker & Khanna, 2008; Brito et al., 2019; Pinter et al., 2016). CT characterizes osseous anatomy and may be helpful for surgical planning (Smoker & Khanna, 2008; Pinter et al., 2016). MRI is preferred for evaluation of the soft tissues, neural structures, and ligaments for these conditions (Smoker & Khanna, 2008; Pinter et al., 2016). As craniocervical junction anomalies may lead to compression of adjacent vascular structures, CT- or MR-Angiography of the head and neck are useful for surgical planning (Pinter et al., 2016).

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References (HD-5)

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1. American Medical Association. (2026). CPT®—Current procedural terminology (1995–2026 ed.). American Medical Association.
2. Brito, J. N. P. O., Santos, B. A. D., Nascimento, I. F., Martins, L. A., & Tavares, C. B. (2019). Basilar invagination associated with Chiari malformation type I: A literature review. *Clinics* (São Paulo), 74, e653. https://doi.org/10.6061/clinics/2019/e653
3. Dantas, F. L. R., Dantas, F., Caires, A. C., & Botelho, R. V. (2020). Natural history and conservative treatment options in Chiari malformation type I in adults: A literature update. *Cureus*, 12(12), e12050. https://doi.org/10.7759/cureus.12050
4. Expert Panel on Neurologic Imaging, Pallavi, S., Utukuri, M. D., Shih, R. Y., Ajam, A. A., Burns, J., Davis, M. A., Ivanidze, J., Kalnins, A., Kuo, P. H., Ledbetter, L. N., Pannell, J. S., Pollock, J. M., Shakkottai, V. G., Shih, R. D., Soares, B. P., Soderlund, K. A., Woolsey, S., & Policeni, B. (2022b). ACR Appropriateness Criteria® headache. *American College of Radiology.* https://acsearch.acr.org/docs/69482/Narrative/
5. Expert Panel on Pediatric Imaging, Hayes, L. L., Palasis, S., Karmazyn, B. K., Anupindi, S. A., Darge, K., Iyer, R. S., Khwaja, A., Narayanan, S., Pruthi, S., Swanson, J. O., Towbin, A. J., Wills, C. J., & Corey, A. S. (2018). ACR Appropriateness Criteria® headache—Child. J*ournal of the American College of Radiology*, 15(5, Suppl.), S78–S90. https://doi.org/10.1016/j.jacr.2018.03.017
6. Expert Panel on Pediatric Imaging, Radhakrishnan, R., Shea, L. A. G., Aulino, J. M., Burns, J., Darge, K., Iyer, R. S., Karmazyn, B. K., Khwaja, A., Palasis, S., Pruthi, S., Swanson, J. O., Towbin, A. J., & Corey, A. S. (2022a). ACR Appropriateness Criteria® ataxia—Child. Journal of the American College of Radiology, 19(11, Suppl.), S240–S255. https://doi.org/10.1016/j.jacr.2022.09.010
7. Holly, L. T., & Batzdorf, U. (2019). Chiari malformation and syringomyelia. *Journal of Neurosurgery: Spine*, 31(5), 619–628. https://doi.org/10.3171/2019.7.SPINE181139
8. Kinsman, S. L., & Johnston, M. V. (2020). Congenital anomalies of the central nervous system. In R. M. Kliegman, J. W. St. Geme III, N. J. Blum, S. S. Shah, R. C. Tasker, & K. M. Wilson (Eds.), Nelson textbook of pediatrics (21st ed., pp. 3063–3082). Elsevier.
9. Kliegman, J. W. St. Geme III, N. J. Blum, S. S. Shah, R. C. Tasker, & K. M. Wilson (Eds.), Nelson textbook of pediatrics (21st ed., pp. 3063–3082). Elsevier.
10. Pinter, N. K., McVige, J., & Mechtler, L. (2016). Basilar invagination, basilar impression, and platybasia: Clinical and imaging aspects. *Current Pain and Headache Reports*, 20(8), 49. https://doi.org/10.1007/s11916-016-0580-x
11. Radic, J. A. E., & Cochrane, D. D. (2018). Choosing Wisely Canada: Pediatric neurosurgery recommendations. *Paediatrics & Child Health*, 23(6), 383–387. https://doi.org/10.1093/pch/pxy012
12. Rosenblum, J. S., Pomeraniec, I. J., & Heiss, J. D. (2022). Chiari malformation (update on diagnosis and treatment). *Neurologic Clinics*, 40(2), 297–307. https://doi.org/10.1016/j.ncl.2021.11.007
13. Smoker, W. R. K., & Khanna, G. (2008). Imaging the craniocervical junction. *Child's Nervous System*, 24(10), 1123–1145. https://doi.org/10.1007/s00381-008-0639-0
14. Strahle, J., Muraszko, K. M., Kapurch, J., Bapuraj, J. R., Garton, H. J. L., & Maher, C. O. (2011a). Chiari malformation type I and syrinx in children undergoing magnetic resonance imaging. *Journal of Neurosurgery: Pediatrics*, 8(2), 205–213. https://doi.org/10.3171/2011.5.PEDS1121
15. Strahle, J., Muraszko, K. M., Kapurch, J., Bapuraj, J. R., Garton, H. J. L., & Maher, C. O. (2011b). Natural history of Chiari malformation type I following decision for conservative treatment. *Journal of Neurosurgery: Pediatrics*, 8(2), 214–221. https://doi.org/10.3171/2011.5.PEDS1122
16. Strahle, J., Muraszko, K. M., Garton, H. J. L., Smith, B. W., Starr, J., Kapurch, J. R., & Maher, C. O. (2015a). Syrinx location and size according to etiology: Identification of Chiari-associated syrinx. *Journal of Neurosurgery: Pediatrics,* 16(1), 21–29. https://doi.org/10.3171/2014.12.PEDS14463
17. Strahle, J., Smith, B. W., Martinez, M., Bapuraj, J. R., Muraszko, K. M., Garton, H. J. L., & Maher, C. O. (2015b). The association between Chiari malformation type I, spinal syrinx, and scoliosis. *Journal of Neurosurgery: Pediatrics,* 15(6), 607–611. https://doi.org/10.3171/2014.11.PEDS14135

18. Victorio, M. C., & Khoury, C. K. (2016). Headache and Chiari I malformation in children and adolescents. *Seminars in Pediatric Neurology*, 23(1), 35–39. https://doi.org/10.1016/j.spen.2016.01.005
19. Strahle J, Muraszko KM, Kapurch J, et al. Chiari malformation Type I and syrinx in children undergoing magnetic resonance imaging. *J Neurosurg Pediatr*. 2011 Aug; 8 (2): 205-213
20. Strahle J, Muraszko KM, Kapurch J, et al. Natural history of Chiari malformation Type I following decision for conservative treatment. *J Neurosurg Pediatr.* 2011 Aug; 8 (2): 214-221
21. Strahle J, Muraszko KM, Garton HJL, et al. Syrinx location and size according to etiology: identification of Chiari-associated syrinx. *J Neurosurg Pediatr*. 2015 July; 16 (1): 21-9 Epub 2015 Apr 3
22. Strahle J, Smith BW, Martinez M, et al. The association between Chiari malformation Type I, spinal syrinx, and scoliosis. *J Neurosurg Pediatr*. 2015 Jun; 15 (6): 607-611
23. Victorio MC, Khoury CK. Headache and Chiari I Malformation in Children and Adolescents. *Seminars in Pediatric Neurology*. 2016;23(1):35-39

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Facial Palsy (Bell's Palsy)/Hemifacial Spasm (HD-6)

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Facial Palsy (HD-6.1)

HD.FP.0006.1.A
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Criteria

- MRI Brain without contrast (CPT® 70551) (with attention to posterior fossa and IACs) or MRI Brain without and with contrast (CPT® 70553) (with attention to posterior fossa and IACs) **AND/OR** MRI Orbit/Face/Neck without contrast (CPT® 70540) or MRI Orbit/Face/Neck without and with contrast (CPT® 70543) is/are considered medically necessary when unexplained facial paresis/paralysis is associated with any of the following "red flag" clinical scenarios:
  - Trauma to the temporal bone
  - History of tumor, cancer, HIV, or Lyme disease
  - No improvement in 8 weeks
  - No full recovery in 3 months
  - Gradual onset over weeks to months
  - Vertigo or hearing loss
  - Bilateral involvement
  - Other atypical or inconsistent features including:
    - Second episode of paralysis on the same side
    - Paralysis of isolated branches of the facial nerve
    - Paralysis associated with other cranial nerves
- MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for known sarcoidosis with suspected neurosarcoid or CNS involvement is supported, (see also **Autoimmune/ Paraneoplastic Encephalitis & NeuroInflammatory Disorders (HD-14.3)**)
- CT Orbit/Temporal Bone without contrast (CPT® 70480) is considered medically necessary, in the presence of "red flags", to assess osseous integrity of the temporal bone, to characterize fractures, pre-surgical anatomy, inflammatory middle ear disease, bone tumor, facial canal foraminal expansion and/or bone erosion.
- CT Orbit/Temporal Bone with contrast (CPT® 70481) is considered medically necessary, in the presence of "red flags", for suspected tumors and/or infection.
- CT Maxillofacial without contrast (CPT® 70486) is considered medically necessary to assess bony facial nerve canal **OR** with contrast (CPT® 70487) when infection or tumor are suspected, if requested per institutional protocol.
- MRA Head without contrast (CPT® 70544), with contrast (CPT® 70545), or without and with contrast (CPT® 70546) **AND/OR** MRA Neck without contrast (CPT® 70547), with contrast (CPT® 70548), or without and with contrast (CPT® 70549) **OR** CTA Head (CPT® 70496) **AND/OR** CTA Neck (CPT® 70498) **OR** CTA Head and Neck

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(CPT® 70471) (combination code must be used when both CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed during the same session), is/are considered medically necessary for clinically suspected stroke (see **General Guidelines- CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)** and **Stroke/TIA (HD-21.1)**).

Background and Supporting Information

Typical features of Bell's palsy include variable initial ipsilateral temporal and auricular pain before facial weakness, onset over 72 hours, ipsilateral complete facial weakness, and an otherwise normal neurological and systemic examination. There is usually slow improvement over several months. Unless "red flags" are present, imaging is not medically necessary.

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Hemifacial Spasm (HD-6.2)

HD.FP.0006.2.A
v1.0.2027

Criteria

- For hemifacial spasm, facial synkinesis, or blepharospasm, the following are considered medically necessary:
  - MRI Brain without and with contrast (CPT® 70553 OR MRI Brain without contrast (CPT® 70551)
  - Add CTA Head (CPT® 70496) or MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) for consideration of vascular decompression surgical procedure to clarify the vascular anatomy in individuals who have failed conservative medical management
- For tardive dyskinesia, see **Movement Disorders (HD-15.1)**

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Evidence Discussion (HD-6)

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- Facial nerve palsy/Bell's Palsy, commonly referred to as Bell's Palsy, does not routinely require imaging as recommended by the American Academy of Neurology and the American Academy of Otolaryngology Head and Neck Surgery Foundation (Baugh et al., 2013; Expert Panel on Neurological Imaging et al., 2022; Yaltho & Jancovic, 2011; Reich, 2017; Gronseth & Paduga, 2012). Complete recovery typically occurs within 3 to 6 months (Seok et al., 2023).
- When imaging is considered medically necessary, MRI is the preferred modality for evaluating the facial nerve from its origin in the brainstem, through its intracranial and extracranial segments (Expert Panel on Neurological Imaging et al., 2022). This would include imaging of the brain, face or both areas concurrently. (Expert Panel on Neurological Imaging et al. 2022) MRI is useful to exclude structural causes of facial nerve paralysis in the setting of "red flags" (Expert Panel on Neurological Imaging et al., 2022).
- Imaging is reserved for cases with "red flags," which include atypical, recurrent, or persistent cases (Expert Panel on Neurological Imaging et al.,2022; Reich, 2017; Bacorn et al., 2020; Seok et al., 2023). Limiting imaging to those with "red flags" avoids unnecessary radiation exposure, identification of incidental findings, contrast reactions, and unnecessary costs. (Baugh 2013,Induruwa 2019) The risk of limiting imaging includes missing identifiable and treatable causes of facial paralysis. To mitigate this risk, clinical follow up is recommended at 3 months (Baugh et al., 2013).
- MRI has sensitivity ranging from 73% to 100% in detecting peripheral spread of tumor (Expert Panel on Neurological Imaging et al., 2022).
- As the facial nerve courses through the temporal bone, CT temporal bone is useful to identify temporal bone fractures, bony anatomy, bone erosion and for surgical planning (Expert Panel on Neurological Imaging et al., 2022).
- Vascular imaging is helpful if stroke is clinically suspected (Expert Panel on Neurological Imaging et al., 2022).
- For evaluation of hemifacial spasm, MRA allows characterization of vascular loops compressing the facial nerve, with sensitivity >95% and correlates well with surgical findings (Expert Panel on Neurological Imaging et al., 2022; Yaltho & Jankovic, 2011).

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References (HD-6)

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1. American Medical Association. (2026). CPT®—Current procedural terminology (1995–2026 ed.). American Medical Association.
2. Bacorn, C., Fong, N. S. T., & Lin, L. K. (2020). Misdiagnosis of Bell's palsy: Case series and literature review. *Clinical Case Reports*, 8(7), 1185–1191. https://doi.org/10.1002/ccr3.2832
3. Baugh, R. F., Basura, G. J., Ishii, L. E., Schwartz, S. R., Drumheller, C. M., Burkholder, R., Deckard, N. A., Dawson, C., Driscoll, C., Gillespie, M. B., Gurgel, R. K., Halperin, J., Khalid, A. N., Kumar, K. A., Micco, A., Munsell, D., Rosenbaum, S., & Vaughan, W. (2013). Clinical practice guideline: Bell's palsy executive summary. *Otolaryngology–Head and Neck Surgery,* 149(5), 656–663. https://doi.org/10.1177/0194599813506835
4. Expert Panel on Neurological Imaging, Rath, T. J., Policeni, B., Juliano, A. F., Agarwal, M., Block, A. M., Burns, J., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., Zander, D., & Corey, A. S. (2022). ACR Appropriateness Criteria® cranial neuropathy: 2022 update. *Journal of the American College of Radiology*, 19(11, Suppl.), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
5. Gronseth, G. S., & Paduga, R., for the American Academy of Neurology. (2012). Evidence-based guideline update: Steroids and antivirals for Bell palsy—Report of the Guideline Development Subcommittee of the American Academy of Neurology. *Neurology,* 79(22), 2209–2213. https://doi.org/10.1212/WNL.0b013e318275978c
6. Hohman, M. H., & Hadlock, T. A. (2014). Etiology, diagnosis, and management of facial palsy: 2000 patients at a facial nerve center. *The Laryngoscope*, 124, E283–E293. https://doi.org/10.1002/lary.24542
7. Induruwa, I., Holland, N., Gregory, R., & Khadjooi, K. (2019). The impact of misdiagnosing Bell's palsy as acute stroke. Clinical Medicine (London), 19(6), 494–498. https://doi.org/10.7861/clinmed.2019-0123
8. Reich, S. G. (2017). Bell's palsy. *Continuum: Lifelong Learning in Neurology*, 23(2), 447–466. https://doi.org/10.1212/CON.0000000000000447
9. Savary, T., Fieux, M., Douplat, M., Tournegros, R., Daubié, S., Pavie, D., Denoix, L., Pialat, J.-B., & Tringali, S. (2023). Incidence of underlying abnormal findings on routine magnetic resonance imaging for Bell palsy. *JAMA Network Open,* 6(4), e239158. https://doi.org/10.1001/jamanetworkopen.2023.9158
10. Seok, J. I., Park, J. H., Park, J. A., & Do, Y. (2023). Contrast-enhanced MRI findings of patients with acute Bell palsy within 7 days of symptom onset: A retrospective study. *Medicine*, 102(48), e36337. https://doi.org/10.1097/MD.0000000000036337
11. Stern, B. J., Royal, W., Gelfand, J. M., Clifford, D. B., Tavee, J., Pawate, S., Berger, J. R., Aksamit, A. J., Krumholz, A., Pardo, C. A., Moller, D. R., Judson, M. A., Drent, M., & Baughman, R. P. (2018). Definition and consensus diagnostic criteria for neurosarcoidosis. *JAMA Neurology*, 75(12), 1546–1553. https://doi.org/10.1001/jamaneurol.2018.2295
12. Yaltho, T. C., & Jankovic, J. (2011). The many faces of hemifacial spasm: Differential diagnosis of unilateral facial spasms. *Movement Disorders*, 26(9), 1582–1592. https://doi.org/10.1002/mds.23692
13. Yücel, V., Özbal Güneş, S., Keseroğlu, K., Bayır, Ö., Çırakoğlu, M. F., Çadallı Tatar, E., Saylam, G., Karahan, S., Yılmaz, O., & Korkmaz, M. H. (2022). Prognostic and clinical role of contrast enhancement on magnetic resonance imaging in patients with Bell's palsy. *Turkish Archives of Otorhinolaryngology*, 60(2), 80–87. https://doi.org/10.4274/tao.2022.2022-2-14

Recurrent Laryngeal Palsy/Vocal Cord Palsy (HD-7)

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Recurrent Laryngeal Palsy/Vocal Cord Palsy (HD-7.1)

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- See **Recurrent Laryngeal Nerve Palsy in Neck-7.1**

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Mild Cognitive Impairment (MCI) and Dementia (HD-8)

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Mild Cognitive Impairment (MCI) and Dementia - MRI/CT (HD-8.1)

HD.DM.0008.1.A
v1.0.2027

Mild Cognitive Impairment (MCI) Evaluation

Dementia Evaluation

Imaging Related to Alzheimer's Treatment with Amyloid Reduction Medications

Background and Supporting Information

Evidence Discussion (HD-8.1)

Criteria

- For subjective cognitive decline with normal cognitive testing, advanced imaging is considered not medically necessary.

Mild Cognitive Impairment (MCI) Evaluation

Criteria

For the evaluation of memory loss and/or cognitive impairment due to suspected Mild Cognitive Impairment (MCI) when treatment with amyloid reducing medications is not documented.

- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) or CT Head without contrast (CPT® 70450) is considered medically necessary when **ALL** the following criteria are met:
  - A detailed history of cognitive decline with impairments confirmed by family members or others with knowledge of the individual's status

    OR
  - Abnormal mental status test score or neuropsychological test results consistent with mild cognitive impairment/mild neurocognitive disorder
    - Examples of abnormal mental status test results consistent with MCI include neuropsychological testing demonstrating a decline in cognitive function and/or the following test scores:
      - Montreal Cognitive Assessment (MOCA) 19-30 (Rabinovici, 2025)

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- Saint Louis University Mental Status (SLUMS) score for high school education 21-26, for less than high school education 20-24, or
- Mini Mental State Exam (MMSE) 22- 30 (Rabinovici, 2025; Cummings, 2023)

Dementia Evaluation

Criteria

For the evaluation of memory loss and/or cognitive impairment due to suspected dementia when treatment with amyloid reducing medications is not documented.

- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) or CT Head without contrast (CPT® 70450) is considered medically necessary when **ALL** the following criteria are met:
  - A detailed history and neurologic exam including mental status testing should be performed prior to advanced imaging
  - Date of onset of symptoms with documentation of six (6) months of cognitive decline
  - Documentation of a decline in cognitive function obtained with **either**:
    - A detailed history of memory loss with impairment of day-to-day activities confirmed by family members or others with knowledge of the individual's status

      OR
    - Abnormal mental status test score consistent with dementia or neuropsychological test results consistent with dementia/major neurocognitive disorder
      - Examples of abnormal bedside mental status testing scores include:
        - Mini-Mental State Exam (MMSE) less than 26,
        - Montreal Cognitive Assessment (MoCA) less than 26,
        - Memory Impairment Screen (MIS) less than 5,
        - St. Louis University Mental Status (SLUMS) less than 21, or
        - Eight-item Informant Interview to Differentiate Aging and Dementia (AD8) Dementia Score greater than 2
  - Presumptive causes of dementia have been excluded
    - Cannot occur exclusively during bouts of delirium
    - Cannot be explained by another mental disorder

Imaging Related to Alzheimer's Treatment with Amyloid Reduction Medications

Criteria

MRI brain without contrast (CPT® 70551) or without and with contrast (CPT® 70553) is considered medically necessary to determine eligibility for the treatment of Alzheimer's disease with monoclonal antibodies directed against amyloid (Donanemab (Kisunla®) and Lecanemab (Leqembi®), for any neurologic signs and/or symptoms occurring during treatment and for MRI Brain surveillance in asymptomatic individuals including for amyloid related imaging abnormalities (ARIA) monitoring.

- Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain
  - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as (CPT® 0865T or CPT® 0866T).
    - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered not medically necessary in the evaluation of dementia.
  - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as 3D rendering (CPT® 76376 and CPT® 76377).
    - These studies lack sufficient specificity and sensitivity to be clinically useful in the evaluation or follow up of individuals with dementia. Their use is limited to research studies and are otherwise to be considered not medically necessary in routine clinical practice.
- AI-powered connectomic analysis of the brain CPT® 0319T
  - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.
- For amyloid PET requests in the treatment with amyloid reducing medications, see **Mild Cognitive Impairment (MCI) and Dementia – PET (HD-8.2)**
- For acute mental status change, see **Mental Status Change (HD-4.2)** and/or **Stroke/ TIA (HD-21.1)**
- For evaluation of Lewy Body Dementia, see **Lewy Body Dementia (LBD) – SPECT and PET (HD-8.3)**
- For the evaluation of Normal Pressure Hydrocephalus, see **Normal Pressure Hydrocephalus (HD-8.4)**
- For evaluation of rapidly progressive memory loss see **Autoimmune/Paraneoplastic Encephalitis & Neuroinflammatory Disorders (HD-14.3)**
- For evaluation of suspected vascular dementia see **Cerebrovascular Disease (HD-21.1)**

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Background and Supporting Information

Subjective cognitive decline (SCD) refers to individuals who are concerned about a cognitive decline but perform normally on cognitive testing.

Mild Cognitive Impairment (MCI), also referred to as mild neurocognitive disorder, is marked by focal or multifocal cognitive impairment with minimal impairment of instrumental activities of daily living that do not cross the threshold for dementia.

Cognitive domains affected by MCI may include memory, attention, language, visuospatial processing, executive function, and social behavior. Examples of memory loss include forgetfulness, repeating questions, forgetting recent events or conversations. Attention deficits may include periods of decreased alertness or distractibility. Language impairment may be displayed as word finding difficulties, difficulty communicating and/or understanding. Visuospatial processing impairment may present as getting lost. Executive dysfunction including difficulty completing multi-step commands, planning, or using appliances. Concerning social behaviors include impulsiveness and inappropriate behaviors.

The functional impact of cognitive symptoms should be evaluated. Individuals with mild cognitive impairment may have difficulties completing instrumental activities of daily living such as managing finances, cooking, medications, and using transportation.

On neuropsychological testing, individuals with mild neurocognitive disorder perform at least 1 standard deviation below appropriate norms. Of note, a highly educated individual who scores within the normal range on screening tests, for example, a score of 29/30 on the MMSE, may show objective deficits in cognitive function on formal neuropsychological testing, consistent with a diagnosis of MCI.

Dementia, or major neurocognitive disorder, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), refers to significant cognitive decline, with impairment in cognitive performance in domains including complex attention, executive function, learning and memory, language, perceptual-motor skills, or social cognition.

On neuropsychological testing, individuals with a major neurocognitive disorder perform 2 or more standard deviations below appropriate norms.

Impairment in activities of daily living include bathing, dressing, grooming, feeding and toileting.

Presumptive causes of cognitive decline include metabolic abnormalities such as hypothyroidism, uncontrolled diabetes, vitamin deficiencies, and/or untreated disorders such as sleep apnea.

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Evidence Discussion (HD-8.1)

- The primary role of neuroimaging in the work up of individuals diagnosed with mild cognitive impairment or dementia is to exclude other serious differential diagnosis such as tumors, subdural hematomas, and normal pressure hydrocephalus (Soderlund et al., 2024; Knopman et al., 2001). The American Academy of Neurology (AAN) recommended the use of non-contrast CT or Brain MRI for aiding in the diagnosis of dementia (Knopman et al., 2001; McCollum & Karlawish, 2020). Cross-sectional imaging may also identify characteristic brain atrophy patterns found in common neurodegenerative diseases and vascular insults (Soderlund et al., 2024). CT imaging may also be used when MRI scans are contraindicated.
- Volumetric MRI Brain for the diagnosis of dementia is not currently recommended for routine clinical use by the AAN (Knopman et al.,2001; McCollum & Karlawish, 2020). There remains a significant evidence gap in the literature regarding clinical validation of volumetric MRI in the diagnosis of dementia. Their use remains limited to research studies (McCollum & Karlawish,2020, Pemberton et al.,2021).

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Mild Cognitive Impairment (MCI) and Dementia - PET (HD-8.2)

HD.DM.0008.2.A
v1.0.2027

Brain PET CPT® Codes	Definition
78608	Used to report FDG PET metabolic brain studies for dementia, seizure disorders, and brain tumors
78609	Used to report PET brain perfusion studies, primarily used for brain tumors
78811	Limited PET, used for amyloid or tau PET, static imaging to measure amyloid and tau
78814	Limited PET/CT, used for amyloid or tau PET, static images to measure amyloid or tau

Metabolic (FDG) PET Brain CPT® 78608

Amyloid PET Brain CPT® 78814 or 78811

Tau PET Brain CPT® 78814 or 78811

Perfusion PET Brain CPT® 78609

Background and Supporting Information

Evidence Discussion

Metabolic (FDG) PET Brain (CPT® 78608)

Criteria

Mild Cognitive Impairment

- Metabolic (FDG) PET (CPT® 78608) is considered medically necessary in the evaluation of for Mild Cognitive Impairment (MCI) when Alzheimer's Disease is suspected and **ALL** the following criteria are met:

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- Established diagnosis of mild cognitive impairment based on clinical history, physical examination, and cognitive testing, which may include neuropsychological testing.
- Documentation of cognitive decline obtained by either:
  - A detailed history of cognitive decline with impairments confirmed by family members or others with knowledge of the individuals status

    OR
  - Abnormal mental status test score or neuropsychological test results consistent with mild cognitive impairment/mild neurocognitive disorder
    - Examples of abnormal mental status test results consistent with MCI include:
      - Montreal Cognitive Assessment (MOCA) score 19-30 (Rabinovici 2025)
      - Saint Louis University Mental Status (SLUMS) score for high school education 21-26, for less than high school education 20-24
      - Mini Mental State Exam (MMSE) score 22-30 (Rabinovici 2025, Cummings 2023)
- Results of any structural brain imaging (MRI Brain or CT Head) previously performed.

Dementia

- Metabolic (FDG) PET Brain (CPT® 78608) is considered medically necessary in the evaluation of dementia to distinguish between Alzheimer's disease (AD) and Frontotemporal Dementia (FTD) or for suspected Alzheimer disease with atypical clinical presentation when all the following criteria are met (Soderlund, 2025) :
  - Suspected diagnosis of dementia:
    - Date of onset of symptoms with documentation of 6 months of cognitive decline
    - Documentation of a decline in cognitive function obtained with either:
      - A detailed history of memory loss with impairment of day-to-day activities confirmed by family members or others with knowledge of the individual's status

        OR
      - Abnormal mental status testing score consistent with dementia
        - Examples of abnormal bedside mental status testing scores include:
          - Mini-Mental State Exam (MMSE) less than 26,
          - Montreal Cognitive Assessment Survey (MoCA) less than 26,
          - Memory Impairment Screen (MIS) less than 5,
          - St. Louis University Mental Status (SLUMS) less than 21, or
          - Eight-item Informant Interview to Differentiate Aging and Dementia (AD8) Dementia Score greater than 2

Head Imaging Guidelines

- Results of any structural imaging (MRI Brain or CT Head) previously performed
- Meets diagnostic criteria for AD and FTD
- The results are expected to clarify the diagnosis between FTD and AD and help guide future treatment
- Cause of clinical symptoms is uncertain
- Evaluation has ruled out specific alternative neurodegenerative disease or causative factors
  - Cannot occur exclusively during bouts of delirium
  - Cannot be explained by another mental disorder
- Metabolic FDG-PET brain (CPT® 78608) is otherwise considered not medically necessary for the purpose of diagnosis and management of other forms of dementia including, but not limited to, Parkinson's disease, normal pressure hydrocephalus, and chronic traumatic encephalopathy.
  - For requests related to Lewy Body Dementia, see **Lewy Body Dementia (LBD) – SPECT and PET (HD-8.3)**
- Metabolic FDG-PET(CPT® 78608)/MRI Brain without contrast (CPT® 70551) OR MRI Brain without and with contrast (CPT® 70553) imaging may be considered on a case-by-case basis for those imaging centers that will utilize FDG-PET/MRI during an initial evaluation (instead of MRI alone) and who also have a standardization of imaging protocol.

Amyloid PET Brain (CPT® 78814 or 78811)

Criteria

- Amyloid Brain PET is considered medically necessary when a diagnosis of MCI or dementia due to Alzheimer's disease is suspected based on cognitive testing, and evaluation including structural brain imaging has been completed, in ANY of the following clinical scenarios:
  - Individuals with MCI or dementia who are under 65 years of age and in whom AD is suspected
  - Individuals with MCI or dementia that could be consistent with amnestic AD pathology with onset at 65 years of age or older
  - Individuals with MCI or dementia that could be consistent with AD but has atypical clinical features
  - Individuals with MCI or dementia with equivocal or inconclusive results on CSF biomarkers
  - To inform the prognosis of individuals with MCI due to suspected AD pathology

- To determine eligibility for treatment with amyloid targeting therapy and to monitor response

Imaging Related to Alzheimer's Treatment with Amyloid Reduction Medications

Amyloid brain PET (CPT® 78811 or CPT® 78814) is considered medically necessary to determine eligibility for the treatment of Alzheimer's disease with monoclonal antibodies directed against amyloid, Donanemab (Kisunla®) and Lecanemab (Leqembi®), and to monitor treatment response every 6 months (Rabinovici 2025).

For Cerebral Amyloid Angiopathy, see **Stroke/TIA (HD-21.1)**

Tau PET Brain (CPT® 78814 or 78811)

Criteria

- Tau PET is considered medically necessary for evaluation of cognitive impairment in individuals with suspected AD with atypical clinical presentation when all the following criteria are met:
  - Established diagnosis of mild cognitive impairment or dementia
  - Evaluation has excluded other causes
  - Results of structural brain imaging are available to the ordering provider

Perfusion PET Brain (CPT® 78609)

Critiera

Perfusion PET Brain imaging (CPT® 78609) is considered not medically necessary in the evaluation of dementia.

Background and Supporting Information

An atypical clinical presentation of Alzheimer's Disease (AD) is one that meets core clinical criteria of cognitive impairment in multiple domains, which interfere with instrumental activities of daily living and functioning, but has sudden or rapid onset or the onset occurs at a younger age (under 65).

Atypical AD variants include:

- Early-onset
- Amnestic variant early-onset AD
- Visuospatial variant AD (posterior cortical atrophy [PCA])

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- Language variant AD (lopogenic variant primary progressive aphasia [PPA])
- Behavioral variant/dysexecutive variant AD
- Motor variant AD corticobasal syndrome due to AD

Atypical clinical presentation of AD is estimated to occur in up to 25% of patients and presents with nonamnestic syndromes, including language dysfunction, visuospatial impairments, executive dysfunction, changes in personality, behavior and motor function.

Autopsy studies show that AD is the most common underlying neuropathology in logopenic variant PPA and PCA syndromes. AD is the underlying pathology in 25% of those with corticobasal syndrome and is also associated with primary dysexecutive syndrome.

Corticobasal degeneration presents with asymmetric rigidity, limb apraxia, postural instability, myoclonus, alien limb, and cortical sensory loss.

Posterior Cortical Atrophy (PCA) affects visual processing pathways and presents with progressive visual impairment.

The frontotemporal dementias (FTDs) are a group of neurodegenerative disorders that differ from Alzheimer's disease. The basic pathology involves accumulation of tau proteins in the brain rather than amyloid. Onset tends to be younger (less than 65) and progression usually more rapid than in senile dementia-Alzheimer type (SDAT). There is no treatment, and the medications used to help memory in Alzheimer's disease are not effective.

There are several subtypes of FTD; most common are the behavioral variant with early loss of executive functions, impaired judgment disinhibition and impulsivity, and the semantic variant with primary and progressive loss of language ability (primary progressive aphasia type FTD). Other less common subtypes include progressive supranuclear palsy, corticobasal syndrome, and FTD associated with motor neuron disease.

Diagnosis of FTD is based on clinical features, neuropsychological testing, and brain imaging (preferably MRI) to rule out other structural disease. Metabolic (FDG) PET Brain is helpful by demonstrating patterns of abnormality more consistent with FTD than Alzheimer's disease.

Recent research has examined the utility of PET/MRI for evaluation of individuals with dementia. Due to the prolonged acquisition time, motion during a PET may lead to artifacts such as blurring of the images. Use of co-registration of PET with MRI can lead to better PET assessment especially with quantitative measurements. Utilization of PET/MRI provides greater confidence in imaging reading by permitting greater structural correlation. A recent study compared FDG-PET/CT and FDG-PET/MRI in a memory disorders clinic. This study identified more individuals with cerebrovascular disease

(stroke) and better cortical atrophy characterization. The authors found that PET/MRI provided significant improvement in diagnosis and management of individuals in which dementia is a consideration.

Evidence Discussion (HD-8.2)

The Alzheimer's Association workgroup has revised the criteria for diagnosis and staging of Alzheimer's Disease (AD) (Jack et al., 2024). The workgroup defined Alzheimer's disease as a biological process, rather than a clinical syndrome, which allows diagnosis in the asymptomatic phase, based on positive biomarkers (Core 1 biomarkers) (Jack et al., 2024). These Core 1 biomarkers include Amyloid PET and cerebrospinal fluid biomarkers (Jack et al., 2024) An abnormal Core 1 biomarker is sufficient to establish a diagnosis of AD (Soderlund et al., 2024; Jack et al., 2024).

Structural, functional, and molecular brain imaging in individuals with MCI helps to identify potentially treatable structural abnormalities and identify imaging features that may confer an increased risk of transformation to a dementia (Soderlund et al., 2024). In addition, molecular imaging helps inform prognosis, for patients and their families, and allows early treatment initiation (Soderlund et al., 2024; Rabinovici et al., 2025).

Amyloid PET is positive in 60% of individuals with MCI (Soderlund et al., 2024). Greater cognitive decline is noted in those with MCI and a positive amyloid PET scan, and they are more likely to progress to AD than those with a negative amyloid PET (Soderlund et al.,2024; Rabinovici et al., 2025). Amyloid PET also results in a change in diagnosis in up to 44% of individuals, therefore increasing diagnostic confidence (Soderlund et al., 2024).

Amyloid PET has a pooled sensitivity of 0.90 and specificity of 0.80 for diagnosis of AD, and a pooled sensitivity of 0.84 and specificity of 0.62 for predicting conversion of MCI to dementia (Ruan & Sun, 2023).

Molecular brain imaging is particularly helpful in confirming a diagnosis of AD with atypical clinical presentation (Soderlund et al.,2024). A positive amyloid PET in early-onset or atypical AD can lead to a change in diagnosis of 66.8%, improve confidence in diagnosis in 81.5% and change management in 80% of cases (Soderlund et al., 2024; Ceccaldi et al., 2018). The use of amyloid PET led to changes in management in 63.5% of Medicare members with dementia (Rabinovicci et al., 2025, Rabinivicci et al., 2019).

The Society of Nuclear Medicine Imaging and Molecular Imaging released Appropriate Use Criteria (AUC) for amyloid PET which included the following clinical scenarios (Soderlund et al., 2024; Rabinovici et al., 2025):

- Individuals with MCI or dementia who are under 65 years of age and for whom AD is suspected

- Individuals with MCI or dementia consistent with amnestic AD pathology with onset ≥65 years of age
- Individuals with MCI or dementia that could be consistent with AD but has atypical features
- Individuals with MCI or dementia with equivocal or inconclusive results on CSF biomarkers
- To inform the prognosis of patients due to suspected AD pathology
- To determine eligibility for treatment with amyloid-targeting therapy and to monitor treatment response

Tau PET is considered appropriate for the evaluation of individuals presenting with MCI or a dementia syndrome that could be consistent with AD pathology but has atypical features (Soderlund et al., 2024; Rabinovici et al., 2025). In these clinical scenarios, tau uptake correlates with cognitive function and is helpful to diagnose atypical clinical phenotypes of AD (Soderlund et al., 2024).

The work groups supports tau PET in atypical cases as a tau binding pattern can help establish AD as the cause of impairment and the spatial pattern of tau uptake matches brain regions clinically affected (Rabinovici et al., 2025). Furthermore, a high tau burden is associated with more rapid clinical progression (Rabinovici et al. 2025).

FDG-PET Brain in the evaluation of MCI shows a pattern of hypometabolism consistent with AD in up to 79% of cases (Soderlund et al., 2024). In addition, an abnormal pattern predicts conversion from MCI to AD with an accuracy over 80% (Soderlund et al., 2024). Conversely, a negative FDG PET reduces the likelihood of progression to dementia (Soderlund et al., 2024).

FDG-PET brain accurately discriminates Alzheimer's disease individuals from normal subjects with a sensitivity of 96% and specificity of 100% (Soderlund et al., 2024).

Metabolic (FDG) PET brain is helpful by demonstrating patterns of abnormality more consistent with FTD than Alzheimer's disease. FDG PET brain has a sensitivity of 86% and specificity of 97.6% in evaluating individuals with FTD (Soderlund et al., 2024). The use of FDG PET increases diagnostic accuracy and confidence for both AD and FTD (Soderlund et al., 2024). It is particularly helpful in cases of diagnostic uncertainty (Soderlund et al., 2024).

Recent research has examined the utility of PET/MRI for evaluation of individuals with dementia. Due to the prolonged acquisition time, motion during a PET may lead to artifacts such as blurring of the images. Use of co-registration of PET with MRI can lead to better PET assessment especially with quantitative measurements.(Chen 2018, Patel 2020) Utilization of PET/MRI provides greater confidence in reading images by permitting greater structural correlation. A recent study compared FDG-PET/CT and FDG-PET/MRI in a memory disorders clinic (Kaltoft et al., 2019). The main findings were that FDG PET/MRI revealed more vascular pathology in 35% of individuals, induced a

change of the interpretation of FDG PET in 17% of individuals and was considered to influence management in 22% of individuals (Kaltoft et al., 2019).

Head Imaging Guidelines

Lewy Body Dementia (LBD) - SPECT and PET (HD-8.3)

HD.DM.0008.3.A
v1.0.2027

SPECT Brain Scan

Metabolic (FDG) PET Brain

Background and Supporting Information

Evidence Discussion (HD-8.3)

SPECT Brain Scan

Criteria

- SPECT Brain Scan (CPT® 78803 or CPT® 78830) is considered medically necessary for evaluation of suspected Lewy Body Dementia when **ALL** of the following are met:
  - Established diagnosis of dementia:
    - date of onset of symptoms with documentation of 6 months of cognitive decline
    - documentation of decline in cognitive function obtained with either:
      - a detailed history of memory loss with impairment of day-to-day activities confirmed by family members or others with knowledge of the individual's status

        OR
      - abnormal mental status test score consistent with dementia or neuropsychological test results consistent with dementia/major neurocognitive disorder
        - examples of abnormal bedside mental status testing scores include:
          - Mini-Mental State Exam (MMSE) <26,
          - Montreal Cognitive Assessment Survey (MoCA) <26,
          - Memory Impairment Screen (MIS) <5,
          - St. Louis University Mental Status (SLUMS) <21, or
          - Eight-item Informant Interview to Differentiate Aging and Dementia (AD8) Dementia >2
  - Presumptive causes of dementia have been excluded
    - cannot occur exclusively during bouts of delirium

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        - cannot be explained by another mental disorder
    - Results of any structural brain imaging (MRI or CT Head)

Metabolic (FDG) PET Brain

Criteria

- Metabolic (FDG) PET brain (CPT® 78608) is considered medically necessary to differentiate Lewy Body Dementia (LBD) from Alzheimer's Disease (AD) when all the following criteria are met:
    - Established diagnosis of dementia:
        - Date of onset of symptoms with documentation of 6 months of cognitive decline
        - Documentation of decline in cognitive function obtained with either:
            - a detailed history of memory loss with impairment of day-to-day activities confirmed by family members or others with knowledge of the individual's status

              OR
            - abnormal mental status test score consistent with dementia or neuropsychological test results consistent with dementia/major neurocognitive disorder
                - Examples of abnormal bedside mental status testing scores include:
                    - Mini-Mental State Exam (MMSE)<26,
                    - Montreal Cognitive Assessment Survey (MoCA) <26,
                    - Memory Impairment Screen (MIS) <5,
                    - St. Louis University Mental Status (SLUMS) <21, or
                    - Eight- item Informant Interview to Differentiate Aging and Dementia (AD8) Dementia Score >2
    - Presumptive causes of dementia have been excluded
        - Cannot occur exclusively during bouts of delirium
        - Cannot be explained by another mental disorder
    - Results of any structural imaging (MRI or CT Head) performed

Background and Supporting Information

- Dementia with Lewy bodies is often hard to diagnose because its early symptoms may resemble those of Alzheimer's or a psychiatric illness. Over time people with LBD often develop similar symptoms due to the presence of Lewy bodies in the brain.

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  - Clinicians and researchers may use the "1-year rule" to help make a diagnosis. If cognitive, psychiatric, emotional, and/or personality symptoms appear at the same time as or at least a year before movement problems/Parkinsonism, the diagnosis is dementia with Lewy bodies. If cognitive problems develop more than a year after the onset of movement problems, Parkinson's disease, the diagnosis is Parkinson's disease dementia (PDD).
- Core Clinical Symptoms
  - Dementia
  - Movement problems/Parkinsonism
  - Cognitive fluctuations
  - Visual hallucinations
  - REM sleep behavior disorder
- Supportive Clinical Symptoms
  - Extreme sensitivity to antipsychotic medications
  - Falls, fainting
  - Severe problems with involuntary functions (maintaining blood pressure, incontinence, constipation, loss of smell)
  - Changes in personality and mood (depression, apathy, anxiety)

Test Results Supporting Diagnosis

- Abnormal ^{123}iodine-MIBG myocardial scintigraphy showing reduced communication of cardiac nerves
- Sleep study confirming REM sleep behavior disorder without loss of muscle tone

Evidence Discussion (HD-8.3)

- For suspected Lewy Body Dementia (LBD), a CT or MRI head is appropriate as the initial imaging study (McCleery et al., 2015; McCollum & Karlawish, 2020).
- To increase diagnostic accuracy of LBD, SPECT modalities are helpful for differentiating LBD from Alzheimer's dementia (Soderlund et al., 2024; Subramaniam et al., 2017; McCleery et al., 2015; Armstrong, 2019).
- Functional imaging of the dopamine transporter (DAT) (Iodine-123 Ioflupane) using SPECT shows a deficiency in the nigrostriatal pathway in LBD. This is considered a second line imaging test after cross-sectional imaging has excluded other pathology, such as vascular lesions along the nigrostriatal pathway, which can lead to abnormal DAT images with false positive results (McCleery et al., 2015).
- An abnormal DAT-SPECT scan has a sensitivity of 78.7% and a specificity of 90.4% for probable LBD (Soderlund et al., 2024; McCleery et al., 2015)

- Metabolic (FDG) PET imaging demonstrates features which would support a diagnosis of LBD. Hypometabolism in the occipital lobe differentiates LBD from AD (Soderlund et al., 2024; Oldan et al., 2021). In addition, the "cingulate island sign", which refers to the preservation of FDG metabolism in the posterior cingulate gyrus, is considered a biomarker for LBD (Soderlund et al., 2024; Feng et al., 2023)

Head Imaging Guidelines

Normal Pressure Hydrocephalus (NPH) (HD-8.4)

HD.DM.0008.4.C

v1.0.2027

- CT Head without contrast (CPT® 70450) or MRI Brain without contrast (CPT® 70551) is medically necessary if the individual has at least two symptoms involving gait abnormality (See *Background and Supporting Information*), urinary incontinence, or dementia AND
  - The clinical symptoms cannot be completely explained by other neurological or non-neurological disease, AND
  - There is no apparent preceding disorder that would cause hydrocephalus
- The components of Dementia are delineated in **Mild Cognitive Impairment (MCI) and Dementia - MRI/CT (HD-8.1)**, but include:
  - Results of testing and/or neuropsychological testing can be performed when history and mental status examination cannot provide a confident diagnosis.
  - Examples of abnormal mental status testing such as Mini-Mental State Exam (MMSE) with score <26, Montreal Cognitive Assessment Survey (MoCA) with score <26, Memory Impairment Screen (MIS) with score <5, the St. Louis University Mental Status (SLUMS) with score <21, or the Eight-item Informant Interview to Differentiate Aging and Dementia (AD8) Dementia Score >2.
  - Presumptive causes or etiology/ies of dementia
    - Cannot occur exclusively during bouts of delirium
    - Cannot be explained by another mental disorder
- MRI Brain (CPT® 70551, CPT® 70552, or CPT® 70553) is not medically necessary for the diagnosis of NPH if a CT has been performed. However, MRI Brain is medically necessary if needed for pre-surgical planning.
  - After neuro imaging, the next steps are CSF sampling, drainage, and dynamics.
- Follow-up imaging for individuals diagnosed with NPH with a shunt should follow **Hydrocephalus Shunts (HD-11.14)** or **Low-Pressure Headache and CSF Leak (HD-11.15)**

Background and Supporting Information

Normal Pressure Hydrocephalus (NPH) seen typically in the elderly. It comprises a triad of symptoms: cognitive dysfunction, incontinence of urine, and gait disturbance (typically a “magnetic”, small-step, shuffling, or broad-based gait). The reported neuroradiologic marker for this is ventriculomegaly (enlarged ventricles) in the brain. Unfortunately, these symptoms and this neuroradiologic finding is common in the elderly, making the

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diagnosis of NPH in any given individual problematic. It is radiographically common and clinically rare.

Evidence Discussion (HD-8.4)

- Initial neuroimaging for the evaluation of suspected Normal Pressure Hydrocephalus (NPH) includes CT Head or MRI Brain in individuals with clinical symptoms and no explanation for hydrocephalus.[2,21]
- Only a single modality study is medically necessary. The initial best modality is MRI Brain because of its higher intrinsic soft tissue resolution and because it can often be used as a pre-surgical exam.[2,21]
- By using the appropriate single best test, we avoid duplicate imaging and unnecessary radiation to the lens of the eye and other head and neck structures.[2]
- Cine MRI showing hyperdynamic aqueductal CSF flow can also help in identifying shunt-responsive NPH individuals. The benefit of this exam is that it offers us functional information about CSF flow and can help improve individual outcomes.[2,21,34]

Imaging Related to Alzheimer's Treatment with Amyloid Reduction Medications (HD-8.5)

HD.DM.0008.5.A
v1.0.2027

For structural brain imaging related to Alzheimer's treatment with amyloid reducing medications, see **Mild Cognitive Impairment (MCI) and Dementia – MRI/CT (HD-8.1)**.

For Amyloid PET brain imaging related to Alzheimer's treatment with amyloid reducing medications, see **Mild Cognitive Impairment (MCI) and Dementia- PET (HD-8.2)**.

Criteria

Background and Supporting Information

Amyloid reduction medications are considered medically necessary for the treatment of Mild Cognitive Impairment (MCI) due to Alzheimer's disease and mild, early- stage Alzheimer's disease.(Patel et al. 2020)

These medications are monoclonal antibodies that selectively bind to aggregated forms of beta amyloid. The accumulation of amyloid plaques in the brain is a defining pathophysiologic feature of Alzheimer's disease. In clinical trials, these medications reduce amyloid beta plaque compared with placebo.(Patel et al. 2020)

Amyloid-related imaging abnormalities (ARIA) have been caused by these medications. ARIA usually occurs early in treatment and may be asymptomatic although serious and life-threatening events may occur. Screening MRI Brain prior to treatment initiation and periodic monitoring during treatment is recommended. For moderate to severe ARIA, treatment may be suspended. Once ARIA is identified on a brain MRI, follow up MRIs are considered medically necessary to assess for radiographic resolution and/or symptom resolution with the imaging time frame determined by the treating physician. Resumption of dosing is guided by clinical judgment.(Patel et al. 2020)

ARIA may be further characterized as ARIA with edema (ARIA-E) or ARIA with hemosiderin (ARIA-H). ARIA-E presents on MRI as brain edema or sulcal effusions. ARIA-H includes microhemorrhage and superficial siderosis. ARIA-E and ARIA-H may occur simultaneously.(Patel et al. 2020)

Although ARIA is usually asymptomatic, symptoms associated with ARIA include headache, confusion, visual changes, dizziness, nausea, aphasia, weakness, gait difficulty and seizures, including status epilepticus. Focal neurologic deficits may also

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occur.(Patel et al.2020) The risk of ARIA is increased in apolipoprotein E ε4 (ApoE ε4) homozygotes.(Patel et al. 2020)

Leqembi® dosing after 18 months may be administered every 2 weeks or transitioned to a maintenance regimen every 4 weeks.

Transitioning from one amyloid targeting monoclonal antibody to another should be done when the individual has been off of the prior drug for 5 half-lives prior to initiation of the alternative drug. The half-life of aducanumab is 24.3 days; the half-life of lecanemab is 9.5 days, and the half-life of donanemab is 11.8 days. Individuals should be off of aducanumab for approximately 4 months or off lecanemab or donanemab for approximately 6 weeks prior to initiation of a different amyloid targeting monoclonal antibody.

Evidence Discussion (HD-8.5)

- Structural brain imaging in the work up of individuals diagnosed with dementia is primarily to exclude other significant intracranial abnormalities. A brain MRI will assist with the diagnosis of dementia by excluding structural pathology such as tumors or subdural hematomas (Soderlund et al., 2024).
- Amyloid-related imaging abnormalities (ARIA) have been associated with treatment by amyloid reduction medications. ARIA usually occurs early in treatment and may be asymptomatic although serious and life-threatening events may occur. Screening brain MRI prior to treatment initiation and periodic monitoring during treatment is recommended (Eli Lily 2024; Eisai Inc. and Biogen, 2025). For moderate to severe ARIA, treatment may be suspended. Once ARIA is identified on a brain MRI, follow-up MRIs are medically necessary to assess for radiographic resolution and/or symptom resolution with the imaging time-frame determined by the treating physician (Eli Lily 2024; Eisai Inc. and Biogen, 2025). Resumption of dosing is guided by clinical judgment (Eli Lily 2024; Eisai Inc. and Biogen, 2025).
- Amyloid PET brain is a form of molecular imaging, which uses a tracer that binds to amyloid plaques in the brain. At the present time, the use of Amyloid PET brain is limited to confirming the presence of amyloid in the brain, in those with mild cognitive impairment due to Alzheimer's disease or mild dementia due to Alzheimer's disease, prior to treatment with amyloid reducing medications.

References (HD-8)

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1. American College of Radiology. (2020). ACR–ACNM–ASNR–SNMMI practice parameter for brain PET/CT imaging in dementia. https://gravitas.acr.org/PPTS/
2. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed., pp. 591–643). Author.
3. Armstrong, M. J. (2019). Lewy body dementias. *Continuum: Lifelong Learning in Neurology*, 25(1), 128–146. https://doi.org/10.1212/CON.0000000000000685
4. Bradley, W. G., Jr. (2015). CSF flow in the brain in the context of normal pressure hydrocephalus. *American Journal of Neuroradiology*, 36(5), 831–838. https://doi.org/10.3174/ajnr.A4124
5. Capone, P. M., Bertelson, J. A., & Ajtai, B. (2020). Neuroimaging of normal pressure hydrocephalus and hydrocephalus. *Neurologic Clinics*, 38(1), 171–183. https://doi.org/10.1016/j.ncl.2019.09.003
6. Ceccaldi, M., Jonveaux, T., Verger, A., Guedj, E., Hitzel, A., Ranjeva, J.-P., Gély-Nargeot, M.-C., & Didic, M. (2018). Added value of ^{18}F-florbetaben amyloid PET in the diagnostic workup of complex dementia cases in France. *Alzheimer's & Dementia*, 14, 293–305.
7. Chen, K.-T., Salcedo, S., Chonde, D. B., Catana, C., Hooker, J. M., & Rosen, B. R. (2018). MR-assisted PET motion correction in simultaneous PET/MRI studies of dementia subjects. *Journal of Magnetic Resonance Imaging*, 48(5), 1288–1296. https://doi.org/10.1002/jmri.26000
8. Consensus recommendations for the postmortem diagnosis of Alzheimer's disease. (1997). *Neurobiology of Aging*, 18(4), S1–S2. https://doi.org/10.1016/S0197-4580(97)00057-2
9. Cummings, J., Apostolova, L., Rabinovici, G. D., Atri, A., Aisen, P., Greenberg, S., Hendrix, S., Selkoe, D., Weiner, M., & Zimmer, J. (2023). Lecanemab: Appropriate use recommendations. *Journal of Prevention of Alzheimer's Disease*, 10(3), 362–377. https://doi.org/10.14283/jpad.2023.30
10. Feng, L. R., Vogel, A., Mellergaard, C., Hansen, A. K., & Hasselbalch, S. G. (2023). Clinical validation of the cingulate island sign visual rating scale in dementia with Lewy bodies. *Journal of the Neurological Sciences*, 451, 120719. https://doi.org/10.1016/j.jns.2023.120719
11. Foster, N. L., Heidebrink, J. L., Clark, C. M., Jagust, W. J., Arnold, S. E., Barbas, N. R., DeCarli, C. S., Turner, R. S., Koeppe, R. A., & Minoshima, S. (2007). FDG-PET improves accuracy in distinguishing frontotemporal dementia and Alzheimer's disease. *Brain*, 130(Pt 10), 2616–2635. https://doi.org/10.1093/brain/awm177
12. Goto, H., Ishii, K., Uemura, T., Miyamoto, N., Yoshikawa, T., Mori, T., Oda, K., & Sasaki, M. (2010). Differential diagnosis of dementia with Lewy bodies and Alzheimer disease using combined MR imaging and brain perfusion SPECT. *American Journal of Neuroradiology*, 31(4), 720–725. https://doi.org/10.3174/ajnr.A1926
13. Graff-Radford, N. R., & Jones, D. T. (2019). Normal pressure hydrocephalus. *Continuum: Lifelong Learning in Neurology*, 25(1), 165–186. https://doi.org/10.1212/CON.0000000000000689
14. Jack, C. R., Jr., Andrews, J. S., Beach, T. G., Bennett, D. A., Craft, S., Fagan, A. M., Iwatsubo, T., Knopman, D. S., Montine, T. J., & Petersen, R. C. (2024). Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup. *Alzheimer's & Dementia*, 20(8), 5143–5169. https://doi.org/10.1002/alz.13859
15. Kaltoft, N. S., Marner, L., Larsen, V. A., Hasselbalch, S. G., Law, I., & Henriksen, O. M. (2019). Hybrid FDG PET/MRI vs FDG PET and CT in suspected dementia. *PLOS ONE*, 14(5), e0216409. https://doi.org/10.1371/journal.pone.0216409
16. Kisunla® [Prescribing information]. (2024, July). Eli Lilly and Company.
17. Knopman, D. S., DeKosky, S. T., Cummings, J. L., Chui, H., Corey-Bloom, J., Relkin, N., Small, G. W., Miller, B., & Stevens, J. C. (2001). Practice parameter: Diagnosis of dementia. *Neurology*, 56(9), 1143–1153. https://doi.org/10.1212/WNL.56.9.1143
18. Langa, K. M., & Levine, D. A. (2014). Diagnosis and management of mild cognitive impairment. *JAMA*, 312(23), 2551–2561. https://doi.org/10.1001/jama.2014.13806
19. Leqembi® [Prescribing information]. (2025, August). Eisai.
20. Lombardi, G., Crescioli, G., Cavedo, E., Lucenteforte, E., Rosso, A., Casazza, G., Rossi, S., & Filippini, G. (2020). Structural MRI for early diagnosis of Alzheimer's disease in MCI. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.CD009628.pub2

21. Magnani, M., Rustici, A., Zoli, M., Tuleasca, C., Chaurasia, B., Franceschi, E., Tonon, C., Lodi, R., & Conti, A. (2024). Connectome-Based Neurosurgery in Primary Intra-Axial Neoplasms: Beyond the Traditional Modular Conception of Brain Architecture for the Preservation of Major Neurological Domains and Higher-Order Cognitive Functions. Life (Basel, Switzerland), 14(1), 136. https://doi.org/10.3390/life14010136
22. McCleery, J., Morgan, S., Bradley, K. M., Noel-Storr, A. H., Ansorge, O., & Hyde, C. (2015). Dopamine transporter imaging for diagnosis of dementia with Lewy bodies. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.CD010633.pub2
23. McCollum, L., & Karlawish, J. (2020). Cognitive impairment evaluation and management. *Medical Clinics of North America*, 104(5), 807–825. https://doi.org/10.1016/j.mcna.2020.06.007
24. McKhann, G. M., Knopman, D. S., Chertkow, H., Hyman, B. T., Jack, C. R., Jr., Kawas, C. H., Klunk, W. E., Koroshetz, W. J., Manly, J. J., Mayeux, R., Mohs, R. C., Morris, J. C., Rossor, M. N., Scheltens, P., Carrillo, M. C., Thies, B., Weintraub, S., & Phelps, C. H. (2011). Diagnosis of dementia due to Alzheimer's disease. *Alzheimer's & Dementia,* 7(3), 263–269. https://doi.org/10.1016/j.jalz.2011.03.005
25. MoCA Cognition. (2005). MoCA clinic data. https://mocacognition.com/moca-clinic-data/
26. Nasreddine, Z. S., Phillips, N. A., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., & Chertkow, H. (2005). The Montreal Cognitive Assessment. *Journal of the American Geriatrics Society*, 53(4), 695–699.
27. Nakajima, M., Yamada, S., Miyajima, M., Kazui, H., Mori, E., Ishikawa, M., & Japanese Society of Normal Pressure Hydrocephalus. (2021). Guidelines for management of idiopathic normal pressure hydrocephalus (3rd ed.). *Neurologia Medico#Chirurgica*, 61(2), 63–97. https://doi.org/10.2176/nmc.st.2020-0292
28. NeuroQuant®. (2025). Cortechs.ai. https://www.cortechs.ai
29. Oldan, J. D., Jewells, V. L., Pieper, B., & Wong, T. Z. (2021). Complete evaluation of dementia: PET and MRI correlation. *American Journal of Neuroradiology*, 42(6), 998–1007. https://doi.org/10.3174/ajnr.A7079
30. Park, H. Y., Park, C. R., Suh, C. H., Kim, M. J., Shim, W. H., & Kim, S. J. (2021). Prognostic utility of DESH in idiopathic NPH. *American Journal of Neuroradiology*, 42(8), 1429–1436. https://doi.org/10.3174/ajnr.A7168
31. Patel, K. P., Wymer, D. T., Bhatia, V. K., Duara, R., & Rajadhyaksha, C. D. (2020). Multimodality imaging of dementia. *RadioGraphics*, 40(1), 200–222. https://doi.org/10.1148/rg.2020190070
32. Pemberton, H. G., Zaki, L. A. M., Goodkin, O., Wardlaw, J. M., Bastin, M. E., & Whitcher, B. (2021). Automated volumetric MRI tools for dementia diagnosis. *Neuroradiology*, 63(11), 1773–1789. https://doi.org/10.1007/s00234-021-02746-3
33. Rabinovici, G. D., Gatsonis, C., Apgar, C., Chaudhary, K., Gareen, I., Hanna, L., Hendrix, J., Hillner, B. E., Olson, C., & Siegel, B. A. (2019). Association of amyloid PET with clinical management changes. *JAMA,* 321(13), 1286–1294. https://doi.org/10.1001/jama.2019.2000
34. Rabinovici, G. D., Knopman, D. S., Arbizu, J., Chételat, G., Corrigan, J., Fagan, A. M., Foster, N. L., Johnson, K. A., Koscik, R. L., Lowe, V. J., & Minoshima, S. (2025). Updated appropriate use criteria for amyloid and tau PET. *Journal of Nuclear Medicine*. https://doi.org/10.2967/jnumed.124.268756
35. Rabinovici, G. D., Selkoe, D. J., Schindler, S. E., Aisen, P., Apostolova, L. G., Atri, A., Greenberg, S. M., Hendrix, S. B., Petersen, R. C., Weiner, M., Salloway, S., & Cummings, J. L. (2025). Donanemab: Appropriate use recommendations. *Journal of Prevention of Alzheimer's Disease*, 12(5), 100150. https://doi.org/10.1016/j.tjpad.2025.100150
36. Ruan, D., & Sun, L. (2023). Amyloid-β PET in Alzheimer's disease: A systematic review and Bayesian meta-analysis. *Brain and Behavior*, 13(1), e2850. https://doi.org/10.1002/brb3.2850
37. Saint Louis University. (2006). SLU Mental Status Exam (SLUMS). https://www.slu.edu/medicine/internal-medicine/geriatric-medicine/aging-successfully/assessment-tools/mental-status-exam.php
38. Sims, J. R., Zimmer, J. A., Evans, C. D., Lu, M., Ardayfio, P., Sparks, J., Wessels, A. M., Shcherbinin, S., Wang, H., & Willis, B. A. (2023). Donanemab in early symptomatic Alzheimer disease. *JAMA*, 330(6), 512–527. https://doi.org/10.1001/jama.2023.13239
39. Soderlund, K. A., Austin, M. J., Ben-Haim, S., Black, S. E., Brown, R. K. J., Budde, T., Chen, J. J., Cysique, L. A., Dolui, S., Filippi, M., Foster, N. L., & Minoshima, S. (2024). ACR Appropriateness Criteria® dementia. American College of Radiology. https://acsearch.acr.org/docs/3111292/Narrative/
40. Subramaniam, R. M., Frey, K. A., Hunt, C. H., Lowe, V. J., Djang, D. S. W., & Brown, R. K. J. (2017). ACR–ACNM practice parameter for DaT SPECT. *Clinical Nuclear Medicine*, 42(11), 847–852.
41. Svensson, A., Granvik, E., & Sjögren Forss, K. (2020). Eight-item informant interview for dementia screening. *Scandinavian Journal of Primary Health Care*, 38(4), 454–463.

42. Swanson, C. J., Zhang, Y., Dhadda, S., Wang, J., Kaplow, J., Lai, R. Y. K., Lannfelt, L., Bradley, H., Rabe, M., Koyama, A., Reyderman, L., Berry, D. A., Berry, S., Gordon, R., Kramer, L. D., & Cummings, J. L. (2021). A randomized, double-blind, phase 2b proof-of-concept clinical trial in early Alzheimer's disease with lecanemab, an anti-Aβ protofibril antibody. *Alzheimer's Research & Therapy*, 13(1), Article 80. https://doi.org/10.1186/s13195-021-00813-8
43. Tartaglia, M. C., Rosen, H. J., & Miller, B. L. (2011). Neuroimaging in dementia. *Neurotherapeutics*, 8(1), 82–92. https://doi.org/10.1007/s13311-010-0012-2
44. Van#Dyck, C. H., Swanson, C. J., Aisen, P., Bateman, R. J., Chen, C., Gee, M., Kanekiyo, M., Liu, L., Li, D., & Yoon, S. S. (2023). Lecanemab in early Alzheimer's disease. *New England Journal of Medicine*, 388(1), 9–21. https://doi.org/10.1056/NEJMoa2212948
45. Yousaf, T., Dervenoulas, G., Valkimadi, P.-E., & Politis, M. (2019). Neuroimaging in Lewy body dementia. *Journal of Neurology,* 266(1), 1–26.
46. Zukotynski, K., Kuo, P. H., Mikulis, D., Black, S. E., & Rice, L. (2018). PET/CT of dementia. *American Journal of Roentgenology*, 211(2), 246–259.

Epilepsy/Seizures (HD-9)

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Epilepsy/Seizures (HD-9.1)

HD.EP.0009.1.A
v1.0.2027

Criteria

- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for:
  - evaluation of new onset seizures
  - refractory or drug-resistant seizures
  - new neurologic deficit or no return to previous neurologic baseline
  - change in the type of seizure
  - additional evaluation, if CT Head was performed for an initial evaluation for new onset seizure, MRI (as described above) is considered medically necessary for additional evaluation
  - follow-up, MRI Brain with “Epilepsy Protocol” is considered medically necessary
- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) **OR** CT Head without contrast (CPT® 70450) is considered medically necessary for:
  - repeat imaging at the discretion of the neurologist or neurosurgeon, or any provider in consultation with a neurologist or neurosurgeon.
- CT Head without contrast (CPT® 70450) is considered medically necessary for:
  - evaluation of structural findings in seizure etiologies that contain dystrophic calcifications, such as with oligodendrogliomas and tuberous sclerosis
  - acute setting of seizure evaluation
- CT Head (contrast as requested) (CPT®70450, CPT®70460, **OR** CPT®70470) is considered medically necessary when:
  - MRI is contraindicated
  - request is urgent
- For seizure and/or altered mental status associated with head trauma, see **Head Trauma (HD-13.1)**
- 3D T1 and/or FLAIR sequences are useful in improving lesion detection for the diagnosis and monitoring of epilepsy. 3D T1 and FLAIR sequences do not require an additional CPT® for 3D rendering (CPT® 76376 and CPT® 76377).
- Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain
  - Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be requested as (CPT® 0865T or CPT® 0866T)

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    - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered not medically necessary in the evaluation of epilepsy.
- AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T
    - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

Evidence Discussion (HD-9.1)

- The use of advanced imaging is considered medically necessary for the initial evaluation of adults with seizure. Unenhanced CT is more readily available so is usually the initial imaging examination performed for adults presenting with first seizure. In the acute setting this primary exam is utilized to exclude conditions requiring urgent or emergent intervention, such as a bleed (Tranvinh et al., 2019). CT is also appropriate if MRI is contraindicated and to evaluate seizure foci that contain dystrophic calcifications, such as oligodendrogliomas and tuberous sclerosis, yet the overall success of CT in detecting focal lesions in epilepsy is low, at approximately 30% (Expert Panel on Neurological Imaging et al., 2020; Tranvinh et al. 2019). In studies where individuals were evaluated with both MRI and CT, CT failed to detect potentially epileptogenic lesions identified on MRI 16-42% of the time (Tranvinh et al., 2019). Therefore, MRI of the brain is the study of choice to evaluate new-onset seizures (when available), refractory or drug-resistant seizures, prior to discontinuation of anti-epileptic therapy, and known seizure with change in semiology.
- If CT is initially performed, it can be followed by an MRI. If an MRI not using the "Epilepsy Protocol" is initially performed, it can be followed by an MRI with the "Epilepsy Protocol" for greater sensitivity of detection of epileptogenic lesions. The failure rate for detection of lesions improved from 39% to 91% with epilepsy-trained radiologist reading MRI images obtained using a specialized, epilepsy protocol (Expert Panel on Neurological Imaging et al., 2020; Bernasconi et al., 2020; Wellmer et al., 2013).

Head Imaging Guidelines

Perioperative Evaluations for Drug-Resistant Epilepsy (HD-9.2)

HD.EP.0009.2.A
v1.0.2027

Criteria

- **ANY** or **ALL** the following requests are considered medically necessary, obtained concurrently or sequentially, for consideration of potential surgery:
  - MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553)
    - Follow-up MRI Brain after a previous routine study if performed with special "Epilepsy Protocol" (typically 3T or 7T magnet, thin sections with angled slices through hippocampus and temporal lobes)
  - Metabolic FDG PET (CPT® 78608):
    - Is considered medically necessary for pre-surgical evaluation of refractory seizure when requested by neurosurgeon or neurologist or any provider in consultation with a neurosurgeon or neurologist.
  - Metabolic PET/MRI is MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with (CPT® 70553) co-registered **WITH** FDG-PET Brain (CPT® 78608) and is considered medically necessary for pre-surgical evaluation of refractory seizure when requested by neurosurgeon or neurologist or any provider in consultation with a neurosurgeon or neurologist.
  - Ictal SPECT (CPT® 78803 or 78830)
  - Functional MRI (fMRI) (CPT® 70555 or CPT® 70554)
    - If MRA Head (CPT® 70544) is considered medically necessary but Functional MRI (CPT® 70554 or CPT® 70555) was erroneously ordered, then CPT® 70544 may be substituted when appropriate (see **Functional MRI (fMRI) (HD-24.2)**)
  - MRI Brain without contrast (CPT® 70551) **OR** MRI Brain with and without and with (CPT® 70553)
    - Medically necessary if co-registered with Magnetoencephalography (MEG)
  - Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain
    - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be requested as (CPT® 0865T or CPT® 0866T)
      - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered not medically necessary in the evaluation of epilepsy.
  - AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T.

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        - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.
    - 3D rendering CPT® 76377 (3D rendering requiring image post-processing on an independent workstation) or CPT® 76376 (3D rendering not requiring image post-processing on an independent workstation) is considered not medically necessary for epilepsy surgery alone. These studies lack sufficient specificity and sensitivity to be clinically useful in the evaluation or follow up of individuals with epilepsy. Their use is limited to research studies and are otherwise considered to be not medically necessary in routine clinical practice. 3D rendering can be included as part of the MRI Brain "Epilepsy Protocol" and should not be billed in conjunction with the MRI Brain. Exceptions include complicated surgical procedures such as craniotomy .
- When non-invasive EEG monitoring is insufficient, intracranial monitoring with stereo-EEG or grids/strips and depth electrodes is considered medically necessary with additional imaging for neuronavigation. See **Neurosurgical Imaging (HD-28.1)** and **Neuronavigation (HD-28.2)**
    - Post-operative imaging including after intracranial (EEG) monitoring per neurosurgeon or neurologist or any provider in consultation with neurosurgeon or neurologist.
- See **Primary Central Nervous System Tumors-General Considerations (ONC-2.1)** in the Oncology Imaging Guidelines and/or **Neurosurgical Imaging (HD-28.1)** for additional imaging requests for surgery

Background and Supporting Information

- Magnetoencephalography (MEG) plays an important role in clarifying the significance of abnormalities seen on both structural and functional imaging, for the purpose of epileptogenic zone localization for surgical planning. When used in conjunction with other techniques, MEG plays a major role in the non-invasive epilepsy surgery evaluation. Currently, the guidelines only require review for the MRI co-registered with MEG.
- MEG followed by co-registration with Brain MRI is referred to as Magnetic Source Imaging (MSI)

Below are examples of surgical treatment or an interventional modality that may be under active consideration for individuals with intractable epilepsy (not all inclusive):

- Focal Resection
    - Temporal Lobe Resection
    - Extratemporal Resection
- Lesionectomy
- Multiple Subpial Transections
- Laser Interstitial Thermal Therapy (LITT)

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- Anatomical or Functional Hemispherectomy and Hemispherotomy
- Corpus Callosotomy
- Stereotactic Radiosurgery
- Neurostimulation Device Implantations (Neuromodulation) including
  - Vagus Nerve Stimulation (VNS)
  - Responsive Neurostimulation (RNS) system also known as NeuroPace
  - Deep Brain Stimulation (DBS)

Evidence Discussion (HD-9.2)

- MRI Head for the initial imaging of individuals with known seizure disorder requiring surgical planning to identify the seizure focus which may include tumor, hippocampal sclerosis, and vascular lesions. Follow-up MRI after a previous standard protocol study if performed with special "Epilepsy Protocol" can provide additional information (Expert Panel on Neurological Imaging et al., 2020).
- FDG-PET/CT Brain may be complementary as a functional tool to structural imaging using MRI to localize the focus of refractory seizure activity, with reported sensitivities of PET in the assessment of temporal lobe epilepsy ranging from 87% to 90% and extra-temporal lobe epilepsy ranging from 38% to 55% (Expert Panel on Neurological Imaging et al., 2020).
- PET/MRI, performed as MRI Brain without contrast, or without and with contrast, co-registered with FDG-PET brain, increased the sensitivity of brain MRI in 60% of non-lesional individuals and is therefore supported for pre-surgical evaluation of refractory seizures (Tóth et al., 2021).
- Ictal SPECT, Functional MRI (fMRI) and MRI Brain co-registered with Magnetoencephalography (MEG) are also useful to further identify the seizure focus as well as eloquent areas of the cortex that are essential for language, motor function and memory in surgical candidates when done as a replacement for the higher risk Wada test or direct electrical stimulation mapping (Szaflarski et al., 2017; Ponisio et al., 2021; Rampp et al., 2019).

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References (HD-9)

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1. Bernasconi, A., Cendes, F., Theodore, W. H., Gill, R. S., Koepp, M. J., Hogan, R. E., Jackson, G. D., Federico, P., Labate, A., Vaudano, A. E., & International League Against Epilepsy Neuroimaging Task Force. (2019). Recommendations for the use of structural magnetic resonance imaging in the care of patients with epilepsy. *Epilepsia*, 60(6), 1054–1068. https://doi.org/10.1111/epi.15612
2. Carrette, E., & Stefan, H. (2019). Evidence for the role of magnetic source imaging in the presurgical evaluation of refractory epilepsy patients. Frontiers in Neurology, 10, 933. https://doi.org/10.3389/fneur.2019.00933
3. Culler, G. W., IV, & Jobst, B. C. (2022). Surgical treatments for epilepsy. *Continuum: Lifelong Learning in Neurology*, 28(2), 536–558. https://doi.org/10.1212/CON.0000000000001106
4. Dashtkoohi, M., Ghadimi, D. J., Moodi, F., Behrang, N., Khormali, E., Salari, H. M., Cohen, N. T., Gholipour, T., & Saligheh Rad, H. (2025). Focal cortical dysplasia detection by artificial intelligence using MRI: A systematic review and meta-analysis. *Epilepsy & behavior : E&B*, 167, 110403. https://doi.org/10.1016/j.yebeh.2025.110403
5. Delev, D., Quesada, C. M., Grote, A., Kandziora, C., Urbach, H., Schramm, J., & Bien, C. G. (2018). A multimodal concept for invasive diagnostics and surgery in previously nonlesional epilepsy. *Journal of Neurosurgery*, 128(4), 1178–1186. https://doi.org/10.3171/2016.12.JNS161676
6. Englot, D. J., Nagarajan, S. S., Imber, B. S., Raygor, K. P., Honma, S. M., Mizuiri, D., Mantle, M., & Knowlton, R. C. (2015). Epileptogenic zone localization using magnetoencephalography predicts seizure freedom. *Epilepsia*, 56(6), 949–958. https://doi.org/10.1111/epi.13002
7. Expert Panel on Neurological Imaging, Lee, R. K., Burns, J., Policeni, B., Aulino, J. M., Agarwal, V., Bykowski, J., Choudhri, A. F., Juliano, A. F., Moritani, T., Shah, L. M., & Corey, A. S. (2020). ACR Appropriateness Criteria® seizures and epilepsy. *Journal of the American College of Radiology*, 17(5, Suppl.), S293–S304. https://doi.org/10.1016/j.jacr.2020.01.037
8. Guedj, E., Varrone, A., Boellaard, R., Albert, N. L., Barthel, H., van Berckel, B. N. M., Brendel, M., Cecchin, D., Ekmekcioglu, O., Garibotto, V., Lammertsma, A. A., Law, I., Peñuelas, I., Semah, F., Traub-Weidinger, T., van de Giessen, E., van Weehaeghe, D., & Morbelli, S. (2022). EANM procedure guidelines for brain PET imaging using [^{18}F]FDG (version 3). *European Journal of Nuclear Medicine and Molecular Imaging*, 49(2), 632–651. https://doi.org/10.1007/s00259-021-05603-w
9. Guedj, E., Varrone, A., Boellaard, R., Albert, N. L., Barthel, H., van Berckel, B. N. M., Brendel, M., Cecchin, D., Ekmekcioglu, O., Garibotto, V., Lammertsma, A. A., Law, I., Peñuelas, I., Semah, F., Traub-Weidinger, T., van de Giessen, E., van Weehaeghe, D., & Morbelli, S. (2022). Correction to: EANM procedure guidelines for brain PET imaging using [^{18}F]FDG (version 3). *European Journal of Nuclear Medicine and Molecular Imaging*, 49(6), 2100–2101. https://doi.org/10.1007/s00259-022-05755-3
10. Hirtz, D., Berg, A., Bettis, D., Camfield, C., Camfield, P., Crumrine, P., Gaillard, W. D., Schneider, S., Shinnar, S., & Quality Standards Subcommittee of the American Academy of Neurology. (2003). Treatment of the child with a first unprovoked seizure. *Neurology*, 60(2), 166–175. https://doi.org/10.1212/01.WNL.0000033622.27961.B6
11. Ho, K., Lawn, N., Bynevelt, M., Lee, J., & Dunne, J. (2013). Neuroimaging of first-ever seizure: Contribution of MRI if CT is normal. *Neurology: Clinical Practice*, 3(5), 398–403. https://doi.org/10.1212/CPJ.0b013e3182a78f25
12. Johnson, R., Rizk, G., Kaur, H., Ibekwe, H., Atta, M., & Gayed, I. (2020). Refractory seizures and surgical outcome prediction. *Neuroradiology Journal*, 33(1), 57–65. https://doi.org/10.1177/1971400919881464
13. Knowlton, R. C., Elgavish, R. A., Bartolucci, A., Najm, I., & Wyllie, E. (2008). Functional imaging: Prediction of epilepsy surgery outcome. *Annals of Neurology*, 64(1), 35–41. https://doi.org/10.1002/ana.21419
14. Krumholz, A., Wiebe, S., Gronseth, G. S., Gloss, D. S., Sanchez, A. M., Kabir, A. A., Liferidge, A. T., Martello, J. P., & Shinnar, S. (2015). Management of an unprovoked first seizure in adults. *Neurology*, 84(16), 1705–1713. https://doi.org/10.1212/WNL.0000000000001487
15. Lapalme-Remis, S., & Nguyen, D. K. (2022). Neuroimaging of epilepsy. *Continuum: Lifelong Learning in Neurology,* 28(2), 306–338. https://doi.org/10.1212/CON.0000000000001080
16. Laohathai, C., Ebersole, J. S., Mosher, J. C., & Sanitá, R. (2021). Practical fundamentals of clinical MEG interpretation in epilepsy. *Frontiers in Neurology*, 12, 722986. https://doi.org/10.3389/fneur.2021.722986

17. NeuroQuant®. (2025). Cortechs.ai. https://www.cortechs.ai
18. Oldan, J. D., Shin, H. W., Khandani, A. H., Zamora, C., Benefield, T., & Jewells, V. (2018). Hybrid PET-MRI in refractory focal epilepsy. Seizure, 61, 128–134. https://doi.org/10.1016/j.seizure.2018.07.022
19. Passaro, E. A. (2023). Neuroimaging in adults and children with epilepsy. *Continuum: Lifelong Learning in Neurology,* 29(1), 104–155. https://doi.org/10.1212/CON.0000000000001242
20. Ponisio, M. R., Zempel, J. M., Day, B. K., Torigian, D. A., & Suh, M. (2021). Role of SPECT and PET in epilepsy. *American Journal of Roentgenology*, 216(3), 759–768. https://doi.org/10.2214/AJR.20.23336
21. Qiu, J., Cui, Y., Qi, B., Sun, L., & Zhu, Z. (2017). Preoperative CTA for hemispherectomy. *Clinical Practice,* 7(4), Article 992. https://doi.org/10.4081/cp.2017.992
22. Rampp, S., Stefan, H., Wu, X., Kaltenhäuser, M., Maess, B., Schmitt, F. C., Wolters, C. H., & Hamer, H. M. (2019). Magnetoencephalography for epileptic focus localization. *Brain*, 142(10), 3059–3071. https://doi.org/10.1093/brain/awz23
23. Salamon, N., Kung, J., Shaw, S. J., Koo, J., Koh, S., Wu, J. Y., & Cepeda, C. (2008). FDG-PET/MRI coregistration improves detection of cortical dysplasia. *Neurology*, 71(20), 1594–1601. https://doi.org/10.1212/01.WNL.0000334752.41807.2F
24. Spencer, D. C. (2014). MRI (minimum recommended imaging) in epilepsy. *Epilepsy Currents*, 14(5), 261–263. https://doi.org/10.5698/1535-7597-14.5.261
25. Szaflarski, J. P., Gloss, D., Binder, J. R., Gaillard, W. D., Golby, A. J., Holland, S. K., Petrella, J. R., & Practice Guideline Subcommittee of the American Academy of Neurology. (2017). Use of fMRI in presurgical epilepsy evaluation. *Neurology,* 88(4), 395–402. https://doi.org/10.1212/WNL.0000000000003532
26. Tóth, M., Barsi, P., Tóth, Z., György, I., Janszky, J., & Halász, P. (2021). Hybrid FDG-PET/MRI in presurgical decision-making. *BMC Neurology*, 21(1), 363. https://doi.org/10.1186/s12883-021-02352-z
27. Tranvinh, E., Lanzman, B., Provenzale, J. M., & Wintermark, M. (2019). Imaging evaluation of new-onset seizure. *American Journal of Roentgenology*, 212(1), 15–25. https://doi.org/10.2214/AJR.18.20202
28. Weil, S., Noachtar, S., Arnold, S., Yousry, T. A., Winkler, P. A., & Tatsch, K. (2001). Ictal ECD-SPECT in epilepsy localization. *Nuclear Medicine Communications*, 22(2), 233–237. https://doi.org/10.1097/00006231-200102000-00016
29. Wellmer, J., Quesada, C. M., Rothe, L., Elger, C. E., Bien, C. G., & Urbach, H. (2013). MRI protocol for epileptogenic lesion detection. *Epilepsia*, 54(11), 1977–1987. https://doi.org/10.1111/epi.12375

Trigeminal Neuralgia and other Centrally Mediated Facial Pain Syndromes (HD-10)

Guideline Page

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Trigeminal Neuralgia/Trigeminal Neuropathy (HD-10.1)

HD.TM.0010.1.A
v1.0.2027

Criteria

- MRI Brain without and with contrast (CPT® 70553) (with special attention to the skull base) or MRI Brain without contrast (CPT® 70551) **AND/OR** facial imaging, MRI Orbit/Face/Neck without contrast (CPT® 70540) or MRI Orbit/Face/Neck without and with contrast (CPT® 70543) is medically necessary for:
  - symptoms of trigeminal neuropathy
  - trigeminal neuralgia
  - trigeminal neuralgia which involves the ophthalmic nerve, (periorbital or forehead pain), once post-herpetic neuralgia (a complication of shingles) has been excluded by history
- CT Maxillofacial without contrast (CPT® 70486) **OR** CT Maxillofacial with contrast (CPT®70487) is considered medically necessary for evaluating the skull base and neural foramina
- Contrast-enhanced navigation protocol CT (CPT® 76497) is considered medically necessary for gamma knife stereotactic radiosurgery for trigeminal neuralgia, (see also, **Neuronavigation (HD-28.2)** and **Post-Operative Imaging (HD-28.3)**) for post-treatment imaging studies
- MRI Cervical spine without contrast (CPT® 72141) **OR** MRI Cervical spine without and with contrast (CPT® 72156) is considered medically necessary for suspected lesion of the spinal trigeminal tract and nucleus.
- MRA Head (CPT® 70544, CPT® 70545 or CPT® 70546) **OR** CTA Head (CPT® 70496) is considered medically necessary for:
  - trigeminal neuralgia (vascular imaging may be obtained concurrently with structural brain imaging)
  - failed medical treatment
  - surgical planning

Background and Supporting Information

The differential diagnosis of facial pain is extensive, complex, and difficult, and there is considerable case-to-case variation in optimal imaging pathway.

Symptoms of trigeminal neuropathy include facial pain, facial numbness, and/or weakness of the muscles of mastication.

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Trigeminal neuralgia, also known as tic douloureux (the involuntary wincing associated with the occurrence of pain), refers to sudden, severe, shooting "electrical" pains along one or more sensory divisions of the trigeminal nerve, provoked by movements such as chewing, or by external stimuli, such as wind blowing or touching the face.

The spinal trigeminal tract and nucleus extend from the midpons caudally into the upper cervical cord at the C2-4 levels. For suspected lesions of the spinal trigeminal tract and nucleus, imaging the brain stem and the cervical spinal cord is supported.

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Glossopharyngeal Neuralgia/ Glossopharyngeal Neuropathy (HD-10.2)

HD.TM.0010.2.A
v1.0.2027

Criteria

- MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) **AND/OR** MRI Orbit/Face/Neck without and with contrast (CPT® 70543) or MRI Orbit/Face/Neck without contrast (CPT® 70540) is considered medically necessary for suspected glossopharyngeal neuralgia or neuropathy
- CT Neck with contrast (CPT® 70491) is considered medically necessary to delineate skull-base erosion, deep space neck masses, calcifications, the skull base bony anatomy, and/or the stylohyoid ligament (see also **Eagle Syndrome (Neck-10.3))**
- MRA Head with contrast (CPT® 70545), or MRA Head without and with contrast (CPT® 70546), **AND/OR** MRA Neck with contrast (CPT® 70548), or MRA Neck without and with contrast (CPT® 70549) is considered medically necessary to assess for neurovascular compression for the evaluation of glossopharyngeal neuralgia

Background and Supporting Information

- Glossopharyngeal neuralgia presents as severe pain in the throat and neck, classically triggered by swallowing.
- Glossopharyngeal neuropathy may present with pain, dysphagia, loss of gag reflex, impaired taste, and impaired sensation along posterior one-third of the tongue and/or inability to elevate the palate.

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Evidence Discussion (HD-10)

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- The American Academy of Neurology recommends routine use of MRI in the evaluation of individuals with trigeminal neuralgia (American Academy of Neurology, 2021). Neuroimaging identifies structural causes in up to 15% of individuals. The most commonly identified abnormalities include cerebellopontine angle tumors and multiple sclerosis plaques (American Academy of Neurology, 2021).
- MRI Brain and/or MRI orbits, face and neck are necessary for direct visualization of the entire course of the trigeminal nerve (Rath et al., 2022).
- MRA Head, when combined with MRI Brain for evaluation of vascular compression of the trigeminal nerve, has sensitivity of 97%-100% and specificity of 100%. CTA is less commonly performed concurrently with MRI of the trigeminal nerve (Rath et al., 2022).
- CT maxillofacial may be complementary to MRI in characterizing skull-base erosions, calcifications, and skull-base foramina.
- In the evaluation of glossopharyngeal neuralgia, MRI of the brain and/or MRI orbits, face and neck, allows direct visualization of the entire course of the glossopharyngeal nerve. Imaging should include the pharynx and larynx to exclude a neck mass. To further evaluate bony anatomy, calcifications, and the stylohyoid ligament, CT neck is also appropriate. MRA Head and neck is helpful to exclude neurovascular compression in individuals with glossopharyngeal neuralgia (Rath et al., 2022).

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References (HD-10)

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1. American Academy of Neurology. (2008, October). Practice parameter: The diagnostic evaluation and treatment of trigeminal neuralgia (an evidence-based review). Reaffirmed May 22, 2021.
2. Cruccu, G. (2017). Trigeminal neuralgia. *CONTINUUM: Lifelong Learning in Neurology*, 23(2), 396–420. https://doi.org/10.1212/CON.0000000000000451
3. Goh, B. T., Poon, C. Y., & Peck, R. H. L. (2001). The importance of routine magnetic resonance imaging in trigeminal neuralgia diagnosis. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 92(4), 424–429. https://doi.org/10.1067/moe.2001.115130
4. Rath, T. J., Policeni, B., Juliano, A. F., Agarwal, M., Block, A. M., Burns, J., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., Zander, D., & Corey, A. S. (2022). ACR Appropriateness Criteria® Cranial neuropathy: 2022 update. *Journal of the American College of Radiology*, 19(11S), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
5. Yaltho, T. C., & Jankovic, J. (2011). The many faces of hemifacial spasm: Differential diagnosis of unilateral facial spasms. *Movement Disorders*, 26(9), 1582–1592. https://doi.org/10.1002/mds.23692

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Headache (HD-11)

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Headache General Guidelines (HD-11.0)

HD.HA.0011.0.C
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- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) or CT Head without contrast (CPT® 70450) are medically necessary for any of the following:
  - Headache accompanied by seizures, vomiting, focal neurological complaints including dizziness, visual change, altered mental status, or acute hypertension
  - Abnormal examination findings (including, but not limited to, altered mental status, papilledema, focal signs or symptoms including unilateral weakness or sensory loss, hyperreflexia, clonus, increased tone, Hoffman or Babinski sign, loss of coordination, seizures, gait disturbance, cranial nerve abnormality, vision loss, nystagmus, dysarthria, dysphagia, fever, meningismus)
  - For papilledema, see **Papilledema/Pseudotumor Cerebri (HD-17.1)**
- Chronic headache with significant change in character, severity, or frequency of headache (for example: progressively worsening headache over a period of days or weeks, transformation of established migraine to chronic daily headaches), the following are medically necessary:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - CT Head without contrast (CPT® 70450)
  - MRA/MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA/CTV Head (CPT® 70496) is medically necessary as an addition to evaluate the recent onset of a progressive, severe, daily headache, with or without papilledema and concern for cerebral venous sinus thrombosis.
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only **ONE** CPT® code should be used to report both procedures.
- Advanced imaging of the head is **NOT** medically necessary for any of the following:
  - Primary headache disorder in the absence of focal neurological deficits or “red flags” (See **Headaches with Red Flags (HD-11.2)** and **Advanced Imaging Indications Related to Migraines (HD-11.17)**)
  - Newly diagnosed migraine or tension-type headache with a normal neurologic exam or for chronic stable headache including migraine with no neurologic deficit.

Background and Supporting Information

- The yield of detecting abnormal, treatable lesions by CT or MRI in individuals with headache but normal neurological exam has been found to be low.

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Headache and Suspected Vascular Dissection (HD-11.1)

HD.HA.0011.1.A
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Criteria

- CTA Neck (CPT® 70498) and MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) are considered medically necessary in the evaluation for headache with suspected carotid or vertebral artery dissection and in certain high-risk scenarios including, but not exclusive to: Fibromuscular dysplasia (FMD), Marfan disease, acute MVA with whiplash, and acute headache and/or neck pain due to chiropractic manipulation.
  - CTA Head (CPT® 70496) or MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) is considered medically necessary if there is concern for extension of a carotid dissection to the skull base or above. CTA Head and Neck (CPT® 70471) must be substituted when both CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed during the same session.
  - Evaluation of posterior circulation disease requires both neck and head MRA/CTA to visualize the entire vertebro-basilar system.
- MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498) is considered medically necessary if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist, neurosurgeon, interventional radiologist, interventional cardiologist or any provider in consultation with one of the above named specialists).
- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496, or CPT® 70498) is considered medically necessary if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist, neurosurgeon, interventional radiologist, interventional cardiologist or any provider in consultation with one of the above named specialists).
- Other vascular imaging indications for headaches require additional information.
  - See **Stroke/TIA (HD-21.1)**, **Sudden Onset of Headache (HD-11.3)**, **New Headache Onset Older than Age 50 (HD-11.7)**, **Abnormal Blood Clotting (HD-11.9)**, **Pregnancy (HD-11.10)**, **Physical Exertion (HD-11.11)**, and **Systemic Infections (HD-11.13)**

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Headaches with Red Flags (HD-11.2)

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Criteria

- Headaches with any of the following Red Flags:
  - If any of the below unusual symptoms or history are present, advanced imaging studies are considered medically necessary (see relevant section):
    - Cancer history or immunosuppression (see **Cancer or Immunosuppression (HD-11.8)**)
    - Sudden onset (see **Sudden Onset of Headache (HD-11.3)**)
    - New onset age >50 (see **New Headache Onset Older than Age 50 (HD-11.7)** and **Migraine Exceptions (HD-11.17)**)
    - History of head trauma (see **Headaches Associated with Head Trauma (HD-11.12)**, and **Head and Facial Trauma (HD-13)**)
    - Headache precipitated by cough or Valsalva, physical exertion, or sexual activity (see **Physical Exertion (HD-11.11)**)
    - Currently pregnant (including pregnancy and the immediate postpartum period) (see **Pregnancy (HD-11.10)**)
    - Hypercoagulable state or bleeding disorder (see **Abnormal Blood Clotting (HD-11.9)**)
    - New persistent headache (see **Migraine Exceptions (HD-11.17)**)
    - Headache awakens individual from sleep (see **Sudden Onset of Headache (HD-11.3)**)

Background and Supporting Information

Aura symptoms may accompany or precede a headache within 60 minutes and may include, but are not exclusive to, the following symptoms:

- Visual (flashing lights, loss of vision)
- Sensory (paresthesia)
- Speech and/or language (difficulty speaking)
- Motor (any weakness)
- Brainstem (dizziness, double vision) and retinal (visual complaints)

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Sudden Onset of Headache (HD-11.3)

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Criteria

- For sudden onset of headache including:
  - worst, most severe headache ever experienced or thunderclap-type (example: awakening from sleep)
  - sudden onset unilateral headache, suspected carotid or vertebral dissection or ipsilateral Horner's syndrome
  - consideration of reversible cerebral vasoconstriction syndrome (RCVS) (typically bilateral headache)
  - high-risk scenarios including Fibromuscular Dysplasia (FMD), Marfan Disease, MVA with whiplash, and chiropractic manipulation
- If any of these onset of headache features are present, the following are considered medically necessary:
  - CT Head without contrast (CPT® 70450) **OR** MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) **AND/OR**
  - CTA Head (CPT® 70496) **or** MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546)
  - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR** CTA Neck (CPT® 70498) if carotid or vertebral artery dissection is suspected
    - CTA Head and Neck (CPT® 70471) combination code must be substituted when both CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed in the same session.
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only **ONE** CPT® code should be used to report both procedures
- Repeat MRI Brain and/or MRA/CTA Head and Neck imaging is considered medically necessary in 2-4 weeks if suspicion of Reversible Cerebral Vasoconstriction Syndrome (RCVS) is high and to follow up until resolution of vasospasm, edema and/or hemorrhage, at the discretion of the neurologist, neurosurgeon, hematologist, or physiatrist, or any provider in consultation with a neurologist, neurosurgeon, hematologist, or physiatrist
- MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498) is considered medically necessary if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist, neurosurgeon, interventional

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radiologist, interventional cardiologist, or any provider in consultation with one of the above named specialists).

- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496, CPT® 70498) is considered medically necessary if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist or neurosurgeon or any provider in consultation with a neurologist, neurosurgeon, interventional radiologist, interventional cardiologist, or any provider in consultation with one of the above named specialists).
- CTA Head and Neck (CPT ® 70471) combination code must be substituted when both CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed in the same session
- Other vascular imaging indications for headaches require additional information.
  - See **Stroke/TIA (HD-21.1)**, **New Headache Onset Older than Age 50 (HD-11.7)**, **Abnormal Blood Clotting (HD-11.9)**, **Pregnancy (HD-11.10)**, **Physical Exertion (HD-11.11)**, **Cerebral Aneurysms (HD-12.1)** and **Systemic Infections (HD-11.13)**

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Trigeminal Autonomic Cephalgias (HD-11.4)

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Criteria

- For trigeminal autonomic cephalgias and cluster headache, the following are considered medically necessary:
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - MRI Brain without contrast (CPT® 70551)
  - May also include pituitary screening (see **Pituitary, Sella, Hypothalamus (HD-19)**)
- For facial pain (see **Trigeminal Neuralgia and other Centrally Mediated Facial Pain Syndromes (HD-10))**

Background and Supporting Information

Trigeminal autonomic cephalgias includes cluster headache, short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) syndromes; short-lasting unilateral neuralgiform headache attacks with cranial autonomic symptoms (SUNA) and hemicrania paroxysmal and continua.

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Skull Base, Orbit, Periorbital or Oromaxillary (HD-11.5)

HD.HA.0011.5.A
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Criteria

- Skull base, orbital, periorbital or oromaxillary imaging is considered medically necessary for concern of skull base tumors in individuals with head and neck cancers, other skull base abnormalities seen on previous imaging, any invasive sinus infections as well as sinus tumors or orbital tumors with intracranial extension.
- In these clinical scenarios, the following studies are considered medically necessary:
  - MRI Brain and/or Orbits/Face/Neck without and with contrast (CPT® 70553 and/or CPT® 70543) **OR**
  - MRI Brain and/or Orbits/Face/Neck without contrast (CPT® 70551 and/or CPT® 70540) **OR**
  - CT Head and/or Orbits/Temporal bone without and with contrast (CPT® 70470 and/or CPT® 70482) **OR**
  - CT Head and/or Orbits/Temporal bone with contrast (CPT® 70460 and/or CPT® 70481)

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Suspected Intracranial Extension of Sinusitis or Mastoiditis (HD-11.6)

HD.HA.0011.6.A
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Criteria

- For suspected intracranial extension of sinusitis or mastoiditis, the following is considered medically necessary:
  - MRI Brain without and with contrast (CPT® 70553)
  - See **Mastoid Disease or Ear Pain (HD-26.1)** and **Skull Base, Orbit, Periorbital or Oromaxillary (HD-11.5)**

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New Headache Onset Older than Age 50 (HD-11.7)

HD.HA.0011.7.A
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Criteria

- For new onset headache in individuals older than 50 years of age, the following are considered medically necessary:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - CT Head without contrast (CPT® 70450)
  - If Giant Cell Arteritis, also known as Temporal Arteritis, is suspected, MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546), see **Cerebral Vasculitis (HD-22)**

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Cancer or Immunosuppression (HD-11.8)

HD.HA.0011.8.A
v1.0.2027

Criteria

- For new headache in individuals with cancer, history of cancer, or those who are immunocompromised, the following are considered medically necessary:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - MRI Brain without and with contrast (CPT® 70553)
- For CT imaging in the setting of individuals with cancer, with history of cancer or who are immunocompromised, see **General Guidelines – CT Head (HD-1.4)**
- See also **Primary Central Nervous System Tumors – General Considerations (ONC-2.1)** and **Brain Metastases (ONC-31.3)**

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Abnormal Blood Clotting (HD-11.9)

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Criteria

- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) **OR** CT Head without contrast (CPT® 70450) is considered medically necessary for:
  - new onset headaches in individual with hypercoagulable states or bleeding disorder
    - MRA/MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA/CTV Head (CPT® 70496) is considered medically necessary, in addition, for venogram when requested.
      - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only **ONE** CPT® code should be used to report both procedures
  - individuals with new onset headaches and potential for bleeding diathesis
    - Taking anticoagulants or two or more anti-aggregants or having a medical condition that predisposes to bleeding (for example, but not limited to: thrombocytopenia, liver failure, idiopathic thrombocytopenic purpura (ITP), etc.).

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Pregnancy (HD-11.10)

HD.HA.0011.10.A
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Criteria

- For new onset headache during pregnancy or immediate post-partum period (within 3 months after delivery), ANY or ALL of the following are considered medically necessary:
  - MRI Brain without contrast (gadolinium relatively contraindicated in pregnancy) (CPT® 70551)
  - CT Head without contrast (CPT® 70450) if urgent
  - MRA/MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA/CTV Head (CPT® 70496) when venogram is requested
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code should be used to report both procedures. (gadolinium relatively contraindicated in pregnancy)
    - Vascular imaging is considered medically necessary concurrently with brain imaging
- Important causes of secondary headache include vascular disorders, such as pre-eclampsia, reversible cerebral vasoconstriction syndrome, and cerebral venous thrombosis, as well as idiopathic intracranial hypertension
- For post-LP/epidural anesthesia, see **Low-Pressure Headache and CSF Leak (HD-11.15)**

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Physical Exertion (HD-11.11)

HD.HA.0011.11.A
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Criteria

- For onset of headache with Valsalva maneuver, cough, physical exertion, change in position, **or** sexual activity, but not merely a worsening of a pre-existing headache with these activities, the following procedures are considered medically necessary:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - CT Head without contrast (CPT® 70450) **AND/OR**
  - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR**
  - CTA Head without and with contrast (CPT® 70496)
  - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498) if carotid or vertebral artery dissection or aneurysm is suspected
    - CTA Head and Neck (CPT ® 70471) combination code must be substituted when both CTA Head (CPT® 70496) and CTA Neck (CPT® 70498) are performed in the same session.

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Headaches Associated With Head Trauma (HD-11.12)

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Criteria

- For new or progressively worsening headache with subacute head trauma, defined as within 7 days to three months post-trauma, with or without unexplained cognitive or neurologic deficits, the following are considered medically necessary:
  - CT Head without contrast (CPT® 70450) **OR**
  - MRI Brain without contrast (CPT® 70551)
- For persistent headaches attributed to traumatic injury to the head persisting for longer than 3 months following the injury, with or without unexplained cognitive or neurologic deficits, the following are considered medically necessary:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - CT Head without contrast (CPT® 70450)
- MRI Brain without and with contrast (CPT® 70553) is medically necessary if post-traumatic infection is suspected
- Acute head trauma with headache, (see **Head Trauma (HD-13.1))**
- Acute headache attributed to traumatic injury to the head that developed within 7 days of injury that does not meet criteria under **Head and Facial Trauma (HD-13)**, other subsections may apply including, but not exclusive to: **Headaches with Red Flags (HD-11.2)** and **Sudden Onset of Headache (HD-11.3)**

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Systemic Infections (HD-11.13)

HD.HA.0011.13.A
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Criteria

- For headaches in the setting of acute, subacute, or chronic systemic infections, the following are considered medically necessary:
  - MRI Brain without contrast (CPT® 70551); or MRI Brain without and with contrast (CPT® 70553)
  - MRA/MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546)
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code should be used to report both procedures
  - CT Head without contrast (CPT® 70450) or CT Head without and with contrast (CPT® 70470), when MRI Brain is contraindicated (see **General Guidelines – CT Head (HD-1.4)** for additional CT Head indications)
  - CT Head without (CPT® 70450) prior to performance of lumbar puncture (aka spinal tap)
- See **CNS and Head Infection (HD-14.1)**
- See **Neuro-COVID-19 and Sars-CoV-2 Vaccines (HD-14.2)** for headache related to neuro-COVID-19 or SARS-CoV-2 vaccines

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Hydrocephalus Shunts (HD-11.14)

HD.HA.0011.14.C
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Initial Imaging Indications

- MRI Brain without and with contrast (CPT® 70553) is medically necessary.

Repeat Imaging Indications including CSF flow shunting and Ventriculostomy

- MRI Brain without contrast (CPT® 70551) or CT Head without contrast (CPT® 70450) is medically necessary for any of the following:
  - New signs or symptoms suggesting shunt malfunction or endoscopic third ventriculostomy (ETV) malfunction
    - Symptoms may include but are not limited to: sepsis after shunt setting adjustments, decreased level of consciousness, protracted vomiting, visual or neurologic deterioration, decline of mentation after initial improvement, or new or changing pattern of seizures.
  - Requests ordered by a neurologist, neurosurgeon, or any provider in consultation with a neurologist or neurosurgeon.
- MRI Brain without contrast (CPT® 70551) or CT Head without contrast (CPT® 70450) is medically necessary in the post-operative period following shunt placement or ETV, with further follow-up imaging 6-12 months after the procedure and then every 12 months for individuals with stable clinical findings.
- Shunting into the peritoneum (VP shunts) can give rise to abdominal complications, but these are generally symptomatic, so surveillance imaging of the abdomen is not medically necessary unless ordered by or in consultation with neurology, neurosurgery, or interventional radiology.
  - Abdominal ultrasound (CPT® 76700) **AND/OR** CT Abdomen or CT Abdomen/Pelvis (contrast as requested), is medically necessary depending on the clinical suspicion
    - Examples include, but are not limited to, suspicion of CSF pseudocyst formation, distal shunt outlet obstruction, or infection.
- See **General Guidelines – Other Imaging Situations (HD-1.7)**

Additional Rarely Used Studies

- Cisternogram (CPT® 78630) is medically necessary for the following:
  - Known hydrocephalus with worsening symptoms.
  - Suspected obstructive hydrocephalus.
  - Suspected normal pressure hydrocephalus with gait disturbance and either dementia or urinary incontinence.

  - For indications related to CSF Leak, (see **Low-Pressure Headache and CSF Leak (HD-11.15)**)
- Cerebrospinal Ventriculography (CPT® 78635) is medically necessary for the following:
  - Evaluation of internal shunt, porencephalic cyst, or posterior fossa cyst.
- Nuclear Medicine Shunt Evaluation (CPT® 78645) and CSF Flow SPECT (CPT® 78803) is medically necessary for the following:
  - Suspected malfunction of ventriculoperitoneal, ventriculopleural, or ventriculovenous shunts.
- For CSF flow imaging, see **CSF Flow Imaging (HD-24.4)**
- See also **General Guidelines - CT Head (HD-1.4)**

Background and Supporting Information

- Ventriculomegaly is the condition where ventricles are enlarged, and this may be due to 1) hydrocephalus, a condition of increased intracranial pressure (ICP) (imaging shows ventricles are disproportionately enlarged compared to sulci), or 2) brain atrophy, most commonly related to age or trauma, which is not associated with increased ICP (imaging shows ventricles and sulci are proportionately enlarged).
- Hydrocephalus is divided into obstructive/non-communicating vs. communicating types, and these usually have different etiologies and radiographic features.
- Obstructive or non-communicating hydrocephalus classically involves an intraventricular obstruction in which CSF flow over the convexities and between the ventricles is reduced, and the proximal ventricle(s) is/are dilated. This is a medical emergency.
- Communicating hydrocephalus involves extraventricular obstruction, poor absorption or overproduction of CSF. There is normal intracranial CSF flow and absence of disproportionate ventricular dilation, yet there is still a mildly increased CSF pressure. Normal pressure hydrocephalus is an example of this type.
- Distinguishing between ventriculomegaly due to brain atrophy and non-communicating hydrocephalus can be difficult with MRI Brain or CT Head alone, and modalities which visualize CSF flow may be useful such as cisternography or CT cisternography.

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Low-Pressure Headache and CSF Leak (HD-11.15)

HD.HA.0011.15.A
v1.0.2027

Criteria

- Evaluation of suspected CSF leak (rhinorrhea/otorrhea) or refractory post-lumbar puncture headache, post-spinal surgery headache, orthostatic headache, or low-pressure headache:

Indication	Medically Necessary Imaging
Intracranial imaging	• MRI Brain without contrast (CPT® 70551) or • MRI Brain without and with contrast (CPT® 70553)
Spinal imaging (MRI)	• MRI Cervical Spine without contrast (CPT® 72141) or without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) or without and with contrast (CPT® 72157) **AND/OR** • MRI Lumbar Spine without contrast (CPT® 72148) or without and with contrast (CPT® 72158)
Spinal imaging, post-myelogram	• CT Cervical Spine with contrast (CPT® 72126) **AND/OR** • CT Thoracic Spine with contrast (CPT® 72129) **AND/OR** • CT Lumbar Spine with contrast (CPT® 72132)
Spinal imaging, MR myelogram	• MRI Spine, contrast as requested • Requests following initial negative/non-diagnostic MRI Spine and MRI Brain are also considered medically necessary

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Indication	Medically Necessary Imaging
Cisternogram, radionucleotide (111 In-DTPA)	• Radionucleotide cisternogram (CPT® 78630)
Cisternogram, post-myelogram (iodinated contrast)	• CT Head with contrast (CPT® 70460) **OR** • CT Maxillofacial with contrast (CPT® 70487) **OR** • CT Temporal Bone with contrast (CPT® 70481)
Symptoms of CSF rhinorrhea or otorrhea	• CT Head without contrast (CPT® 70450) **AND/OR** • CT Maxillofacial without contrast (CPT® 70486) **OR** • CT Temporal Bone without contrast (CPT® 70480)

- Additional Cisternogram (CPT® 78630) indications:
  - Known hydrocephalus with worsening symptoms (for example headache)
  - Suspected obstructive hydrocephalus
- Individuals with a Shunt (see **Hydrocephalus Shunts (HD-11.14)**)

Background and Supporting Information

- Common radiological findings of CSF leaks include abnormalities of the cribriform plate or ethmoid sinus, dural dehiscence at the anterior skull base, pneumatization of the sphenoid sinus, and fluid within the middle ear.
- CSF leaks may occur in:
  - CSF shunt over-drainage
  - traumatic CSF leaks
    - Thecal holes and rents from lumbar punctures and epidural catheterizations
    - Spinal and cranial surgeries including skull base and some sinus surgeries
    - Proximal brachial plexus and nerve root avulsion injuries
  - Spontaneous leaks may occur in, but are not exclusive to:
    - Pre-existing weakness of the dural sac including:
      - disorders of connective tissue matrix including Marfan syndrome, Marfanoid features

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  - joint hypermobility
- Trivial trauma in the setting of preexisting dural weakness
- Spondylotic spurs, herniated discs

Head Imaging Guidelines

Cervicogenic Headaches Including Occipital Neuritis/Neuralgia (HD-11.16)

HD.HA.0011.16.A
v1.0.2027

Criteria

- Brain imaging should follow applicable sections in **Headache (HD-11)**
- MRI Cervical Spine without contrast (CPT® 72141) is considered medically necessary for:
  - failure of 6-week trial of provider-directed treatment after the current set of symptoms or physical exam findings started or changed and clinical re-evaluation after treatment period (unless presence of a red flag) as defined in **Red Flag Indications (SP-1.2)**
    - See **Neck (Cervical Spine) Pain Without/With Neurological Features (Including Stenosis) (SP-3.1)** and **Neck (Cervical Spine) Trauma (SP-3.2)** in the Spine Imaging Guidelines
    - Exemptions to the 6 weeks of conservative care include:
      - high-risk mechanism of cervical spine injury within the last 3 months (see **Neck (Cervical Spine) Trauma (SP-3.2)** in the Spine Imaging Guidelines)
      - **Red Flag Indications (SP-1.2)** in the Spine Imaging Guidelines
      - **ANY** of the following:
        - Bony abnormalities: Atlanto-axial dislocations/instability (including but not limited to: Down's syndrome, Ehlers-Danlos and Marfan syndromes and rheumatoid arthritis), platybasia, osteomas, callous formation of the posterior C1/2 arches
        - Posterior fossa lesions, Chiari malformations, demyelinating disease
        - Myelopathy/myelitis (see **Myelopathy (SP-7.1)** in the Spine Imaging Guidelines)

Background and Supporting Information

- Cervicogenic Headache
  - Headache caused by a disorder of the cervical spine, usually accompanied by neck pain or other signs and symptoms of cervical disease. Typical findings include reduced cervical range of motion, side-locked pain, and symptoms exacerbated by provocative maneuvers such as head movement or digital pressure.
- Occipital Neuralgia/Neuritis - Occipital neuralgia is classified unilateral or bilateral paroxysmal, shooting or stabbing pain in the posterior part of the scalp, in the

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distribution(s) of the greater, lesser and/or third occipital nerves, sometimes accompanied by diminished sensation or dysaesthesia in the affected area and commonly associated with tenderness over the involved nerve(s).

- Pain has at least two of the following three characteristics:
  - Recurring in paroxysmal attacks lasting from a few seconds to minutes
  - Severe in intensity
  - Shooting, stabbing or sharp in quality
- Pain is associated with both of the following:
  - Dysaesthesia and/or allodynia apparent during innocuous stimulation of the scalp and/or hair
  - Either or both of the following:
    - Tenderness over the affected nerve branches
    - Trigger points at the emergence of the greater occipital nerve or in the distribution of C2
- Pain is eased temporarily by local anesthetic block of the affected nerve(s)

Advanced Imaging Indications Related To Migraines (HD-11.17)

HD.HA.0011.17.A
v1.0.2027

Criteria

- Advanced imaging of the head is considered **NOT** medically necessary for newly diagnosed migraine with a normal neurological exam or chronic stable migraine with no neurological deficit and/or no red flags (see **Headaches with Red Flags (HD-11.2)**).
  - See below for advanced imaging indications related to migraines.
- New migraine with age 50 years of age or older (see **New Headache Onset Older than Age 50 (HD-11.7)**)
- Change in frequency or severity of migraine (see **Headaches with Red Flags (HD-11.2)**)
- MRI Brain without (CPT® 70551) or MRI Brain without and with (CPT® 70553) or CT Head without (CPT® 70450) for the following:
  - Unusual, prolonged, or persistent aura (greater than 60 minutes) (See *Background and Supporting Information*)
  - Worst migraine
  - Hemiplegic migraine
    - Migraine with any motor weakness.
  - Migrainous accompaniments
    - Passing neurological symptoms that can affect vision, speech, movement, and behavior-“mimic stroke”
  - Migraine aura without headache
    - Migraine with an aura in which the aura is neither accompanied nor followed by a headache within 60 minutes.
  - Side-locked migraine (unilateral)
    - Unilateral hemicranial pain – includes primary and secondary causes.
      - New daily persistent headache (new daily headache present greater than three months)
      - Trigeminal autonomic cephalgias includes cluster headache short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) syndromes; short-lasting unilateral neuralgiform headache attacks with cranial autonomic symptoms (SUNA) and hemicrania paroxysmal and continua are covered in **Trigeminal Autonomic Cephalgias (HD-11.4)**
  - Post-traumatic migraine

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- See **Head Trauma (HD-13.1)** and **Headaches Associated with Head Trauma (HD-11.12)**

Background and Supporting Information

- Aura symptoms may accompany or precede a headache within 60 minutes and may include, but are not exclusive to, the following symptoms:
  - Visual (flashing lights, loss of vision)
  - Sensory (paresthesia)
  - Speech and/or language (difficulty speaking)
  - Motor (any weakness)
  - Brainstem (double vision) and retinal (visual complaints)

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Evidence Discussion (HD-11)

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- The majority of headaches are due to benign causes and are self-limited. The yield of positive findings on a CT Head for evaluation of headache in the emergency department setting ranged from 7% to 13% (Utukuri et al., 2022).
- The American College of Radiology in the Choosing Wisely campaign recommended against imaging for primary headache syndromes in the absence of "red flags" and with a normal neurologic exam (Utukuri et al., 2022; Loder et al., 2013). The American Headache Society and Choosing Wisely Task Force stated that the overuse or misuse of imaging studies for headache was the most commonly mentioned problem (Loder, et al., 2013). Overuse of CT Head was identified as the main concern. The authors note that a single CT scan of the head exposes individuals to an average of 2 millisievert (mSV) of radiation, the equivalent of 8 months of background radiation (Loder et al., 2013).
- Incidental findings are common and can result in anxiety for the individual, additional referrals and specialist consults, and more imaging studies (Ray & Hutton, 2022; Morris et al., 2009). Incidental findings on MRI occur in 2% of the general population (Morris et al., 2009).
- The American Headache Society and the American Academy of Neurology recommended neuroimaging in individuals with headaches with atypical features, "red flags", and/or abnormal neurologic exam findings (Utukuri et al., 2022; Evans et al., 2020; Frishberg et al., 2000).
- The presence of neurologic or systemic signs, new headaches over age 50, or headaches in the setting of malignancy or immunosuppression, always require further evaluation with advanced imaging, and are considered "red flags," due to the higher likelihood of intracranial pathology (Utukuri et al., 2022; Ray & Hutton, 2022; Do et al., 2019; Holle & Obermann, 2013). CT Head in the presence of "red flags" is helpful to exclude intracranial hemorrhage (Utukuri et al., 2022). However, MRI Brain has higher contrast resolution than CT Head and is preferred for evaluation of structural pathologies, particularly in non-urgent settings (Utukuri et al., 2022).
- Subarachnoid hemorrhage due to ruptured cerebral aneurysm accounts for 4%-12% of acute severe headaches (Utukuri et al., 2022). CT Head is considered medically necessary as initial imaging for thunderclap headache. CT Head had a negative predictive value between 99.9%-100% in detecting aneurysmal subarachnoid hemorrhage within 6 hours of headache onset. The sensitivity is over 90% when CT Head is performed within the first 24 hours. CT Angiography (CTA) Head obtained concurrently or in follow up may identify cerebral aneurysm, dissection, and reversible cerebral vasoconstriction syndrome (Utukuri et al., 2022).

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- In selected cases, CT Head is supported for evaluation and follow up of headache caused by subdural or epidural hemorrhage, skull fracture, sinus infection or subarachnoid hemorrhage (Ray & Hutton, 2022).
- New headaches in the setting of pregnancy and the postpartum period require special consideration (Utukuri et al., 2022; Ray & Hutton, 2022; Shoberi & Torabinejad, 2019).
- Over a third of pregnant women presenting to the hospital with headache have a secondary cause (Utukuri et al., 2022; Raffaelli et al., 2018; Shoberi & Torabinejad, 2019). Of individuals with headache in the immediate postpartum period, 41% had an abnormal MRI Brain (Shoberi & Torabinejad, 2019).
  - Imaging in this scenario includes MRI Brain, MR Venogram (MRV) Head, and/or MR Angiography (MRA) Head. Gadolinium contrast is relatively contraindicated during pregnancy and should be avoided (Utukuri et al., 2022).
- Trigeminal autonomic cephalgias, including cluster headaches, are required to have MRI brain to exclude pathology in the pituitary region (Utukuri et al., 2022; Ray & Hutton, 2022). MRI should include the brain and the pituitary region (Utukuri 2022 et al.; Evans et al., 2020).
- Headaches concerning for raised intracranial pressure or intracranial hypotension, required additional evaluation with neuroimaging (Utukuri et al., 2022; Frishberg et al., 2000). To exclude hydrocephalus, a mass, or cerebral venous sinus thrombosis, MRI Brain, Orbits, and Venogram are considered medically necessary in the setting of papilledema and/or intracranial hypertension (Utukuri et al.. 2022; Frishberg et al., 2000). In urgent cases, a CT Head can rapidly diagnose causes such as mass, edema, or hydrocephalus (Utukuri et al., 2022).
- MRI is also useful to evaluate for structural causes of headache due to intracranial hypotension and cerebrospinal (CSF) leaks (Utukuri et al., 2022; Frishberg et al., 2000). Depending on the suspected source of the leak, imaging the brain and spinal cord may be required. Spinal imaging may include MRI of the spinal cord, or CT myelogram (Utukuri et al.,2022).
- In the evaluation of headaches from suspected intracranial hypotension with negative initial brain and spine imaging, and high clinical suspicion of a CSF leak, MR myelography is indicated to detect subtle spinal leak sources, such as CSF-venous fistulas and slow meningeal diverticular leaks (Timpone et al., 2024).
- CTA Head or MRA Head in the evaluation of headache are considered medically necessary for suspicion of carotid or vertebral arterial dissections, AVMs and cerebral aneurysm, as secondary causes of headache (Utukuri et al., 2022).
- CT Venogram (CTV) head or MRV head in the evaluation of headache are supported for suspicion of cerebral venous sinus thrombosis or stenosis in select cases, included suspected headache associated with pregnancy and the post-partum period, headache with papilledema, intracranial hypertension, and the trigeminal autonomic cephalgias (Utukuri et al., 2022).

- Computerized tomography (CT) is the gold standard for the evaluation of abdominal complications related to ventriculoperitoneal shunts (VPS) (Ferreira et al., 2021).

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References (HD-11)

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1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
2. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance of myelography and cisternography. https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2026). CPT: Current procedural terminology (1995–2026 ed.). American Medical Association.
4. Barmherzig, R., & Kingston, W. (2019). Occipital neuralgia and cervicogenic headache: Diagnosis and management. *Current Neurology and Neuroscience Reports*, 19(5), 20. https://doi.org/10.1007/s11910-019-0937-8
5. Burch, R. (2019). Headache in pregnancy and the puerperium. *Neurologic Clinics*, 37(1), 31–51. https://doi.org/10.1016/j.ncl.2018.09.004
6. Chou, D. E. (2018). Secondary headache syndromes. *CONTINUUM: Lifelong Learning in Neurology*, 24(4), 1179–1191. https://doi.org/10.1212/CON.0000000000000640
7. Doddamani, R. S., Meena, R. K., Sawarkar, D., Aggarwal, D., & Chandra, P. S. (2020). Management options in occipital neuralgia: A review. *Journal of Peripheral Nerve Surgery*, 4(1), 1–7.
8. Do, T. P., Remmers, A., Schytz, H. W., Schankin, C., Nelson, S. E., Obermann, M., Hansen, J. M., Sinclair, A. J., & Ashina, M. (2019). Red and orange flags for secondary headaches in clinical practice: SNNOOP10 list. *Neurology*, 92(3), 134–144. https://doi.org/10.1212/WNL.0000000000006697
9. Dobrocky, T., Nicholson, P., Häni, L., Mordasini, P., Raabe, A., Pangalu, A., Ulrich, C. T., Beck, J., Sailer, M., Gralla, J., & Krings, T. (2022). Spontaneous intracranial hypotension: Searching for the CSF leak. *The Lancet Neurology*, 21(4), 369–380. https://doi.org/10.1016/S1474-4422(21)00423-3
10. Eldalya, R. W., Parsons, M. S., Hutchins, T. A., Corey, A. S., Burns, J., Policeni, B., & Expert Panel on Neurologic Imaging. (2024). ACR Appropriateness Criteria® cervical pain or cervical radiculopathy. American College of Radiology. https://acsearch.acr.org/docs/69426/Narrative/
11. Evans, R. W., Burch, R. C., Frishberg, B. M., Marmura, M. J., Mechtler, L. L., Silberstein, S. D., & American Headache Society. (2020). Neuroimaging for migraine: The American Headache Society systematic review and evidence-based guideline. *Headache*, 60(2), 318–336. https://doi.org/10.1111/head.13720
12. Expert Panel on Neurologic Imaging, Salmela, M. B., Mortazavi, S., Agarwal, M., Burns, J., Corey, A. S., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Policeni, B., Rosenow, J. M., Taheri, M. R., & Zander, D. (2017). ACR Appropriateness Criteria® cerebrovascular disease. *Journal of the American College of Radiology,* 14(5S), S34–S61. https://doi.org/10.1016/j.jacr.2017.01.051
13. Expert Panel on Neurological Imaging, Shih, R. Y., Burns, J., Policeni, B., Corey, A. S., Agarwal, M., Block, A. M., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., & Zander, D. (2021). ACR Appropriateness Criteria® head trauma: 2021 update. *Journal of the American College of Radiology*, 18(5S), S13–S36. https://doi.org/10.1016/j.jacr.2021.01.006
14. Ferreira Furtado, L. M., da Costa Val Filho, J. A., Moreira Faleiro, R., Lima Vieira, J. A., & Dantas dos Santos, A. K. (2021). Abdominal complications related to ventriculoperitoneal shunt placement: A comprehensive review of literature. *Cureus*, 13(2), e13230. https://doi.org/10.7759/cureus.13230
15. Florczyk, S., Elliott, T., Lawrence, K., Penwell-Waines, L., & Robes, C. (2024). Headache treatment options. *Journal of the American Board of Family Medicine*, 37(4), 737–744. https://doi.org/10.3122/jabfm.2023.230450R1
16. Frishberg, B., Rosenberg, J., Matchar, D., McCrory, D., Pietrzak, M., Rozen, T., Silberstein, S., & American Academy of Neurology. (2000). Evidence-based guidelines in the primary care setting: Neuroimaging in patients with nonacute headache. American Academy of Neurology.
17. Ghritlaharey, R. K. (2023). Management of ventriculoperitoneal shunt complications in children: A review of 34 cases. African Journal of Paediatric Surgery, 20(2), 109–115. https://doi.org/10.4103/ajps.ajps_68_21

18. Headache Classification Committee of the International Headache Society. (2018). The International Classification of Headache Disorders (3rd ed.). *Cephalalgia*, 38(1), 1–211. https://doi.org/10.1177/0333102417738202
19. Henderson, F. C., Sr., Austin, C., Benzel, E., Bolognese, P., Ellenbogen, R., Francomano, C. A., Klinge, P., Koby, M., & Patel, A. (2017). Neurological and spinal manifestations of the Ehlers–Danlos syndromes. American Journal of Medical Genetics Part C: Seminars in Medical Genetics, 175(1), 195–211. https://doi.org/10.1002/ajmg.c.31549
20. Holle, D., & Obermann, M. (2013). The role of neuroimaging in the diagnosis of headache disorders. *Therapeutic Advances in Neurological Disorders*, 6(6), 369–374. https://doi.org/10.1177/1756285613489765
21. International Headache Society. (2018). ICHD-3: Part II—Secondary headaches (11.2.1 Cervicogenic headache). https://ichd-3.org
22. International Headache Society. (2018). ICHD-3: Part III—Neuropathies and facial pains (13.4 Occipital neuralgia). https://ichd-3.org
23. Jamieson, D. G., & McVige, J. W. (2020). Imaging of neurologic disorders in pregnancy. *Neurologic Clinics*, 38(1), 37–64. https://doi.org/10.1016/j.ncl.2019.09.001
24. Jordan, J. E., & Flanders, A. E. (2020). Headache and neuroimaging: Why we continue to do it. *American Journal of Neuroradiology*, 41(7), 1149–1155. https://doi.org/10.3174/ajnr.A6591
25. Kamel, H., Navi, B. B., Sriram, N., Hovsepian, D. A., Devereux, R. B., & Elkind, M. S. V. (2014). Risk of a thrombotic event after the 6-week postpartum period. *New England Journal of Medicine*, 370(14), 1307–1315. https://doi.org/10.1056/NEJMoa1311485
26. Kuan, E. C., Wang, E. W., Adappa, N. D., Palmer, J. N., Chiu, A. G., Kennedy, D. W., & International Consensus Panel. (2024). International consensus statement on allergy and rhinology: Sinonasal tumors. *International Forum of Allergy & Rhinology,* 14(2), 149–608. https://doi.org/10.1002/alr.23262
27. Labastida-Ramírez, A., Benemei, S., Albanese, M., Cortese, F., Fumal, A., Deleu, D., & Schoenen, J. (2020). Persistent post-traumatic headache: A migrainous loop or not? *Journal of Headache and Pain*, 21(1), 55. https://doi.org/10.1186/s10194-020-01122-5
28. Loder, E., Weizenbaum, E., Frishberg, B., & Silberstein, S. (2013). Choosing wisely in headache medicine. *Headache*, 53(10), 1651–1659. https://doi.org/10.1111/head.12233
29. Morris, Z., Whiteley, W. N., Longstreth, W. T., Weber, F., Lee, Y. C., Tsushima, Y., & Wardlaw, J. M. (2009). Incidental findings on brain MRI: Systematic review and meta-analysis. *BMJ*, 339, b3016. https://doi.org/10.1136/bmj.b3016
30. Nahas, S. J. (2021). Cluster headache and other trigeminal autonomic cephalalgias. *CONTINUUM: Lifelong Learning in Neurology*, 27(3), 633–651. https://doi.org/10.1212/CON.0000000000000965
31. O'Neill, F., Nurmikko, T., & Sommer, C. (2017). Other facial neuralgias. *Cephalalgia*, 37(7), 658–669. https://doi.org/10.1177/0333102417689995
32. Pannell, J. S., Corey, A. S., Shih, R. Y., Burns, J., Policeni, B., Agarwal, M., Block, A. M., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., & Zander, D. (2023). ACR Appropriateness Criteria® cerebrovascular diseases—Stroke and stroke-related conditions. American College of Radiology. https://acsearch.acr.org/docs/3149012/Narrative/
33. Perillo, T., Paolella, C., Perrotta, G., Serino, A., Caranci, F., & Manto, A. (2022). Reversible cerebral vasoconstriction syndrome: Review of neuroimaging findings. *La Radiologia Medica*, 127(9), 981–990. https://doi.org/10.1007/s11547-022-01532-2
34. Pruitt, A. A. (2018). Central nervous system infections complicating immunosuppression and transplantation. *CONTINUUM: Lifelong Learning in Neurology*, 24(5), 1370–1396. https://doi.org/10.1212/CON.0000000000000653
35. Raffaelli, B., Rubio-Beltrán, E., Cho, S. J., Tana, C., De Icco, R., Ornello, R., Benemei, S., & Jensen, R. H. (2023). Health equity, care access and quality in headache—Part 2. *The Journal of Headache and Pain*, 24(1), 167. https://doi.org/10.1186/s10194-023-01699-7
36. Ray, J. C., & Hutton, E. J. (2022). Imaging in headache disorders. Australian Prescriber, 45, 88–92. https://doi.org/10.18773/austprescr.2022.023
37. Rayhill, M. (2022). Headache in pregnancy and lactation. CONTINUUM: Lifelong Learning in Neurology, 28(1), 72–92. https://doi.org/10.1212/CON.0000000000001070

38. Recober, A. (2021). Pathophysiology of migraine. *CONTINUUM: Lifelong Learning in Neurology*, 27(3), 586–596. https://doi.org/10.1212/CON.0000000000000983
39. Robbins, M. S., Farmakidis, C., Dayal, A. K., & Lipton, R. B. (2015). Acute headache diagnosis in pregnant women. *Neurology*, 85(12), 1024–1030. https://doi.org/10.1212/WNL.0000000000001954
40. Shobeiri, E., & Torabinejad, B. (2019). Brain MRI findings in postpartum headache. *Neuroradiology Journal*, 32(1), 4–9. https://doi.org/10.1177/1971400918804193
41. Smith, J. H. (2021). Other primary headache disorders. *CONTINUUM: Lifelong Learning in Neurology*, 27(3), 652–664. https://doi.org/10.1212/CON.0000000000000960
42. Sweet, J. A., Mitchell, L. S., Narouze, S., Sharan, A., Falowski, S., & Pope, J. E. (2015). Occipital nerve stimulation for the treatment of patients with medically refractory occipital neuralgia. *Neurosurgery*, 77(3), 332–341. https://doi.org/10.1227/NEU.0000000000000872
43. Tana, C., Raffaelli, B., Souza, M. N. P., Cho, S. J., De Icco, R., Ornello, R., Benemei, S., & Jensen, R. H. (2024). Health equity, care access and quality in headache—Part 1. *The Journal of Headache and Pain*, 25(1), 12. https://doi.org/10.1186/s10194-024-01712-7
44. Thurtell, M. J. (2019). Idiopathic intracranial hypertension. *CONTINUUM: Lifelong Learning in Neurology*, 25(5), 1289–1309. https://doi.org/10.1212/CON.0000000000000770
45. Timpone, V. M., Parsons, M. S., Boulter, D. J., Corey, A. S., Burns, J., Policeni, B., Agarwal, M., Block, A. M., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., & Zander, D. (2024). ACR Appropriateness Criteria® imaging of suspected intracranial hypotension. *American College of Radiology*. https://acsearch.acr.org/docs/3195159/Narrative/
46. Utukuri, P. S., Shih, R. Y., Ajam, A. A., Corey, A. S., Burns, J., Policeni, B., & Expert Panel on Neurologic Imaging. (2022). ACR Appropriateness Criteria® headache. American College of Radiology. https://acsearch.acr.org/docs/69482/Narrative/
47. Viera, A. J., & Antono, B. (2022). Acute headache in adults: A diagnostic approach. American Family Physician, 106(3), 260–268. Zamora, C., & Castillo, M. (2022). Role of MRI and CT in the evaluation of headache in pregnancy and the postpartum period. *Neurologic Clinics*, 40(3), 661–677. https://doi.org/10.1016/j.ncl.2022.02.010
48. Zamora, C., & Castillo, M. (2022). Role of MRI and CT in the evaluation of headache in pregnancy and the postpartum period. *Neurologic Clinics*, 40(3), 661–677. https://doi.org/10.1016/j.ncl.2022.02.010

Cerebral Aneurysm and AVM (HD-12)

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Cerebral Aneurysms (HD-12.1)

HD.AN.0012.1.C
v1.0.2027

Disorders and Indications (Any of the following)	Medically Necessary Imaging
Coarctation of the aorta	See **Aortic Coarctation and IAA (interrupted aortic arch) (PEDCD-2.4.11)**
Screening for high-risk populations as defined by the following criteria (screening usually begins at age 20 unless unusual circumstances as aneurysms are uncommon in children and adolescents): • Positive Family History: Two or more first degree relatives (parent, sibling, or child) with history of cerebral aneurysm or SAH: screening every 5 years beginning at age 20. One first degree relative (parent, sibling, or child) with history of cerebral aneurysm or SAH can have one screening study • Autosomal dominant polycystic kidney disease • Alpha-1-antitrypsin deficiency • Alpha-glucosidase deficiency • Azygos anterior cerebral artery (presence of) • Bicuspid aortic valve • Fibromuscular dysplasia (one screening study after confirmed diagnosis) • Ehlers-Danlos Syndrome Type 4 (Vascular) • Glucocorticoid-remediable aldosteronism (GRA) • Hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu Syndrome) See **Screening for Vascular related genetic connective tissue DIsorders (PVD-2.2)**	• CTA Head CPT® 70496) **OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546)

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Disorders and Indications (Any of the following)	Medically Necessary Imaging
Screening for high-risk populations as defined by the following criteria (screening usually begins at age 20 unless unusual circumstances as aneurysms are uncommon in children and adolescents) - ***CONTINUED***: • Kawasaki disease • Klinefelter syndrome • Klippel-Trenaunay-Weber Syndrome • Loeys-Dietz Syndrome • Marfan Syndrome • Microcephalic osteodysplastic primordial dwarfism • Neurofibromatosis Type 1 • Noonan Syndrome • Pheochromocytoma • Pseudoxanthoma elasticum • Tuberculosis sclerosis See **Screening for Vascular related genetic connective tissue DIsorders (PVD-2.2)**	• CTA Head CPT® 70496) **OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546)
New or worsening clinical symptoms or signs of cerebral aneurysm, including: • Thunderclap headache (see **Sudden Onset of Headache (HD-11.3)**) • Third nerve palsy with pupillary involvement (pupil-sparing third nerve palsies are not caused by external compression) • Suspicion of aneurysm bleed [CT head or MRI brain or CSF exam showing evidence of subarachnoid hemorrhage (SAH) or intracerebral hemorrhage] • Abnormal CT Head or MRI Brain suggesting possible aneurysm	• CTA Head (CPT® 70496) **OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **AND/OR** • MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553)
Questionable or equivocal findings on an initial MRA Head	CTA Head (CPT® 70496)

Disorders and Indications (Any of the following)	Medically Necessary Imaging
For suspected or confirmed cerebral aneurysm, ruptured or unruptured, for initial evaluation, treatment, intervention or follow up **OR** If initial catheter angiography is negative, repeat imaging is medically necessary.	3D Rendering (CPT® 76377 or CPT® 76376) with cervicocerebral angiography/arteriography and/ or cerebral angiography (See **General Guidelines-Other Imaging Situations (HD-1.7)**)
Follow-up of known cerebral aneurysm: The optimal interval and duration for radiologic follow-up has not been determined. Radiographic follow-up for unruptured or treated intracranial aneurysms upon request by the neurosurgeon or team managing the intracranial aneurysm.	• CTA Head (CPT® 70496) **OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **AND/OR** • MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553)
Additional physical characteristics of a known aneurysm: • To evaluate and treat a giant aneurysm (>2.5 cm) • Posterior fossa aneurysms • Thrombosed or partially thrombosed aneurysms • To evaluate the relationship of the aneurysm to the dura • To evaluate for the presence of calcification • Other surveillance criteria as per the neurosurgeon or team managing the aneurysm repair	• MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553)
Follow up of cerebral aneurysm located in the vertebro-basilar circulation **OR** If intracranial etiology of SAH has not been found	• MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR** • CTA Neck (CPT® 70498) **OR** • CTA Head and Neck (CPT ® 70471) if performed during the same session

Disorders and Indications (Any of the following)	Medically Necessary Imaging
Subacute complications (i.e., vasospasm, delayed cerebral ischemia, and hydrocephalus), beginning days to weeks, arising from a subarachnoid hemorrhage and/or aneurysm treatment, upon request from the neurosurgeon and/or team managing the episode	CT Head **OR** MRI Brain contrast as requested
To evaluate individuals with SAH and negative studies for brain aneurysm in whom spinal abnormalities (i.e., AVM) may be suspected as the cause of hemorrhage	MRI Spine (Cervical without and with contrast CPT® 72156, **AND/OR** Thoracic without and with contrast CPT® 72157, **AND/OR** Lumbar without and with contrast CPT® 72158)
Catheter angiogram negative in SAH individual with remaining suspicion for cerebral aneurysm and these studies have not yet been performed	• CTA Head (CPT® 70496) **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546)

- High-risk scenarios for vascular dissection include, but are not limited to: Fibromuscular dysplasia (FMD), Marfan Disease, MVA with whiplash, and chiropractic manipulation.
  - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498) if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon)
  - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496, CPT® 70498) if arterial dissection is suspected, or known and re-evaluation is needed (as directed by neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon)
  - CTA Head and Neck (CPT ® 70471) may be substituted, if performed during the same session, for the above indications
- Other vascular imaging indications for headaches require additional information. See **Stroke/TIA (HD-21.1), Sudden Onset of Headache (HD-11.3)**, **New Headache Onset Older than Age 50 (HD-11.7)**, **Abnormal Blood Clotting (HD-11.9)**, **Pregnancy (HD-11.10)**, **Physical Exertion (HD-11.11)**, and **Systemic Infections (HD-11.13)**

Arteriovenous Malformations (AVMs) and Related Lesions (HD-12.2)

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Criteria

Disorders and Indications (Any of the following)	Medically Necessary Imaging
Any aneurysmal and/or AVM disorders listed in this guideline • When MRI contraindicated • Any urgent setting	• CT Head without contrast (CPT® 70450) **AND/OR** • CTA Head (CPT® 70496) **AND/OR** • CTA Neck (CPT® 70498) ◦ CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
Known AVM • When requested by a neurologist, neurosurgeon, or any provider in consultation with a neurologist or neurosurgeon	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRA Head (CPT® 70544, CPT®70545, CPT® 70546) **OR** • CTA Head (CPT® 70496)

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Disorders and Indications (Any of the following)	Medically Necessary Imaging
Known AVM in the vertebral-basilar system • When requested by a neurologist, neurosurgeon, or any provider in consultation with a neurologist or neurosurgeon	• Imaging as listed above in “known AVM” **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, OR CPT® 70549) **OR** • CTA Neck (CPT® 70498) **OR** • CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
Subarachnoid Hemorrhage (SAH) • AVM is suspected based on a history of SAH	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)
Hereditary Hemorrhagic Telangiectasia (HHT; Osler-Weber-Rendu Syndrome) • Suspected based on family history with at least one affected first-degree relative (biological parent or sibling) • At diagnosis, especially if confirmed by genetic testing • Screening for confirmed HHT • Clinical signs or symptoms concerning for disease progression • When requested by a neurologist, neurosurgeon, geneticist, or any provider in consultation with a neurologist, neurosurgeon, or geneticist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **OR** • CTA Head (CPT® 70496)

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Disorders and Indications (Any of the following)	Medically Necessary Imaging
Capillary Malformation-Arteriovenous Malformation (CM-AVM) • Suspected based on family history with at least one affected first-degree relative (biological parent or sibling) • At diagnosis, especially if confirmed by genetic testing • Screening for confirmed CM-AVM • Clinical signs or symptoms concerning for disease progression • When requested by a neurologist, neurosurgeon, geneticist, or any provider in consultation with a neurologist, neurosurgeon, or geneticist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **OR** • CTA Head (CPT® 70496) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146)

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Disorders and Indications (Any of the following)	Medically Necessary Imaging
Cerebral Cavernous Malformations (CCM) • At diagnosis, especially if confirmed by genetic testing • Screening for confirmed CCM • Clinical signs or symptoms concerning for disease progression • When requested by a neurologist, neurosurgeon, geneticist, or any provider in consultation with a neurologist, neurosurgeon, or geneticist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **OR** • CTA Head (CPT® 70496) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146)

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Disorders and Indications (Any of the following)	Medically Necessary Imaging
Microcephalic Osteodysplastic Primordial Dwarfism, Type II (MOPD II) • At diagnosis, especially if confirmed by genetic testing • Screening for confirmed MOPD II, repeated annually • Clinical signs or symptoms concerning for disease progression • When requested by a neurologist, neurosurgeon, geneticist, or any provider in consultation with a neurologist, neurosurgeon, or geneticist	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, CPT® 70546) **OR** • CTA Head (CPT® 70496) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, OR CPT® 70549) **OR** • CTA Neck (CPT® 70498) ◦ CTA Head and Neck (CPT ® 70471) must be substituted if performed during the same session.
Sturge-Weber Syndrome • At diagnosis • Clinical signs or symptoms concerning for disease progression • When requested by a neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRI Orbits/Face/Neck without and with contrast (CPT® 70543) **OR** • MRI Orbits/Face/Neck without contrast (CPT® 70540)

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- MRI Brain without and with contrast (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551), **OR** CT Head without contrast (CPT® 70450) **AND/OR** MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496) is considered medically necessary for symptoms including headache, seizure, and/or focal neurologic deficits
- For concerns related to stroke, see **Stroke/TIA HD-21.1**
- 3D imaging (CPT® 76376 or CPT® 76377) with MRI Brain without and with contrast (CPT® 70553) OR MRI Brain without contrast (CPT® 70551) is considered medically necessary.
- 3D Rendering (CPT® 76377 or CPT® 76376) with cervicocerebral catheter angiography is considered medically necessary to define the presence, location, and anatomy of intracranial and cervical vascular malformations at diagnosis and for follow up, including post-treatment, (see **General Guidelines - Other Imaging Situations (HD-1.7)** and **Background and Supporting Information**).
- See **General Guidelines – CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)**
- Functional MRI (CPT® 70554 OR CPT® 70555) for surgical planning, see **Functional MRI (fMRI) (HD-24.2)**

Background and Supporting Information

- Trauma is the most common reason for subarachnoid hemorrhage. Ruptured berry aneurysm is the most common reason for non-traumatic subarachnoid hemorrhage in adults.
- Small aneurysms are present in about 1% to 2% of adults, but very few ever reach a size for which bleeding is a risk (>5 mm). Small (<3 mm to 4 mm) unruptured aneurysms in those with no personal history of SAH have a 0.1% to 0.5% a year rate of bleeding. The risk of cerebral aneurysm with family history ranges from 2% with one first-degree relative to 30% to 35% for identical twin or two parents. The risks and benefits of screening these populations need to be considered before advanced imaging.
- AVMs most often come to clinical notice either by bleeding or by acting as a seizure focus. They are usually congenital, recognized later in life and have an initial risk of bleeding of 2% per year.
- Cerebral angiography is a form of angiography which provides images of blood vessels in and around the brain and/or neck. This is a catheter-based procedure, using x-ray imaging guidance and iodine-based contrast to visualize blood vessels.
- Most intracranial AVMs are congenital, vary widely in their location and type, and are discovered at birth due to associated clinical findings or incidentally later in life. Certain hereditary conditions are associated with an increased risk for AVM development.

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- Vascular malformations include arteriovenous, venous, cavernous, and capillary malformations.
- Hereditary AVMs usually have an autosomal dominant pattern of inheritance.

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Evidence Discussion (HD-12)

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- After the initial identification of a subarachnoid hemorrhage, the search for a ruptured cerebral aneurysm begins with imaging of the cerebral vessels with CT Angiography (CTA), MR Angiography (MRA) or diagnostic cervicocerebral catheter angiography (Ledbetter et al., 2021).
- CTA Head has over 90% sensitivity and specificity for the diagnosis of cerebral aneurysm in the setting of subarachnoid hemorrhage (Ledbetter et al., 2021).
- MRA Head has a sensitivity of 95% and a specificity of 89% for diagnosis of cerebral aneurysm (Ledbetter et al., 2021).
- Diagnostic cervicocerebral catheter angiography has the highest spatial and temporal resolution of any vascular imaging study; however, is invasive and requires use of contrast. It has a sensitivity and specificity over 98% for identification of aneurysm and can also diagnose vascular abnormalities in up to 13% with subarachnoid hemorrhage and a negative CTA. In addition, this modality can identify an aneurysm in 25% of previously negative studies and repeat studies are supported for this reason (Ledbetter et al., 2021).
- In select cases of subarachnoid hemorrhage when an intracranial aneurysm is not identified, imaging the neck vessels and spinal vessels is appropriate (Samela et al., 2017).
- Aneurysm growth ranges from 4% to 14% on follow up imaging. For surveillance of incidentally identified cerebral aneurysms or ruptured and/or treated aneurysms, the less invasive modalities, CTA and/or MRA are supported, over the more invasive diagnostic cervicocerebral angiography (Ledbetter et al., 2021).
- Screening for cerebral aneurysms in high-risk individual populations is also recommended with the less invasive modalities, CTA Head or MRA Head. This includes individuals with autosomal dominant polycystic kidney disease (ADPKD), who had a prevalence of cerebral aneurysm ranging from 10%-11.5%. The American Heart Association recommended screening those with at least 2 family members with cerebral aneurysm or subarachnoid hemorrhage (Ledbetter et al., 2021).
- Screening is also recommended for conditions with known increased risk of cerebral aneurysm (Thompson et al., 2015; Ledbetter et al., 2021).
- Although vascular imaging is the primary focus of neuroimaging in the diagnosis and follow up of cerebral aneurysms, parenchymal imaging with MRI Brain may be helpful in select clinical scenarios including giant aneurysms, posterior fossa aneurysms, in the setting of cranial neuropathies or focal neurologic findings and suspected stroke (Salmela et al., 2017).
- Cervicocerebral angiography is the gold standard for imaging arteriovenous malformations (AVM) and arteriovenous fistulas (AVF). CT Angiography head (CTA) has a 90% sensitivity for the overall detection of AVMs and 100% for AVMs >3 cm

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in size. In the evaluation of pulsatile tinnitus, CTA has a sensitivity of 86% with a specificity of 100% in identifying high flow AVFs. MR Angiography (MRA) is an alternative modality in these scenarios (Ledbetter et al., 2021).

- MRI Brain for diagnosis and follow up of AVM has an overall sensitivity of 89% and 100% for lesions >3 cm in size (Ledbetter et al., 2021).

Head Imaging Guidelines

References (HD-12)

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1. American College of Radiology. (2021). ACR–ASNR–SIR–SNIS practice parameter for the performance of diagnostic cervicocerebral catheter angiography in adults. American College of Radiology. https://gravitas.acr.org/PPTS/
2. American Medical Association. (2026). CPT®: Current procedural terminology (1995–2026 ed.). American Medical Association.
3. Backes, D., Rinkel, G. J. E., Greving, J. P., Algra, A., & Wermer, M. J. H. (2017). ELAPSS score for prediction of risk of growth of unruptured intracranial aneurysms. *Neurology*, 88(17), 1600–1606. https://doi.org/10.1212/WNL.0000000000003865
4. Bayrak-Toydemir, P., & Stevenson, D. A. (2019). Capillary malformation–arteriovenous malformation syndrome. In A. P. Adam, G. M. Mirzaa, & R. A. Pagon (Eds.), GeneReviews®. University of Washington, Seattle.
5. Bober, M. B., & Jackson, A. P. (2017). Microcephalic osteodysplastic primordial dwarfism, type II: A clinical review. *Current Osteoporosis Reports*, 15(2), 61–69. https://doi.org/10.1007/s11914-017-0348-1
6. Chen, C.-J., Ding, D., Starke, R. M., Mehndiratta, P., Crowley, R. W., Liu, K. C., & Tonetti, D. A. (2020). Brain arteriovenous malformations: A review of natural history, pathobiology, and interventions. *Neurology*, 95(20), 917–927. https://doi.org/10.1212/WNL.0000000000010968
7. Chu, L. C., Johnson, P. T., Dietz, H. C., & Fishman, E. K. (2014). CT angiographic evaluation of genetic vascular disease: Role in detection, staging, and management of complex vascular pathologic conditions. *American Journal of Roentgenology*, 202(5), 1120–1129. https://doi.org/10.2214/AJR.13.11485
8. Connolly, E. S., Rabinstein, A. A., Carhuapoma, J. R., Derdeyn, C. P., Dion, J., Higashida, R. T., Hoh, B. L., Kirkness, C. J., Naidech, A. M., Ogilvy, C. S., Patel, A. B., Thompson, B. G., & Vespa, P. (2012). Guidelines for the management of aneurysmal subarachnoid hemorrhage. *Stroke*, 43(6), 1711–1737. https://doi.org/10.1161/STR.0b013e3182587839
9. Derdeyn, C. P., Zipfel, G. J., Albuquerque, F. C., Cooke, D. L., Feldmann, E., Sheehan, J. P., Torner, J. C., & American Heart Association Stroke Council. (2017). Management of brain arteriovenous malformations. *Stroke,* 48(8), e200–e224. https://doi.org/10.1161/STR.0000000000000134
10. Ding, D., & Etminan, N. (2017). A model for predicting the growth of unruptured intracranial aneurysms. *Neurology*, 88(17), 1594–1595. https://doi.org/10.1212/WNL.0000000000003874
11. Expert Panel on MR Safety, Kanal, E., Barkovich, A. J., Bell, C., Borgstede, J. P., Bradley, W. G., Felmlee, J. P., Froelich, J. W., Gimbel, J. R., Kuhni-Kaminski, E., Larson, P. A., Lester, J. W., Scoumis, E. A., Weinreb, J. C., & Wilkoff, B. L. (2013). ACR guidance document on MR safe practices: 2013. *Journal of Magnetic Resonance Imaging*, 37(3), 501–530. https://doi.org/10.1002/jmri.24011
12. Expert Panel on Neurologic Imaging, Salmela, M. B., Mortazavi, S., Agarwal, M., Burns, J., Corey, A. S., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Policeni, B., Rosenow, J. M., Taheri, M. R., & Zander, D. (2017). ACR Appropriateness Criteria® cerebrovascular disease. *Journal of the American College of Radiology*, 14(5S), S34–S61. https://doi.org/10.1016/j.jacr.2017.01.051
13. Expert Panel on Neurological Imaging, Ledbetter, L. N., Burns, J., Policeni, B., Corey, A. S., Agarwal, M., Block, A. M., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., & Zander, D. (2021). ACR Appropriateness Criteria® cerebrovascular diseases—Aneurysm, vascular malformation, and subarachnoid hemorrhage. *Journal of the American College of Radiology,* 18(11S), S283–S304. https://doi.org/10.1016/j.jacr.2021.08.012
14. Faughnan, M. E., Mager, J. J., Hetts, S. W., Palda, V. A., Lang-Roth, R., Buscarini, E., Deslandres, E., Kasthuri, R. S., Lausman, A., Poisson, J., Ratjen, F., Siu, S. C., Swanswell, B., Terry, P., White, R. I., & Young, L. H. (2020). Second international guidelines for the diagnosis and management of hereditary hemorrhagic telangiectasia. *Annals of Internal Medicine*, 173(12), 989–1001. https://doi.org/10.7326/M20-1443
15. Hammill, A. M., Wusik, K., & Kasthuri, R. S. (2021). Hereditary hemorrhagic telangiectasia (HHT): A practical guide to management. Hematology: American Society of Hematology Education Program, 2021(1), 469–477. https://doi.org/10.1182/hematology.2021000281

16. Hishikawa, T., Date, I., Tokunaga, K., Tominari, S., Yoshimoto, Y., Ishibashi, T., Murayama, Y., Narita, A., & Houkin, K. (2015). Risk of rupture of unruptured cerebral aneurysms in elderly patients. *Neurology*, 85(21), 1879–1885. https://doi.org/10.1212/WNL.0000000000002149
17. Hoh, B. L., Ko, N. U., Amin-Hanjani, S., Connolly, E. S., Mayer, S. A., Saveland, H., Diringer, M. N., Gress, D. R., Higashida, R. T., Ogilvy, C. S., Rordorf, G., & Vespa, P. (2023). Guideline for the management of patients with aneurysmal subarachnoid hemorrhage. *Stroke*. https://doi.org/10.1161/STR.0000000000000436
18. Horne, M. A., Flemming, K. D., Su, I.-C., Stapf, C., Jeon, J. P., Li, D., Christianson, T. J., Whitehead, K. J., Shi, L., Guo, X., & Al-Shahi Salman, R. (2016). Clinical course of untreated cerebral cavernous malformations. *The Lancet Neurology*, 15(2), 166–173. https://doi.org/10.1016/S1474-4422(15)00303-8
19. Johnson, M. D., Staarmann, B., & Zuccarello, M. (2022). A rational approach to the management of cerebral arteriovenous malformations. *World Neurosurgery*, 159, 338–347. https://doi.org/10.1016/j.wneu.2021.08.045
20. Kadian-Dodov, D., Gornik, H. L., Gu, X., Froehlich, J., Bacharach, J. M., Chi, Y.-W., Gray, B. H., Kim, E. S. H., Mace, P., Sharma, A. M., & Olin, J. W. (2016). Dissection and aneurysm in patients with fibromuscular dysplasia. *Journal of the American College of Cardiology*, 68(2), 176–185. https://doi.org/10.1016/j.jacc.2016.04.044
21. Lawton, M. T., & Vates, G. E. (2017). Subarachnoid hemorrhage. *New England Journal of Medicine*, 377, 257–266. https://doi.org/10.1056/NEJMcp1605827
22. Litchfield, W. R., Anderson, B. F., Weiss, R. J., Lifton, R. P., & Dluhy, R. G. (1998). Intracranial aneurysm and hemorrhagic stroke in glucocorticoid-remediable aldosteronism. *Hypertension*, 31(1 Pt 2), 445–450. https://doi.org/10.1161/01.HYP.31.1.445
23. Malhotra, A., Wu, X., Matouk, C. C., Forman, H. P., Gandhi, D., & Sanelli, P. (2019). MR angiography screening and surveillance for intracranial aneurysms in autosomal dominant polycystic kidney disease. *Radiology*, 291(2), 400–408. https://doi.org/10.1148/radiol.2019181399
24. McDonald, J., & Stevenson, D. A. (2021). Hereditary hemorrhagic telangiectasia. In A. P. Adam, G. M. Mirzaa, & R. A. Pagon (Eds.), GeneReviews®. University of Washington, Seattle.
25. Meschia, J. F., Bushnell, C., Boden-Albala, B., Braun, L. T., Bravata, D. M., Chaturvedi, S., Creager, M. A., Eckel, R. H., Elkind, M. S. V., Fornage, M., Goldstein, L. B., Greenberg, S. M., Horvath, S. E., Iadecola, C., Jauch, E. C., Moore, W. S., Wilson, J. A., & American Heart Association Stroke Council. (2014). Guidelines for the primary prevention of stroke. *Stroke*, 45(12), 3754–3832. https://doi.org/10.1161/STR.0000000000000046
26. Morrison, L., & Akers, A. (2003). Cerebral cavernous malformation, familial. In A. P. Adam, G. M. Mirzaa, & R. A. Pagon (Eds.), GeneReviews®. University of Washington, Seattle.
27. Nesvick, C. L., Oushy, S., Ravindran, K., Daniels, D. J., & Lanzino, G. (2021). Repeat catheter angiography in patients with aneurysmal-pattern angiographically negative subarachnoid hemorrhage. *Neurocritical Care*. https://doi.org/10.1007/s12028-021-01247-8
28. Nguyen, T. N. (2023). Management of unruptured intracranial aneurysms and brain arteriovenous malformations. *CONTINUUM: Lifelong Learning in Neurology*, 29(2), 584–604. https://doi.org/10.1212/CON.0000000000001247
29. Rosenberg, T. L., Suen, J. Y., & Richter, G. T. (2018). Arteriovenous malformations of the head and neck. Otolaryngologic Clinics of North America, 51(1), 185–195. https://doi.org/10.1016/j.otc.2017.09.005 Rosser, T. (2018). Neurocutaneous disorders. *CONTINUUM: Lifelong Learning in Neurology*, 24(1), 96–129. https://doi.org/10.1212/CON.0000000000000562
30. Rozenfeld, M. N., Ansari, S. A., Shaibani, A., Russell, E. J., Mohan, P., & Hurley, M. C. (2013). Should patients with autosomal dominant polycystic kidney disease be screened for cerebral aneurysms? *American Journal of Neuroradiology*, 35(1), 3–9. https://doi.org/10.3174/AJNR.A3437
31. Sabeti, S., Ball, K. L., Bhattacharya, S. K., Comi, A. M., Kossoff, E. H., Lin, D. D. M., & Maria, B. L. (2021). Consensus statement for the management and treatment of Sturge–Weber syndrome. *Pediatric Neurology*, 121, 59–66. https://doi.org/10.1016/j.pediatrneurol.2021.04.013
32. Thompson, B. G., Brown, R. D., Jr., Amin-Hanjani, S., Broderick, J. P., Cockroft, K. M., Connolly, E. S., Jr., Duckwiler, G. R., Harris, C. C., Howard, V. J., Johnston, S. C., Meyers, P. M., Molyneux, A., Ogilvy, C. S., Ringer, A. J., & Torner, J. (2015). Guidelines for the management of patients with unruptured intracranial aneurysms. *Stroke,* 46(8), 2368–2400. https://doi.org/10.1161/STR.0000000000000070
33. Vella, M., Alexander, M., Mabray, M., Dowd, C. F., Hetts, S. W., & Lawton, M. T. (2020). Comparison of MRI, MRA, and DSA for detection of cerebral arteriovenous malformations in hereditary hemorrhagic telangiectasia. *American Journal of Neuroradiology,* 41(6), 969–975. https://doi.org/10.3174/AJNR.A6549

34. Vlak, M. H. M., Rinkel, G. J. E., Greebe, P., Greving, J. P., & Algra, A. (2013). Lifetime risks for aneurysmal subarachnoid haemorrhage. J*ournal of Neurology, Neurosurgery & Psychiatry,* 84(6), 619–623. https://doi.org/10.1136/jnnp-2012-303783

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Head and Facial Trauma (HD-13)

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Head Trauma (HD-13.1)

HD.TR.0013.1.A
v1.0.2027

Criteria

For acute head trauma (0 to 7 days post-trauma)

- CT Head without contrast (CPT® 70450) is considered medically necessary in individuals with **ANY** of the following modified Canadian CT Head Rule/New Orleans Criteria.
  - Regardless of documented or stated head impact, ANY "dangerous mechanism of injury", either direct or indirect, including, but not exclusive to:
    - Fall from height greater than 3 feet
    - Fall greater than 5 steps down stairs
    - Any pedestrian motor vehicle accident
    - High impact motor vehicle accident
  - Individuals 60 years of age or older
  - Loss of consciousness, amnesia, or disorientation accompanying blunt head trauma within 24 hours
  - Taking one anticoagulant or two antiaggregants, (e.g., aspirin and Plavix)
  - Known platelet or clotting disorder
  - Glasgow coma scale (GCS) score of less than 15 at 2 hours following injury
  - >30 minutes of amnesia before impact
  - Suspected open skull fracture
  - Signs of basilar skull fracture (Battle's sign, Raccoon eyes, CSF rhinorrhea, cranial nerve palsy, hemotympanum, acute hearing loss)
  - Vomiting
  - Alcohol or drug intoxication
  - Visible trauma above clavicles
  - Deficits in short term memory, altered level of alertness, abnormal behavior, or focal neurological deficit
  - Seizure
  - Headache, see **Headache Associated with Head Trauma (HD-11.12))**

For subacute head trauma (7 days to 3 months post-trauma) and chronic head trauma (greater than 3 months post-trauma) symptoms

- MRI Brain without contrast (CPT® 70551) or CT Head without contrast (CPT® 70450) is considered medically necessary for the initial imaging of individuals with subacute or chronic head trauma and unexplained cognitive or neurologic deficits.

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- MRI Brain without and with contrast (CPT® 70553) is considered medically necessary if post-traumatic infection is suspected.

Repeat and follow-up imaging

- Follow-up imaging is considered medically necessary for known subdural hematomas, intracerebral hemorrhage, or contusions can be done at the discretion of the ordering provider with one of the following:
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - MRI Brain without contrast (CPT® 70551) **OR**
  - CT Head without and with contrast (CPT® 70470) **OR**
  - CT Head without contrast (CPT® 70450)
- For short term follow-up imaging of acute traumatic brain injury (TBI) without neurologic deterioration, CT Head without contrast (CPT® 70450) is considered medically necessary in individuals with ANY of the following risk factors:
  - subfrontal/temporal intraparenchymal contusions
  - anticoagulation
  - age over 65 years
  - intracranial hemorrhage
- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary as a complementary study when neurological findings or symptoms are not sufficiently explained by CT or in subacute and chronic TBI for new, persistent, or slowly progressive symptoms.

For suspected intracranial venous or arterial injury, the following is considered medically necessary:

- CTA/CTV Head (CPT® 70496) or MRA/MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546)
  - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code should be used to report both procedures (see **General Guidelines - CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5))**

SPECT, PET, CT/MRI perfusion, diffusion tensor imaging (DTI) , functional MRI, and MR spectroscopy are considered not medically necessary for the evaluation of traumatic brain injury.

Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain

- Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be requested as (CPT® 0865T or CPT® 0866T)
  - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered not medically necessary in the evaluation of traumatic brain injury.

AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T

- These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

See **Neck (Cervical Spine) Pain Without/With Neurological Features (Including Stenosis) and Trauma (SP-3.2)** in the Spine Imaging Guidelines

See **General Guidelines – CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)** for traumatic vascular injuries

Background and Supporting Information

Individuals with head trauma are at risk for facial and cervical trauma.

Recent studies have shown that diffusion tensor MRI tractography may be more sensitive in demonstrating abnormalities such as axonal injury in closed head injury than conventional MRI, but these techniques are best described presently as research tools and their use in clinical practice is not determined.

Decisions regarding return to normal activities, including sports, are made based on the clinical status of the individual and repeat imaging is medically unnecessary.

In cases of post-traumatic infection, contrast-enhanced MRI or CT may be helpful.

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Facial Trauma (HD-13.2)

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Criteria

- CT Maxillofacial without contrast (CPT® 70486) and/or CT Head without contrast (CPT® 70450) is/are considered medically necessary for any concern regarding significant injury to facial structures including, but not limited to:
  - Concern for orbital, maxillary, or mandibular fractures
  - Trauma with associated symptoms of anosmia, hearing, vision or speech changes, vertigo, facial numbness
  - Physical exam findings of CSF rhinorrhea (suspected post-traumatic CSF leak), malocclusion, severe focal facial tenderness, focal loss of facial sensation
- CT Orbits/Temporal Bone without contrast (CPT® 70480) and/or CT Head without contrast (CPT® 70450) is/are considered medically necessary for:
  - concern for orbital injury or orbital wall fracture
  - symptoms of diplopia, blurred vision, vision loss
  - physical exam findings of enophthalmos, entrapment of extraocular muscle(s)
  - suspicion for temporal bone fracture
  - physical exam findings of CSF otorrhea (suspected post-traumatic CSF leak)
- MRI Maxillofacial without contrast (CPT® 70540) **OR** MRI Maxillofacial without and with contrast (CPT® 70543) is considered medically necessary for evaluation of cranial nerve deficits not explained or incompletely characterized on CT.
- If concern for CSF leak and CT Maxillofacial or Temporal bone is inconclusive, (see **Low-Pressure Headache and CSF Leak (HD-11.15)**)

Background and Supporting Information

Imaging is not necessary in the evaluation of simple nasal fractures if tenderness and swelling is limited to the nasal bridge, the individual can breathe through each naris, and there is no septal hematoma.

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Evidence Discussion (HD-13)

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- For evaluation of acute mild head trauma, less than 10% will have positive findings on CT head, and of this group, less than 1% will require neurosurgical intervention (Shih et al., 2021; Smits et al., 2005).
- The American College of Emergency Physicians and the Choosing Wisely Initiative recommend avoiding CT scans of the head in emergency department individuals with minor head injury who are at low risk based on validated decision rules. This recommendation was based on the concern for individual exposure to ionizing radiation and the increased lifetime risk of cancer with such exposure (Valente et al., 2023).
- Selective CT scanning is recommended by validated clinical practice guidelines, including the New Orleans Criteria and the Canadian CT Head Rule (Steill et al., 2001; Shih et al., 2021; Smits et al., 2005). Both guidelines are 100% sensitive for mild head trauma requiring neurosurgical intervention (Shih et al., 2021; Smits et al., 2005). The New Orleans Criteria has a sensitivity greater than 97% for any traumatic finding on CT, with a specificity less than 6%. (Shih et al. 2021). The Canadian CT Head Rule has a sensitivity between 83.4% - 87.2% with a specificity between 37.2% – 39.7%. Steill et al., 2001; Shih et al., 2021; Smits et al., 2005). The Canadian CT Head Rule has a 100% sensitivity and 29% specificity in cases of intracranial hemorrhage (Steill et al., 2001; Shih et al., 2021; Smits et al., 2005).
- When imaging is indicated by a validated clinical decision rule, CT Head is the preferred imaging modality for evaluation of acute head trauma (Shih et al., 2021; ACR, 2021; Valente et al., 2023; Smits et al., 2005).
- If the initial CT head confirms subdural hematoma, follow-up CT head is supported to monitor progression (Shih et al., 2021; Wintermark et al., 2015).
- For follow-up in individuals with persistent neurologic deficits without etiology identified on initial CT Head, MRI Brain is more sensitive, and can visualize cortical contusions, subdural hematomas, and white matter lesions in diffuse axonal injury (Shih et al., 2021). Up to 27% of individuals with mild traumatic brain injury (TBI) with normal initial CT Head show abnormalities on MRI Brain (Shih et al., 2021; Wintermark et al., 2015).
- When vascular injury is suspected in the setting of head trauma, CT Angiography (CTA) Head and Neck is a non-invasive, rapid, and useful modality to evaluate for arterial injury.7,1 MR Angiography is an alternative option. For suspected intracranial venous injury, CT Venography (CTV) is considered medically necessary, with MR Venography (MRV) an alternative option (Shih et al., 2021; Parsons et al., 2022).
- There is insufficient evidence to support the use of single-photon emission computed tomography (SPECT), FDG-PET/CT Brain, CT/MRI-Perfusion, MR spectroscopy

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(MRS), functional MRI (fMRI), or diffusion tensor imaging (DTI) in the evaluation of head trauma (Shih et al., 2021).

- Individuals with head trauma are also at risk for orbital, facial and temporal bone injuries.(Kennedy 2018) CT of the orbit can diagnose fractures, displaced fracture fragments, foreign bodies, traumatic hematoma, and extraocular muscle injury (Kennedy et al., 2018). CT Head is also recommended in the evaluation of suspected orbital fractures due to concomitant intracranial injury incidence of 9% (Parsons et al., 2022).
- CT Maxillofacial is useful in diagnosing maxillofacial injuries including non-displaced fractures. CT provides multiplanar and 3D image reconstructions, allowing for better characterization of complex fractures, which is useful for surgical planning (Parsons et al., 2022).
- Over one-third of individuals with frontal sinus fractures are likely to have a concomitant intracranial injury, thus concurrent CT Head imaging is recommended in individuals with suspected frontal sinus fractures. In addition, between 8% to 10% of individuals with frontal sinus fractures have subdural or epidural hematomas requiring surgical treatment (Parsons et al., 2022).
- High resolution CT (HRCT) facial and temporal bone are sensitive modalities for subtle or non-displaced skull base defects, with sensitivity of 92% for identifying cerebrospinal fluid leak (Shih et al., 2021, ACR, 2021).

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References (HD-13)

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1. American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Mild Traumatic Brain Injury, Valente, J. H., Anderson, J. D., Raja, A. S., Calderon, Y., Dayan, P. S., Gennis, P., Jagoda, A. S., Kaczorowski, J. M., Nazarian, D. J., Nazarian, N., O'Connor, R. E., Peacock, W. F., & Wolf, S. J. (2023). Clinical policy: Critical issues in the management of adult patients presenting to the emergency department with mild traumatic brain injury. *Annals of Emergency Medicine*, 81(5), e63–e105. https://doi.org/10.1016/j.annemergmed.2023.01.014
2. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. American College of Radiology. https://gravitas.acr.org/PPTS/
3. Centers for Disease Control and Prevention. (2024, August 13). Traumatic brain injury & concussion. https://www.cdc.gov
4. Expert Panel on Neurologic Imaging, Kennedy, T. A., Corey, A. S., Policeni, B., Agarwal, M., Burns, J., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Juliano, A. F., Rosenow, J. M., Taheri, M. R., & Zander, D. (2018). ACR Appropriateness Criteria® orbits, vision, and visual loss. *Journal of the American College of Radiology*, 15(5S), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
5. Expert Panel on Neurological Imaging, Parsons, M. S., Policeni, B., Corey, A. S., Agarwal, M., Burns, J., Block, A. M., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., & Zander, D. (2022). ACR Appropriateness Criteria® imaging of facial trauma following primary survey. *Journal of the American College of Radiology*, 19(5S), S67–S86. https://doi.org/10.1016/j.jacr.2022.02.013
6. Expert Panel on Neurological Imaging, Shih, R. Y., Burns, J., Policeni, B., Corey, A. S., Agarwal, M., Block, A. M., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Juliano, A. F., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., & Zander, D. (2021). ACR Appropriateness Criteria® head trauma: 2021 update. *Journal of the American College of Radiology*, 18(5S), S13–S36. https://doi.org/10.1016/j.jacr.2021.01.006
7. Giza, C. C., Kutcher, J. S., Ashwal, S., Barth, J., Getchius, T. S. D., Gioia, G. A., Gronseth, G. S., Mandel, S., Manley, G. T., McKeag, D. B., Thurman, D. J., & Zafonte, R. (2013). Summary of evidence-based guideline update: Evaluation and management of concussion in sports. *Neurology,* 80(24), 2250–2257. https://doi.org/10.1212/WNL.0b013e31828d57dd
8. Harmon, K. G., Clugston, J. R., Dec, K., Hainline, B., Herring, S. A., Kane, S. F., Kontos, A. P., Leddy, J. J., McCrea, M. A., Poddar, S. K., Putukian, M., & Wilson, J. C. (2019). American Medical Society for Sports Medicine position statement on concussion in sport. *British Journal of Sports Medicine,* 53(4), 213–225. https://doi.org/10.1136/bjsports-2018-100338
9. Haydel, M. J., Preston, C. A., Mills, T. J., Luber, S., Blaudeau, E., & Deblieux, P. M. (2000). Indications for computed tomography in patients with minor head injury. *New England Journal of Medicine*, 343(2), 100–105. https://doi.org/10.1056/NEJM200007133430204
10. Hoffmann, J. F. (2015). An algorithm for the initial management of nasal trauma. *Facial Plastic Surgery*, 31(3), 183–193. https://doi.org/10.1055/s-0035-1555618
11. Mower, W. R., Hoffman, J. R., Herbert, M., Wolfson, A. B., Pollack, C. V., & Zucker, M. I. (2005). Developing a decision instrument to guide computed tomographic imaging of blunt head injury patients. *Journal of Trauma*, 59(4), 954–959. https://doi.org/10.1097/01.ta.0000187813.79047.42
12. NeuroQuant®. (2025, January 9). NeuroQuant automated brain MRI volumetrics. Cortechs.ai. https://www.cortechs.ai
13. Papa, L., Stiell, I. G., Clement, C. M., Pawlowicz, A., Wolfram, A., Braga, C., Draviam, S., Wells, G. A., & Zedek, D. (2012). Performance of the Canadian CT Head Rule and the New Orleans Criteria. *Academic Emergency Medicine,* 19(1), 2–10. https://doi.org/10.1111/j.1553-2712.2011.01247.x

14. Reljic, T., Mahony, H., Djulbegovic, B., Etchill, E., Paxton, J. H., & Murad, M. H. (2014). Value of repeat head computed tomography after traumatic brain injury: A systematic review and meta-analysis. *Journal of Neurotrauma,* 31(1), 78–98. https://doi.org/10.1089/neu.2013.2873
15. Silverberg, N. D., Iaccarino, M. A., Panenka, W. J., Iverson, G. L., McCulloch, K. L., Dams-O'Connor, K., Reed, N., & McCrea, M. (2020). Management of concussion and mild traumatic brain injury. *Archives of Physical Medicine and Rehabilitation,* 101(2), 382–393. https://doi.org/10.1016/j.apmr.2019.10.179
16. Smits, M., Dippel, D. W. J., de Haan, G. G., Dekker, H. M., Vos, P. E., Kool, D. R., Nederkoorn, P. J., Hofman, P. A., Twijnstra, A., Tanghe, H. L. J., & Hunink, M. G. M. (2005). External validation of the Canadian CT Head Rule. *JAMA,* 294(12), 1519–1525. https://doi.org/10.1001/jama.294.12.1519
17. Stiell, I. G., Wells, G. A., Vandemheen, K. L., Clement, C. M., Lesiuk, H., Laupacis, A., McKnight, R. D., Verbeek, P. R., Brison, R., Cass, D., Eisenhauer, M. A., Greenberg, G. H., MacPhail, I., Reardon, M., Worthington, J., & Dreyer, J. (2001). The Canadian CT Head Rule for patients with minor head injury. *The Lancet*, 357(9266), 1391–1396. https://doi.org/10.1016/S0140-6736(00)04561-X
18. Sun, J. K., & Lemay, D. R. (2002). Imaging of facial trauma. *Neuroimaging Clinics of North America*, 12(2), 295–309. https://doi.org/10.1016/S1052-5149(02)00002-3
19. Wintermark, M., Sanelli, P. C., Anzai, Y., Tsiouris, A. J., & Whitlow, C. T. (2015). Imaging evidence and recommendations for traumatic brain injury. *Journal of the American College of Radiology*, 12(2), e1–e14. https://doi.org/10.1016/j.jacr.2014.10.014

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CNS and Head Infection/ Neuro-COVID-19 (HD-14)

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CNS and Head Infection (HD-14.1)

HD.HI.0014.1.A
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Criteria

INITIAL IMAGING

- Signs of intracranial infection include, but are not limited to:
  - headaches, seizures, meningeal signs (neck stiffness)
  - new focal neurological deficits in a setting of fever or elevated white blood cell count (WBC)
  - known infection elsewhere **or**
  - immunosuppression
- **ONE** of the following studies is considered medically necessary for suspected intracranial infection if any of these signs of infection are present:
  - MRI Brain without and with contrast (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551) **OR**
  - CT Head (CPT® 70450, CPT® 70460, or CPT® 70470) in cases where MRI is contraindicated, in urgent scenarios, or prior to lumbar puncture, see **General Guidelines-CT Head (HD-1.4)**
  - If vascular involvement is suspected, in addition to MRI Brain, the following are considered medically necessary:
    - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR**
    - CTA Head (CPT® 70496) **AND/OR**
    - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR**
    - CTA Neck (CPT® 70498) **OR**
    - CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
    - (CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart (there is no specific code for CT/MR venography)
  - Concern for vasculitis, see **Cerebral Vasculitis (HD-22)**

REPEAT IMAGING

- As requested by an infectious disease specialist, neurologist, neurosurgeon, radiologist, or any provider coordinating care with an infectious disease specialist, neurologist, neurosurgeon, or radiologist
- Repeat imaging would refer to any of the CPT codes listed above as initial imaging.

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- See **General Guidelines – CT Head (HD-1.4)** regarding additional indications for CT Head.
- See **Skull Base Osteomyelitis (SBO) (HD-20.1)**, **Sinus and Facial Imaging (HD-29.1)**, **Dental/Periodontal/Maxillofacial Imaging (HD-30.2)**, **Mental Status Change (HD-4.2)**, and **Eye Disorders and Visual Loss (HD-32.1)**

Evidence Discussion (HD-14.1)

- A head CT is recommended for quickly assessing intracranial infections in urgent cases. However, MRI is more effective for examining conditions that affect the cranial nerves, brain tissue, and meninges.(ACR 2020) Although MRI is superior in detecting minor changes in the brain associated with infections, CT scans can promptly identify pathophysiological changes that may influence the individual's prognosis (Abdalkader et al., 2019).
- Acute bacterial meningitis often presents with a normal CT scan. However, due to the high mortality rate of up to 50% when left untreated, a CT scan is necessary to rule out other causes of encephalopathy or neurologic deficits. In certain clinical situations, CT is also required to exclude increased intracranial pressure before performing a lumbar puncture. Venous thromboses increase the risk of hemorrhage and are linked to high mortality. Consequently, both CT and MRI scans, including T1-weighted sequences, are recommended. These scans help detect high signal changes in several venous sinuses and can be complemented with CT or MR venography.
- Similar considerations apply when diagnosing non-bacterial central nervous system (CNS) infections. CT scans are advantageous due to quick access to care, faster diagnosis, and earlier treatment initiation, which can reduce morbidity. However, MRI is superior in detecting patterns of vasogenic versus cytotoxic edema, contrast enhancement, and the distribution of involvement, whether multifocal or unifocal/unihemispheric. These distinctions are crucial in differentiating between differential diagnoses, such as systemic infections with hematogenous spread versus head/neck infections with a direct spread pattern (Nguyen et al., 2020).
- Many individuals present with neurologic signs and symptoms that are indicative of either a cortical or subcortical syndrome. Often, these cannot be fully characterized by clinical presentation alone. As a result, radiologic evaluation becomes essential in diagnosing the etiology of the underlying process. The potential causes are varied and include meningoencephalitis, acute cerebrovascular disease, hemorrhagic necrotizing encephalopathy, immune-mediated (Bickerstaff) encephalitis, and demyelinating diseases such as acute disseminated encephalomyelitis (ADEM) and multiple sclerosis (MS) (Sklinda et al., 2021). Therefore, prompt and accurate diagnosis is critical to select the most appropriate imaging method (MRI vs. CT) for each clinical scenario.

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Neuro-COVID-19 and Sars-CoV-2 Vaccines (HD-14.2)

HD.HI.0014.2.A
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Criteria

- The following studies are considered medically necessary for evaluation of:
  - Acute or chronic Neuro-COVID-19 syndrome
    - MRI Brain without contrast (CPT® 70551) **OR**
    - MRI Brain without and with contrast (CPT® 70553) **OR**
    - CT Head without contrast (CPT® 70450) **OR**
    - CT Head without and with contrast (CPT® 70470) is considered medically necessary if there is a contraindication to MRI **AND/OR**
    - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) OR CTA Head (CPT® 70496) **AND/OR**
    - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498)
      - CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart (there is no specific code for CT/MR venography):
      - If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code is used to report both procedures
      - If an arterial CTA or MRA study has been performed and subsequently a repeat study is needed to evaluate the venous anatomy, then this study is considered medically necessary
      - If a venous CTV or MRV has been performed and subsequently a repeat study is needed to evaluate the arterial anatomy, then this study is considered medically necessary
      - MRA without and with contrast with venous sinus thrombosis to differentiate total from subtotal occlusion is considered medically necessary
  - For suspected neurologic adverse reactions after SARS- CoV-2 vaccination, the following is considered medically necessary:
    - MRI Brain without contrast (CPT® 70551) **OR**
    - MRI Brain without and with contrast (CPT® 70553) **OR**
    - CT Head without contrast (CPT® 70450) **OR**

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- CT Head without and with contrast (CPT® 70470) is considered medically necessary if there is a contraindication to MRI **AND/OR**
- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) OR CTA Head (CPT® 70496) **AND/OR**
- MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) or CTA Neck (CPT® 70498)
  - CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
- CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart (there is no specific code for CT/MR venography):
  - If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code is used to report both procedures
  - If an arterial CTA or MRA study has been performed and subsequently a repeat study is needed to evaluate the venous anatomy, then this study is considered medically necessary
  - If a venous CTV or MRV has been performed and subsequently a repeat study is needed to evaluate the arterial anatomy, then this study is considered medically necessary
  - MRA without and with contrast with venous sinus thrombosis to differentiate total from subtotal occlusion is considered medically necessary

◦ If suspected transverse myelitis, acute necrotizing myelitis, and/or COVID-19 infection, then **ANY** the following are considered medically necessary:
- MRI Cervical without and with contrast (CPT® 72156)
- MRI Thoracic without and with contrast (CPT® 72157)
- MRI Lumbar Spine without and with contrast (CPT® 72158)
- See **Stroke/TIA (HD-21.1)** for vascular imaging
- See **Transverse Myelitis (HD-16.4)** regarding spine imaging to evaluate for post-vaccination neurological syndrome

- Repeat imaging considered on a case-by-case basis for a change in neurological symptoms or signs on the neurological exam and/or change in the treatment.

Background and Supporting Information

- The findings observed in the central nervous system in the acute-phase of COVID-19 may extend into a prolonged symptomatic phase of Neuro-COVID in long haulers with chronic COVID syndrome. Symptoms may include, but are not inclusive to: "brain fog", dizziness, inability to concentrate, psychiatric symptoms, and confusion.
- Acute-phase neurologic manifestations of COVID-19 include: headache, dizziness, taste and smell dysfunction, impaired consciousness (described as confusion or agitation), cerebrovascular events (ischemic stroke, cerebral venous sinus thrombosis, cerebral hemorrhage), seizures, meningoencephalitis, and immune-

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mediated neurologic diseases (Guillan-Barre syndrome, Miller-Fisher syndrome, polyneuritis cranialis, transverse myelitis).

- Neurologic adverse reactions in those receiving SARS-CoV-2 vaccines, including mRNA vaccines (Pfizer, Moderna), have been reported, and include, although not limited to: headache, Guillan-Barre syndrome, transverse myelitis, facial nerve palsy, small fiber neuropathy, autoimmune encephalitis, reversible cerebral vasoconstriction syndrome, multiple sclerosis, neuromyelitis optica, intracerebral bleeding, cerebral venous sinus thrombosis, hypophysitis, epilepsy, encephalopathy, and acute disseminated encephalomyelitis.
- Cases of Thrombosis with Thrombocytopenia Syndrome (TTS) following administration of the Johnson & Johnson/Janssen COVID-19 Vaccine have been reported in males and females, in a wide age range of individuals 18 years and older, with the highest reporting rate (approximately 8 cases per 1,000,000 doses administered) in females ages 30-49 years; overall, approximately 15% of TTS cases have been fatal. Currently available evidence supports a causal relationship between TTS and the Johnson & Johnson/Janssen COVID-19 Vaccine. The clinical course of these events shares features with autoimmune heparin-induced thrombocytopenia. In individuals with suspected TTS following administration of the Johnson & Johnson/ Janssen COVID-19 Vaccine, the use of heparin may be harmful and alternative treatments may be needed. Consultation with hematology specialists is strongly recommended. The American Society of Hematology has published considerations relevant to the diagnosis and treatment of TTS following administration of the Janssen COVID-19 Vaccine.

Evidence Discussion (HD-14.2)

- A head CT is recommended for quickly assessing intracranial infections in urgent cases. However, MRI is more effective for examining conditions that affect the cranial nerves, brain tissue, and meninges.(ACR 2020) Although MRI is superior in detecting minor changes in the brain associated with infections, CT scans can promptly identify pathophysiological changes that may influence the individual's prognosis (Abdalkader et al., 2019).
- Acute bacterial meningitis often presents with a normal CT scan. However, due to the high mortality rate of up to 50% when left untreated, a CT scan is necessary to rule out other causes of encephalopathy or neurologic deficits. In certain clinical situations, CT is also required to exclude increased intracranial pressure before performing a lumbar puncture. Venous thromboses increase the risk of hemorrhage and are linked to high mortality. Consequently, both CT and MRI scans, including T1-weighted sequences, are recommended. These scans help detect high signal changes in several venous sinuses and can be complemented with CT- or MR-venography.
- Similar considerations apply when diagnosing non-bacterial central nervous system (CNS) infections. CT scans are advantageous due to quick access to care, faster

diagnosis, and earlier treatment initiation, which can reduce morbidity. However, MRI is superior in detecting patterns of vasogenic versus cytotoxic edema, contrast enhancement, and the distribution of involvement, whether multifocal or unifocal/unihemispheric. These distinctions are crucial in differentiating between differential diagnoses, such as systemic infections with hematogenous spread versus head/neck infections with a direct spread pattern (Nguyen et al., 2019).

- Many individuals present with neurologic signs and symptoms that are indicative of either a cortical or subcortical syndrome. Often, these cannot be fully characterized by clinical presentation alone. As a result, radiologic evaluation becomes essential in diagnosing the etiology of the underlying process. The potential causes are varied and include meningoencephalitis, acute cerebrovascular disease, hemorrhagic necrotizing encephalopathy, immune-mediated (Bickerstaff) encephalitis, and demyelinating diseases such as acute disseminated encephalomyelitis (ADEM) and multiple sclerosis (MS) (Sklinda et al.,2021). Therefore, prompt and accurate diagnosis is critical to select the most appropriate imaging method (MRI vs. CT) for each clinical scenario.

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Autoimmune/Paraneoplastic Encephalitis & Neuroinflammatory Disorders (HD-14.3)

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Criteria

Indications:

When acute/subacute or rapid progression (under 3 months) of altered mental status, focal findings including cranial nerve, motor or sensory symptoms or memory loss or psychiatric symptoms, seizure, and/or focal CNS findings are present.

OR

There is a stated concern for neuro-inflammatory encephalitis from or in consultation with a neurologist, neurosurgeon, psychiatrist, oncologist, rheumatologist, or infectious disease specialist.

Medically Necessary Initial Imaging:

- MRI Brain without and with contrast (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551) **OR**
- CT Head without contrast (CPT® 70450) **OR** CT Head without and with contrast (CPT® 70470) when MRI is unavailable or contraindicated or for bony pathology concerns
- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** CTA Head (CPT® 70496) **AND/OR** MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) **OR** CTA Neck (CPT® 70498)
  - CTA Head and Neck (CPT ® 70471) must be submitted if performed during the same session

  The above imaging studies are for evaluating large vessel obstructions, aneurysms and vascular malformations, dissection, vasospasm, and vasculopathies such as CNS vasculitis (see **Cerebral Vasculitis (HD-22.1)**, **Cerebral Aneurysms (HD-12.1)**, **Arteriovenous Malformations (AVMs) and Related Lesions (HD-12.2)**, **Stroke/TIA (HD-21.1)**)

Medically Necessary Repeat Imaging:

MRI Brain without and with contrast (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551) when specialized sequences are needed such as, but not limited to:

- high T2 contrast sequences (CISS, FIESTA) sequences to identify blood (SWI) or
- identifying acute cytotoxic edema (DWI) or
- when requested by or in consultation with a neurologist, oncologist, rheumatologist, infectious disease specialist, neurosurgeon, or psychiatrist

Metabolic (FDG) Brain PET (CPT® 78608) is considered medically necessary to evaluate individuals suspected of having encephalitis, including autoimmune encephalitis, if diagnosis remains unclear after evaluation with MRI Brain, CSF analysis, and/or lab testing including serology.

Neurosarcoidosis:

- The following are considered medically necessary for known or suspected neurosarcoidosis.
  - MRI Brain without and with contrast (CPT® 70553)

    AND/OR
  - If spinal cord involvement suspected, then
    - MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR**
    - MRI Thoracic Spine without and with contrast (CPT® 72157) **AND/OR**
    - MRI Lumbar Spine without and with contrast (CPT® 72158)

    AND/OR
  - If peri-orbital involvement suspected, then
    - MRI Orbits/Face/Neck without and with contrast (CPT® 70543)
  - Repeat imaging supported if requested by neurologist, rheumatologist, ophthalmologist, oncologist, or radiologist or provider in consultation with a neurologist, rheumatologist, ophthalmologist, oncologist or radiologist.
- For non-neurologic imaging related to sarcoidosis (see **Sarcoid (CH-15.1)**)

Background and Supporting Information

Supportive studies in the evaluation of Autoimmune/Paraneoplastic Encephalopathy include:

- CSF pleocytosis (>5 WBC/μL) or
- EEG changes or
- Supporting labs (including positive CSF antibody positivity and/or serologies)

Potential etiologies:

- Paraneoplastic
  - NMDA Receptor encephalitis
  - LGI1 antibody encephalitis
- Autoimmune

  - Neurosarcoidosis can involve any of the following:
    - Brain, cranial nerves, spinal cord, and/or peripheral nerves
    - Acute Disseminated Encephalomyelitis (ADEM), Anti-MOG Syndrome, Multiple Sclerosis (MS), Neuromyelitis Optica (NMO)
    - IgG4 related disease
    - CNS histiocytosis
- Neuro-rheumatologic
  - ANCA related disease
  - Behcet's disease
  - Sjogren Syndrome +/- Rheumatoid Arthritis (RA)

FDG-PET imaging of the brain for paraneoplastic and autoimmune encephalitis may be more sensitive than brain MRI (87% vs. 56%) but is nonspecific. Areas of hypometabolism are seen in neurodegenerative disorders such as dementias. However, topographic patterns of hypometabolism may help characterize the disorder as autoimmune/ paraneoplastic encephalitis, in a way that may help clarify diagnosis and alter management strategies. For example, anterior to posterior gradient of hypometabolism is seen in NMDA Receptor encephalitis. Hemispheric hypometabolism out of proportion to atrophy characterizes Rasmussen encephalitis.

Non-Head Imaging

- MRI is helpful in determining the length of spine lesion (short versus longitudinally extensive transverse myelitis), width (partial versus transverse), and location (eccentric, central, hemicord, anterior versus posterior, conus, tracts, or meningeal).
  - See **Myelopathy (SP-7.1)** and **Anti-MOG Syndromes (HD-16.3)**
- The Trident Sign on axial MRI, which has been described in relation to neurosarcoidosis, demonstrates leptomeningeal or dorsal subpial enhancement that may or may not involve the central canal.
  - See **Myelopathy (SP-7.1)**
- Involvement of the conus medullaris is a clue to Anti-MOG (Myelin Oligodendrocyte Glycoprotein-associated disorder) as the cause of longitudinally extensive transverse myelitis.
  - See **Transverse Myelitis (HD-16.4)**
- CT of the chest, abdomen, and pelvis with contrast is a generally accepted first method of screening for occult malignancy or systemic inflammation (e.g., sarcoidosis).
  - See **Paraneoplastic Syndromes (ONC-30.3)** and **Sarcoid (CH-15.1)**

Evidence Discussion (HD-14.3)

- The American College of Radiology (ACR) Appropriateness Criteria® provided guidance on the appropriateness of CT versus MRI Brain in certain clinical scenarios relating to altered mental status. For acute, undifferentiated presentations and with focal symptoms, CT Head is an appropriate modality, but with known intracranial process, suspected medical illness or toxic-metabolic etiology, and/or psychosis, MRI Brain, is appropriate and in some cases may be preferable (Expert Panel on Neurological Imaging et al., 2024).
- In the appropriate clinical scenarios, recognition of structural and functional imaging patterns of brain involvement using CT Head, MRI Brain, and brain PET, in autoimmune encephalitis (including paraneoplastic and non-rheumatologic inflammatory disorders) can facilitate rapid access to appropriate treatment, as well as avoid invasive diagnostic procedures such as brain biopsy (Wahed & Cho, 2023).
- FDG-PET/CT Brain performed at a median 4 weeks of symptom onset was more often abnormal than initial MRI, EEG, or laboratory cerebrospinal fluid testing, in individuals with suspected autoimmune encephalitis (AE), with focal hypometabolism, the most common PET/CT finding (Probasco et al., 2017).
- Spine MRI shows abnormalities in up to 45% of cases of paraneoplastic myeloneuropathy (Shah et al., 2020).
- The three-dimensional (3D) constructive interference in steady state (CISS) is a gradient-echo MRI or Fast Imaging Employing Steady-state Acquisition Cycled Phases (FIESTA-C) on GE MRI systems are widely employed for over a decade and have been shown to have utility in demonstration of contrast between cerebrospinal fluid and brain parenchymal structure. Therefore, these have particular utility in the examination of cranial nerves, the ventricular system, cavernous sinus, and other structures which are commonly involved in neuro-inflammatory conditions (Hingwala et al., 2011).
- Neuropsychiatric lupus and other neuro-inflammatory conditions have been described to mimic vascular disease, such as vasculitis and small vessel cerebrovascular disease, and in these cases vessel imaging with CT Angiography (CTA) and MR Angiography (MRA) Brain can contribute to meaningful diagnosis (Lancaster, 2016).
- In the evaluation of a first episode of psychosis when an autoimmune cause is suspected, up to 4% of cases have abnormalities on MRI brain (Guasp et al., 2021).
- Sarcoidosis can manifest with neurologic complications in every part of the neural axis, with diagnostic challenges represented by multiple pathophysiologic pathways and frequently lack of specific histopathologic diagnosis. In clinically suspected neurosarcoidosis on the basis of synthesized clinical history and physical examination findings, the demonstration of neuro-inflammation using cerebrospinal fluid testing and contrast-enhanced MRI is useful. In difficult or complicated cases, FDG-PET and Gallium-67 imaging have been useful for identification of targets for biopsy (Stern et al., 2018).

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References (HD-14)

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1. Abdalkader, M., Xie, J., Cervantes-Arslanian, A., Takahashi, C., & Mian, A. Z. (2019). Imaging of intracranial infections. Seminars in Neurology, 39(3), 322–333. https://doi.org/10.1055/s-0039-1693161
2. American College of Radiology. (2020). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the head. https://gravitas.acr.org/PPTS/
3. American Medical Association. (2026). CPT®: Current procedural terminology (1995–2026 ed.). American Medical Association.
4. Anand, P. (2021). Neurologic infections in patients on immunomodulatory and immunosuppressive therapies. *CONTINUUM: Lifelong Learning in Neurology*, 27(4), 1066–1104. https://doi.org/10.1212/CON.0000000000000985
5. Beghi, E., Helbok, R., Ozturk, S., Karadas, O., Lisnic, V., Grosu, I., Dalla Porta, G., Susac, O., Talan, L., Patrucco, L., & Global Neuro-COVID Registry Group. (2022). Short- and long-term outcome and predictors in an international cohort of patients with neuro-COVID-19. *European Journal of Neurology*, 29(6), 1663–1684. https://doi.org/10.1111/ene.15293
6. Bordonne, M., Chawki, M. B., Doyen, M., Houillier, C., Navarro, V., & Desestret, V. (2021). Brain 18F-FDG PET for the diagnosis of autoimmune encephalitis: A systematic review and meta-analysis. *European Journal of Nuclear Medicine and Molecular Imaging*, 48, 3847–3858. https://doi.org/10.1007/s00259-021-05299-y
7. Bradshaw, M. J., Pawate, S., Koth, L. L., Cho, T. A., & Gelfand, J. M. (2021). Neurosarcoidosis: Pathophysiology, diagnosis, and treatment. *Neurology: Neuroimmunology & Neuroinflammation,* 8(6), e1084. https://doi.org/10.1212/NXI.0000000000001084
8. Budhram, A., Leung, A., Nicolle, M. W., & Burneo, J. G. (2019). Diagnosing autoimmune limbic encephalitis. *CMAJ*, 191(19), E529–E534. https://doi.org/10.1503/cmaj.181548
9. Chen, X., Laurent, S., Onur, O. A., Kleineberg, N. N., Fink, G. R., Schweitzer, F., & Warnke, C. (2021). A systematic review of neurological symptoms and complications of COVID-19. *Journal of Neurology*, 268(2), 392–402. https://doi.org/10.1007/s00415-020-10067-3
10. Chow, F. C. (2021). Neurosyphilis. *CONTINUUM: Lifelong Learning in Neurology*, 27(4), 1018–1039. https://doi.org/10.1212/CON.0000000000000982
11. Corrêa, D. G., de Souza, S. R., Freddi, T. A. L., Fonseca, A. P. A., dos Santos, R. Q., & Hygino da Cruz, L. C., Jr. (2023). Imaging features of neurosyphilis. *Journal of Neuroradiology*, 50(2), 241–252. https://doi.org/10.1016/j.neurad.2023.01.003
12. Expert Panel on Neurological Imaging, Rath, T. J., Policeni, B., Juliano, A. F., Agarwal, M., Block, A. M., Burns, J., Conley, D. B., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Jain, V., Powers, W. J., Rosenow, J. M., Taheri, M. R., DuChene Thoma, K., Zander, D., & Corey, A. S. (2022). ACR Appropriateness Criteria® Cranial neuropathy: 2022 update. *Journal of the American College of Radiology,* 19(11S), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
13. Expert Panel on Neurological Imaging, Soares, B. P., Shih, R. Y., Utukuri, P. S., Adamson, M., Austin, M. J., Brown, R. K. J., Burns, J., Cacic, K., Chu, S., Crone, C., Ivanidze, J., Jackson, C. D., Kalnins, A., Potter, C. A., Rosen, S., Soderlund, K. A., Thaker, A. A., Wang, L. L., & Policeni, B. (2024). ACR Appropriateness Criteria® altered mental status, coma, delirium, and psychosis: 2024 update. *Journal of the American College of Radiology*, 21(11S), S372–S383. https://doi.org/10.1016/j.jacr.2024.08.018 [pubmed.ncb...lm.nih.gov]
14. Finsterer, J. (2022). Neurological side effects of SARS-CoV-2 vaccinations. *Acta Neurologica Scandinavica*, 145(1), 5–9. https://doi.org/10.1111/ane.13550
15. Fritz, D., van de Beek, D., & Brouwer, M. C. (2016). Clinical features, treatment, and outcome in neurosarcoidosis. *BMC Neurology*, 16(1), 220. https://doi.org/10.1186/s12883-016-0741-x
16. Frontera, J. A., Tamborska, A. A., Doheim, M. F., Garcia-Azorin, D., Ullah, S., Stazione, P., Jensen, M. P., & Global COVID-19 Neuro Research Coalition. (2022). Neurological events reported after COVID-19 vaccines. *Annals of Neurology*. https://doi.org/10.1002/ana.26339
17. Graus, F., Titulaer, M. J., Balu, R., Benseler, S., Bien, C. G., Cellucci, T., Cortese, I., Dale, R. C., Gelfand, J. M., Geschwind, M., Glaser, C. A., Honnorat, J., Höftberger, R., Iizuka, T., Irani, S. R., Lancaster, E., McKeon,

A., Rosenfeld, M. R., Rostásy, K., … Dalmau, J. (2016). A clinical approach to diagnosis of autoimmune encephalitis. *The Lancet Neurology*, 15(4), 391–404. https://doi.org/10.1016/S1474-4422(15)00401-9

18. Guada, L., Cabrero, F. R., Baldwin, N. L., Levi, A. D., Gultekin, S. H., & Verma, A. (2022). Acute ascending necrotizing myelitis after COVID-19 infection. *Neurology: Clinical Practice*, 12(3), e28–e32. https://doi.org/10.1212/CPJ.0000000000001175
19. Guasp, M., Giné-Servén, E., Maudes, E., Rosa-Justicia, M., Martínez-Hernández, E., & Graus, F. (2021). Clinical, neuroimmunologic, and CSF investigations in first-episode psychosis. *Neurology*, 97(1), e61–e75. https://doi.org/10.1212/WNL.0000000000012191
20. Gomez, C. K., Schiffman, S. R., & Bhatt, A. A. (2018). Radiological review of skull lesions. *Insights into Imaging*, 9(5), 857–882. https://doi.org/10.1007/s13244-018-0643-0
21. Hingwala, D., Chatterjee, S., Kesavadas, C., Thomas, B., & Kapilamoorthy, T. R. (2011). Applications of 3D CISS sequence for problem solving in neuroimaging. *Indian Journal of Radiology and Imaging*, 21(2), 90–97. https://doi.org/10.4103/0971-3026.82283
22. Ibitoye, R. T., Wilkins, A., & Scolding, N. J. (2017). Neurosarcoidosis: A clinical approach to diagnosis and management. *Journal of Neurology*, 264(5), 1023–1028. https://doi.org/10.1007/s00415-016-8336-4
23. Ismail, I. I., & Salama, S. (2022). Association of CNS demyelination and COVID-19 infection. *Journal of Neurology,* 269(2), 541–576. https://doi.org/10.1007/s00415-021-10752-x
24. Kaulen, L. D., Doubrovinskaia, S., Mooshage, C., Jordan, B., Hennig, C., Schaffrinski, M., Lehmann, H. C., & Ringelstein, M. (2022). Neurological autoimmune diseases following vaccinations against SARS-CoV-2. *European Journal of Neurology*, 29(2), 555–563. https://doi.org/10.1111/ene.15147
25. Khan, E., Shrestha, A. K., Colantonio, M. A., Liberio, R. N., & Sriwastava, S. (2022). Acute transverse myelitis following SARS-CoV-2 vaccination. *Journal of Neurology*, 269(3), 1121–1132. https://doi.org/10.1007/s00415-021-10785-2
26. Kremer, S., Lersy, F., de Sèze, J., Ferré, J.-C., Maamar, A., Carsin-Nicol, B., & Cotton, F. (2020). Brain MRI findings in severe COVID-19. *Radiology,* 297(2), E242–E251. https://doi.org/10.1148/radiol.2020202222
27. Lancaster, E. (2016). The diagnosis and treatment of autoimmune encephalitis. *Journal of Clinical Neurology*, 12(1), 1–13. https://doi.org/10.3988/jcn.2016.12.1.1
28. Liotta, E. M., Batra, A., Clark, J. R., Shlobin, N. A., Hoffman, S. C., Orban, Z. S., & Koralnik, I. J. (2020). Frequent neurologic manifestations and encephalopathy-associated morbidity in COVID-19 patients. *Annals of Clinical and Translational Neurology*, 7(11), 2221–2230. https://doi.org/10.1002/acn3.51210
29. Maury, A., Lyoubi, A., Peiffer-Smadja, N., de Broucker, T., & Meppiel, E. (2021). Neurological manifestations associated with SARS-CoV-2 and other coronaviruses. *Revue Neurologique*, 177(1–2), 51–64. https://doi.org/10.1016/j.neurol.2020.10.001
30. Moreno-Escobar, M. C., Kataria, S., Khan, E., & Sriwastava, S. (2021). Acute transverse myelitis with dysautonomia following SARS-CoV-2 infection: A case report and review of the literature. *Journal of Neuroimmunology*, 353, 577523. https://doi.org/10.1016/j.jneuroim.2021.577523
31. Nguyen, I., Urbanczyk, K., Mtui, E., & Li, S. (2020). Intracranial CNS infections. *Seminars in Ultrasound, CT and MRI*, 41(1), 106–120. https://doi.org/10.1053/j.sult.2019.09.003
32. Paterson, R. W., Brown, R. L., Benjamin, L., Nortley, R., Wiethoff, S., Bharucha, T., Jayaseelan, D. L., Kumar, G., Raftopoulos, R. E., Zambreanu, L., & Vincent, A. (2020). The emerging spectrum of COVID-19 neurology. *Brain*, 143, 3104–3120. https://doi.org/10.1093/brain/awaa240
33. Pawate, S. (2020). Sarcoidosis and the nervous system. *CONTINUUM: Lifelong Learning in Neurology,* 26(3), 695–715. https://doi.org/10.1212/CON.0000000000000855
34. Patone, M., Handunnetthi, L., Saatci, D., Pan, J., Katikireddi, S. V., Razvi, S., Hunt, D. P. J., Mei, X. W., Dixon, S., Zaccardi, F., Khunti, K., Watkinson, P., Coupland, C. A. C., Doidge, J., Harrison, D. A., Ravanan, R., Sheikh, A., Robertson, C., & Hippisley-Cox, J. (2021). Neurological complications after first dose of COVID-19 vaccines and SARS-CoV-2 infection. *Nature Medicine*, 27(12), 2144–2153. https://doi.org/10.1038/s41591-021-01556-7
35. Premraj, L., Kannapadi, N. V., Briggs, J., Seal, S. M., Battaglini, D., Fanning, J., Suen, J., Robba, C., Fraser, J., & Cho, S. M. (2022). Mid- and long-term neurological manifestations of post-COVID-19 syndrome. *Journal of the Neurological Sciences*, 434, 120162. https://doi.org/10.1016/j.jns.2022.120162
36. Probasco, J. C., Solnes, L., Nalluri, A., Cohen, J., Jones, K. M., Rowe, S. P., & Pomper, M. G. (2017). Abnormal brain metabolism on FDG-PET/CT in autoimmune encephalitis. *Neurology: Neuroimmunology & Neuroinflammation,* 4(4), e352. https://doi.org/10.1212/NXI.0000000000000352

37. Proulx, N., Fréchette, D., Toye, B., Chan, J., & Kravcik, S. (2005). Delays in the administration of antibiotics are associated with mortality from adult acute bacterial meningitis. *QJM: An International Journal of Medicine*, 98(4), 291–298. https://doi.org/10.1093/qjmed/hci047
38. Radmanesh, A., Raz, E., Zan, E., Derman, A., & Kaminetzky, M. (2020). Brain imaging use and findings in COVID-19. *American Journal of Neuroradiology*, 41, 1179–1183. https://doi.org/10.3174/ajnr.A6610
39. Roos, K. L. (2021). Neurologic complications of Lyme disease. *CONTINUUM: Lifelong Learning in Neurology*, 27(4), 1040–1050. https://doi.org/10.1212/CON.0000000000001015
40. Rosenblum, H. G., Gee, J., Liu, R., Marquez, P. L., Zhang, B., Strid, P., Abara, W. E., McNeil, M. M., & Shimabukuro, T. T. (2022). Safety of mRNA vaccines administered during the initial 6 months of the US COVID-19 vaccination programme: An observational study of reports to the Vaccine Adverse Event Reporting System and v-safe. *The Lancet Infectious Diseases*. Advance online publication. https://doi.org/10.1016/S1473-3099(22)00054-8
41. Rosenblum, H. G., Hadler, S. C., Moulia, D., Shimabukuro, T. T., Su, J. R., Tepper, N. K., Baggs, J., Gee, J., Myers, T. R., Marquez, P. L., Moro, P. L., Panagiotakopoulos, L., Pike, J., Routh, J., Talbot, H. K., Weintraub, E., Wharton, M., & Liang, J. L. (2021). Use of COVID-19 vaccines after reports of adverse events among adult recipients of Janssen (Johnson & Johnson) and mRNA COVID-19 vaccines (Pfizer-BioNTech and Moderna): Update from the Advisory Committee on Immunization Practices—United States, July 2021. Morbidity and Mortality Weekly Report, 70(32), 1094–1099. https://doi.org/10.15585/mmwr.mm7032e4 Rubin, R. (2020). As their numbers grow, COVID-19 "long haulers" stump experts. *JAMA*, 324(14), 1381–1383. https://doi.org/10.1001/jama.2020.17709
42. Sakai, M., Higashi, M., Fujiwara, T., Kubo, T., Nishimura, Y., & Sakamoto, N. (2021). MRI features of HIV-related CNS diseases. Japanese Journal of Radiology, 39(11), 1023–1038. https://doi.org/10.1007/s11604-021-01150-4 Shah, S., Vazquez Do Campo, R., Kumar, N., McKeon, A., Flanagan, E. P., Klein, C. J., Pittock, S. J., & Dubey, D. (2021). Paraneoplastic myeloneuropathies: Clinical, oncologic, and serologic accompaniments. *Neurology*, 96(4), e632–e639. https://doi.org/10.1212/WNL.0000000000011218
43. Singh, S. K., & Hasbun, R. (2021). Neuroradiology of infectious diseases. *Current Opinion in Infectious Diseases*, 34(3), 228–237. https://doi.org/10.1097/QCO.0000000000000725
44. Sklinda, K., Dorobek, M., Wasilewski, P. G., Klichowski, M., Dzięciołowski, I., Paluszkiewicz, P., & Walecka, A. (2021). Radiological manifestation of neurological complications in the course of SARS-CoV-2 infection. *Frontiers in Neurology,* 12, 711026. https://doi.org/10.3389/fneur.2021.711026
45. Solnes LB, Jones KM, Rowe SP, et al. Diagnostic Value of 18F-FDG PET/CT Versus MRI in the Setting of Antibody-Specific Autoimmune Encephalitis. *J Nucl Med*. 2017;58(8):1307-1313. doi:10.2967/jnumed.116.184333
46. Stern, B. J., Royal, W., Gelfand, J. M., Clifford, D., Tavee, J., Pawate, S., Aksamit, A., Judson, M. A., & Biller, J. (2018). Definition and diagnostic criteria for neurosarcoidosis. *JAMA Neurology*, 75(12), 1546–1553. https://doi.org/10.1001/jamaneurol.2018.2295
47. Tunkel, A. R., Hartman, B. J., Kaplan, S. L., Kaufman, B. A., Roos, K. L., Scheld, W. M., & Whitley, R. J. (2004). Practice guidelines for the management of bacterial meningitis. *Clinical Infectious Diseases*, 39(9), 1267–1284. https://doi.org/10.1086/425368
48. Tu, T. M., Yi, S. J., Koh, J. S., Saffari, S. E., Hoe, R. H., Chen, C., Chan, B. P., Tan, B. Y., Chan, A. C., & Ng Kee Kwong, K. C. (2022). Incidence of cerebral venous thrombosis post COVID-19 infection vs vaccination. *JAMA Network Open*, 5(3), e222940. https://doi.org/10.1001/jamanetworkopen.2022.2940
49. Vasconcelos, T. M. F., Oliveira, D. N., Ferreira, G. M., Silva, M. R., & Nunes, F. P. (2021). Post-infectious transverse myelitis after COVID-19. *Journal of NeuroVirology*, 27(5), 791–796. https://doi.org/10.1007/s13365-021-01010-x
50. Wahed, L. A., & Cho, T. A. (2023). Imaging of autoimmune, paraneoplastic, and neuro-rheumatologic disorders. *CONTINUUM: Lifelong Learning in Neurology*, 29(1), 255–291. https://doi.org/10.1212/CON.0000000000001244
51. Weidauer, S., Wagner, M., Enkirch, S. J., & Hattingen, E. (2020). CNS infections in immunoincompetent patients. *Clinical Neuroradiology*, 30(1), 9–25. https://doi.org/10.1007/s00062-019-00837-6

Movement Disorders (HD-15)

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Head Imaging Guidelines

Movement Disorders (HD-15.1)

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- The majority of movement disorders are diagnosed based on a clinical diagnosis and imaging is not medically necessary. These include:
  - typical Parkinson's Disease
  - essential tremor or tremors of anxiety or weakness
  - restless leg syndrome
  - tics or spasms which can be duplicated at will
  - Tourette syndrome
  - tardive dyskinesia
- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is medically necessary in the following clinical scenarios:
  - Clinical diagnostic uncertainty
  - Incomplete or uncertain response to medication
  - Anti-psychotic drug-induced Parkinsonism or atypical tardive dyskinesia
  - Atypical Parkinsonism suspected because of unusual clinical features. These may include, but are not limited to:
    - Persistent unilateral signs or symptoms
    - Onset under age 50
    - Rapid progression
    - See *Background and Supporting Information* for further information on atypical parkinsonism and Parkinson's Plus Syndromes
  - Suspected Huntington Disease
- Evaluation for surgical treatment of essential tremor, Parkinson's disease, and/or spasmodic torticollis/dystonia, see **Torticollis and Dystonia (Neck-10.2)** in the Neck Imaging Guidelines
  - Deep Brain Stimulation (DBS) therapy
    - MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) **AND/OR** unlisted CT procedure code (CPT® 76497) are medically necessary
  - MR guided Focused Ultrasound:
    - CT Head without contrast (CPT® 70450) to evaluate bone density **AND/OR** MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) are medically necessary
  - Repeat imaging studies for pre-surgical evaluation, MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) **AND/OR** CT Head without contrast (CPT® 70450), are medically necessary when ordered by a

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Neurosurgeon or Neurologist or any provider in consultation with a Neurosurgeon or Neurologist if greater than 6 months old **and/or** for new symptoms/signs
    - Post-op imaging is medically necessary when ordered by a Neurosurgeon or Neurologist or any provider in consultation with a Neurosurgeon or Neurologist for either procedures, see also **Post-Operative Imaging (HD-28.3)** indications
- MRI Brain without and with contrast (CPT® 70553) is medically necessary for initial imaging for suspected motor neuron disease (see **Motor Neuron Disease/ Amyotrophic Lateral Sclerosis (ALS) (PND-8.1)** in the Peripheral Nerve and Neuromuscular Disorders Imaging Guidelines)
- Dementia associated with movement disorder (see **Lewy Body Dementia (LBD) – SPECT Brain Scan and PET (HD-8.3)**

Background and Supporting Information

- Parkinson's Plus Syndromes are a group of disorders characterized by atypical parkinsonism. They are NOT Parkinson's disease. They represent different neurodegenerative diseases with features of PD, and may be confused with PD. These syndromes include, but are not limited to:
    - Multiple system atrophy: orthostatic hypotension (dysautonomia), dysphonia, dysarthria
    - Progressive Supranuclear Palsy: balance difficulties, vertical gaze paresis
    - Corticobasal Syndrome: dysphasia, apraxia, myoclonus, alien-limb phenomenon
- These are distinct entities. Care must be taken to determine if there are unusual features present that will suggest atypical parkinsonian syndrome.
- Dementia with Lewy bodies (DLB): dementia prior to movement disorder (see **Lewy Body Dementia (LBD) - SPECT Brain Scan and PET (HD-8.3)**)

Evidence Discussion (HD-15)

- The majority of movements disorders are diagnosed based on history and clinical examination findings and do not require imaging.[1,2,3,4] For cases of diagnostic uncertainty, incomplete response to medication, for atypical Parkinsonism or drug-induced parkinsonism, and for suspected Huntington disease, MRI brain is the preferred imaging modality.[1,2,3,4]
- Structural imaging with MRI Brain is usually normal in individuals with Parkinson's disease but is useful to diagnose causes of secondary parkinsonism, such as stroke, iron deposition, normal pressure hydrocephalus, and neoplasm.[1,2,3]
- CT Head is not preferred due to its limited soft-tissue characterization when compared to MRI.[1]
- Functional imaging studies assessing dopaminergic function in Parkinson's disease include single-photon emission computed tomography (SPECT) and positron emission tomography (PET) imaging.1,2,3 These studies are used as an adjunct diagnostic test.[1,2,3]

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- Both Dopamine Transporter single-photon emission computed tomography (DAT-SPECT) and [18F]-fluorodopa (F-DOPA) PET brain are useful to differentiate suspected parkinsonian syndromes from non-neurodegenerative disorders such as Essential Tremor, drug-induced tremors, vascular parkinsonism, and/or psychogenic tremors.[1,2,3,17,18]
- DAT-SPECT has a sensitivity of 91% with a specificity of 100% for essential tremor, a sensitivity of 86.2% with a specificity of 93.8% for drug-induced parkinsonism, and a sensitivity of 86.2% with a specificity of 82.9% for vascular parkinsonism.[18,25,26]
- F-DOPA PET brain has a sensitivity of 73% with a specificity of 91% for evaluation of parkinsonian syndrome vs non-neurodegenerative parkinsonian syndrome.[17]
- Neither DAT-SPECT scans nor F-DOPA PET brain scans are useful for the differentiation between subtypes of Parkinsonian syndromes, to monitor progression of disease nor to predict the risk of development of disease.[1,2,3]
- There is insufficient evidence for the routine use of FDG-PET brain in the diagnosis of parkinsonian syndromes.[1]

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References (HD-15)

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1. Ba, F., & Martin, W. R. W. (2015). Dopamine transporter imaging as a diagnostic tool for parkinsonism and related disorders in clinical practice. *Parkinsonism & Related Disorders*, 21(2), 87–94. https://doi.org/10.1016/j.parkreldis.2014.11.007
2. Bega, D., Gonzalez-Latapi, P., Zadikoff, C., Spies, W., & Simuni, T. (2015). Is there a role for DAT-SPECT imaging in a specialty movement disorders practice? *Neurodegenerative Diseases*, 15(2), 81–86. https://doi.org/10.1159/000370116
3. Brigo, F., Matinella, A., Erro, R., & Tinazzi, M. (2014). [^{123}I]FP-CIT SPECT (DaTSCAN) may differentiate Parkinson disease from vascular or drug-induced parkinsonisms: A meta-analysis. *European Journal of Neurology*, 21(11), 1369–e90. https://doi.org/10.1111/ene.12444
4. Dhawan, V., Niethammer, M. H., Lesser, M. L., Saha, A., Barnes, A., Belakhlef, A., Bilello, M., & Ehrlich, D. (2022). Prospective F-18 FDOPA PET imaging study in human Parkinson disease. *Nuclear Medicine and Molecular Imaging,* 56(3), 147–157. https://doi.org/10.1007/s13139-022-00748-4
5. Elias, J. W., Lipsman, N., Ondo, W. G., Ghanouni, P., Kim, Y. G., Lee, W., Schwartz, M., Hynynen, K., Lozano, A. M., & Shah, B. B. (2016). A randomized trial of focused ultrasound thalamotomy for essential tremor. *New England Journal of Medicine*, 375, 730–739. https://doi.org/10.1056/NEJMoa1600159
6. Expert Panel on Neurological Imaging, Harvey, H. B., Watson, L. C., Agarwal, M., Corey, A. S., Crowley, R. W., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Policeni, B., Rosenow, J. M., Taheri, M. R., & Zander, D. (2020). ACR Appropriateness Criteria® movement disorders and neurodegenerative diseases. *Journal of the American College of Radiology*, 17(5S), S175–S187. https://doi.org/10.1016/j.jacr.2020.01.042
7. Fluorodopa F 18 injection [Package insert]. (2019). U.S. Food and Drug Administration. https://www.accessdata.fda.gov/
8. Halpern, C. H., Santini, V., Lipsman, N., Lozano, A. M., Shah, B. B., & Elias, W. J. (2019). Three-year follow-up of a prospective trial of focused ultrasound thalamotomy for essential tremor. *Neurology*, 93(24), e2284–e2293. https://doi.org/10.1212/WNL.0000000000008561
9. Humanitarian Device Exemption (HDE). (2021). U.S. Food and Drug Administration. https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfhde/
10. Jain, R., & Correll, C. U. (2018). Tardive dyskinesia: Recognition, patient assessment, and differential diagnosis. *Journal of Clinical Psychiatry*, 79(2), nu17034ah1c. https://doi.org/10.4088/JCP.nu17034ah1c
11. Maiti, B., & Perlmutter, J. S. (2023). Imaging in movement disorders. *CONTINUUM: Lifelong Learning in Neurology*, 29(1), 194–218. https://doi.org/10.1212/CON.0000000000001210
12. Mohammed, N., Patra, D., & Nanda, A. (2018). Outcomes and complications of MR-guided focused ultrasound in essential tremor. *Neurosurgical Focus*, 44(2), E4. https://doi.org/10.3171/2017.11.FOCUS17628
13. Morbelli, S., Esposito, G., Arbizu, J., Barthel, H., Boellaard, R., Dierckx, R., & Tatsch, K. (2020). EANM practice guideline/SNMMI procedure standard for dopaminergic imaging in Parkinsonian syndromes 1.0. *European Journal of Nuclear Medicine and Molecular Imaging*, 47(8), 1885–1912. https://doi.org/10.1007/s00259-020-04817-8
14. Perju-Dumbrava, L., & Kempster, P. (2020). Movement disorders in psychiatric patients. *BMJ Neurology Open*, 2(2), e000057. https://doi.org/10.1136/bmjno-2020-000057
15. Politis, M. (2014). Neuroimaging in Parkinson disease: From research setting to clinical practice. *Nature Reviews Neurology,* 10(12), 708–722. https://doi.org/10.1038/nrneurol.2014.205
16. Pouratian, N., Baltuch, G., Elias, W. J., & Gross, R. E. (2019). ASSFN position statement on MR-guided focused ultrasound for essential tremor. N*eurosurgery.* https://doi.org/10.1093/neuros/nyz510
17. Rughani, A., Schwalb, J. M., Sidiropoulos, C., Pilitsis, J. G., Ramirez-Zamora, A., & Foote, K. D. (2018). Evidence-based guideline on deep brain stimulation targets for Parkinson disease. *Neurosurgery*, 82(6), 753–756. https://doi.org/10.1093/neuros/nyy037
18. Sakamoto, F., Shiraishi, S., Ogasawara, K., Sato, S., Tanaka, Y., & Chiba, Y. (2020). Diagnostic strategy for Lewy body disease using DAT-SPECT and MIBG. *Annals of Nuclear Medicine*, 34(6), 415–423. https://doi.org/10.1007/s12149-020-01464-9

19. Schreglmann, S. R., Krauss, J. K., Chang, J. W., Bhatia, K. P., & Kägi, G. (2018). Functional lesional neurosurgery for tremor: Systematic review and meta-analysis. *Journal of Neurology, Neurosurgery & Psychiatry*, 89(7), 717–726. https://doi.org/10.1136/jnnp-2017-316302
20. Serajee, F. J., & Mahbubul Huq, A. H. (2015). Advances in Tourette syndrome. *Pediatric Clinics of North America*, 62(3), 687–701. https://doi.org/10.1016/j.pcl.2015.03.007
21. Shah, B. R., Lehman, V. T., Kaufmann, T. J., Blezek, D., Waugh, J., Imphean, D., Yu, F. F., Patel, T. R., Chitnis, S., Dewey, R. B., Jr., Maldjian, J. A., & Chopra, R. (2020). Advanced MRI techniques for transcranial high-intensity focused ultrasound targeting. *Brain*, 143(9), 2664–2672. https://doi.org/10.1093/brain/awaa107
22. Subramaniam, R. M., Frey, K. A., Hunt, C. H., Meltzer, C. C., Royal, H. D., & Nichols, K. J. (2017). ACR-ACNM practice parameter for dopamine transporter SPECT imaging. *Clinical Nuclear Medicine*, 42(11), 847–852. https://doi.org/10.1097/RLU.0000000000001815
23. Thaler, A., & Alcalay, R. N. (2022). Diagnosis and medical management of Parkinson disease. *CONTINUUM: Lifelong Learning in Neurology*, 28(5), 1281–1300. https://doi.org/10.1212/CON.0000000000001152
24. Wagle Shukla, A. (2022). Diagnosis and treatment of essential tremor. *CONTINUUM: Lifelong Learning in Neurology*, 28(5), 1333–1349. https://doi.org/10.1212/CON.0000000000001181
25. Ward, K. M., & Citrome, L. (2018). Antipsychotic-related movement disorders. *Neurology and Therapy,* 7(2), 233–248. https://doi.org/10.1007/s40120-018-0105-0
26. Xiao, Y., Lau, J. C., Hemachandra, D., Gilmore, G., Khan, A. R., & Peters, T. M. (2021). Image guidance in deep brain stimulation surgery. *IEEE Transactions on Biomedical Engineering*, 68(3), 1024–1033. https://doi.org/10.1109/TBME.2020.3006765

Multiple Sclerosis (MS) and Related Conditions (HD-16)

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Multiple Sclerosis (MS) (HD-16.1)

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Establishing a New Diagnosis of Multiple Sclerosis

Repeat Imaging for Unclear Diagnosis

New Neurologic Symptoms in an Individual with Multiple Sclerosis

Baseline Imaging with Disease Modifying Therapy (DMT)

Current Treatment with High-Risk Disease Modifying Therapy (DMT)

Annual Imaging on Low-Risk DMT or No Treatment

History of Clinically Isolated Syndrome (CIS) or Radiologically Isolated Syndrome (RIS)

Prolonged Treatment with Tysabri® (natalizumab)

Progressive Multifocal Leukoencephalopathy (PML) Evaluation

Background and Supporting Information

Multiple Sclerosis General Information Page

Criteria

- MRI Lumbar Spine is considered not medically necessary since cervical and thoracic studies will usually visualize the entire spinal cord. If the clinical concern is for lumbosacral radiculopathy, see **Lower Extremity Pain with Neurological Features (Radiculopathy, Radiculitis, or Plexopathy and Neuropathy) with or without Low Back (Lumbar Spine) Pain (SP-6.1)** in the Spine Imaging Guidelines.
- Family members need not be screened, unless they exhibit suspicious signs or symptoms suggestive of MS.
- Computed Tomography (CT) scans of the head and/or spine are considered **NOT** medically necessary for the evaluation of multiple sclerosis due to inferior soft tissue resolution when compared to MRI.
- Quantitative Magnetic Resonance Image (MRI) Analysis of the brain
  - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as (CPT® 0865T or CPT® 0866T).

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        - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered not medically necessary in the evaluation of Multiple Sclerosis.
    - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as 3D rendering (CPT® 76376 and CPT® 76377).
        - These studies are considered not medically necessary in the evaluation of multiple sclerosis. These studies lack sufficient specificity and sensitivity to be clinically useful in the evaluation or follow up of individuals with multiple sclerosis. Their use is limited to research studies and are otherwise considered to be not medically necessary in routine clinical practice.
- AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T
    - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

Establishing a New Diagnosis of Multiple Sclerosis

Criteria

Indication	Medically Necessary Imaging
Establishing a new diagnosis of Multiple Sclerosis is based on the following: • Clinical suspicion based on recurrent episodes of variable neurological signs and/or symptoms **AND** • Baseline exclusion of appropriate alternative conditions that can mimic MS **OR** Clinically Isolated Syndrome (CIS)* based on **ALL** the following: • First episode of neurologic symptoms and neurologic deficits concerning for possible demyelinating disease • Symptoms last 24 hours or longer • Baseline exclusion of appropriate alternative conditions that can mimic MS **OR** Radiologically Isolated Syndrome (RIS)* based on **ALL** the following: • Individual with brain MRI obtained for unrelated reason with findings conspicuous for demyelinating disease	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) if there is a contraindication to gadolinium If optic neuritis** is suspected the following imaging is **ALSO** considered medically necessary: • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) ****For additional information related to optic neuritis see Eye Disorders and Visual Loss (HD-32.1)** **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146)

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Indication	Medically Necessary Imaging
• Baseline exclusion of appropriate alternative conditions that can mimic MS	

Repeat Imaging for Unclear Diagnosis

Criteria

Indication	Medically Necessary Imaging
Diagnosis of Multiple Sclerosis remains unclear or equivocal after initial MRI • Repeat imaging 3-6 months after initial MRI Brain	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553)

New Neurologic Symptoms in an Individual with Multiple Sclerosis

Criteria

Indication	Medically Necessary Imaging
New neurologic signs or symptoms in an individual with multiple sclerosis	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) If optic neuritis is suspected**, the following imaging is **ALSO** considered medically necessary: • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) ****For additional information related to optic neuritis, see Eye Disorders and Visual Loss (HD-32.1)** If there are new or worsening symptoms concerning for spinal cord involvement, the following imaging is **ALSO** considered medically necessary: • MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

Baseline Imaging with Disease Modifying Therapy (DMT)

Criteria

Indication	Medically Necessary Imaging
• Before starting **OR** changing disease modifying therapy (DMT) **AND/OR** • 3-6 months after starting or changing DMT to establish a new MRI treatment baseline **AND/OR** • If there are new abnormal MRI Brain findings without clinical symptoms, an additional follow-up MRI Brain is supported after 6 months	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553)

Current Treatment with High-Risk Disease Modifying Therapy (DMT)

Criteria

Indication	Medically Necessary Imaging *Every 6 Months*	Medically Necessary Imaging *Annually*
Individuals treated with DMT* associated with either the risk of progressive multifocal leukoencephalopathy (PML) **AND/OR** other CNS opportunistic infections * For list of medications, see *Background and Supporting Information*	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553)	• MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

Annual Imaging on Low-Risk DMT or No Treatment

Criteria

Indication	Medically Necessary Imaging Annually
Individuals with diagnosed multiple sclerosis with **EITHER** of the following: • Not treated with disease modifying therapy (DMT)* **OR** • Treated with low-risk DMT (beta interferon or glatiramer acetate medications) * For list of DMT medications, see *Background and Supporting Information*	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

History of Clinically Isolated Syndrome (CIS) or Radiologically Isolated Syndrome (RIS)

Criteria

Indication	Medically Necessary Imaging *Annually*
Individual with history of Clinically Isolated Syndrome* (CIS) **OR** Individual with history of Radiologically Isolated Syndrome* (RIS) *For more information about CIS or RIS, see *Background and Supporting Information*	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) If there are new or worsening symptoms concerning for spinal cord involvement, the following imaging is **ALSO** considered medically necessary: • MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) OR • MRI Thoracic Spine without and with contrast (CPT® 72157)

Prolonged Treatment with Tysabri® (natalizumab)

Criteria

Indication	Medically Necessary Imaging *Every 3-6 Months*	Medically Necessary Imaging *Annually*
Individuals treated with Tysabri® (natalizumab) with the following medical history: • 18 months or longer of treatment ◦ During Tysabri® (natalizumab) treatment and up to 9-12 months after transitioning off Tysabri® (natalizumab) **AND** • JC virus antibody positive	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553)	• MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

Progressive Multifocal Leukoencephalopathy (PML) Evaluation

Criteria

Indication	Medically Necessary Imaging
Symptoms suggestive of PML* during treatment with Tysabri® (natalizumab) or other medication with similar risk * For more information about PML, see *Background and Supporting Information*	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553)

Background and Supporting Information

- Multiple sclerosis is an autoimmune disease that is associated with inflammation, demyelination, and neurodegenerative changes within the optic nerves, brain, and spinal cord (i.e., central nervous system (CNS)).

- Multiple sclerosis commonly begins with a relapsing-remitting course with partial or complete neurologic recovery following acute events.
  - An acute demyelinating event lasts at least 24 hours or longer
  - Common types of MS relapses include:
    - Unilateral optic neuritis
    - Brainstem or cerebellar syndrome (i.e. trigeminal neuralgia, diplopia or intranuclear ophthalmoplegia (INO), and/or ataxia)
    - Partial transverse myelitis
- The first event concerning for demyelinating disease without meeting criteria for separation of time is known as a clinically isolated syndrome (CIS).
- Individuals who undergo a brain MRI for other indications (i.e., headaches, trauma, seizure) which incidentally reveals abnormalities that are characteristic for demyelination in the absence of clinical symptoms is known as radiologically isolated syndrome (RIS).
- Progressive Multifocal Leukoencephalopathy (PML) is a progressive multi-focal disease of the central nervous system that can occur in individuals treated with immunosuppressive or immunomodulatory medications.
  - In individuals treated with natalizumab, there is an increased risk of developing PML in individuals who:
    - Received prior immunosuppressive medication, and/or
    - Have a high JC virus antibody index, and/or
    - Received natalizumab for 18 months or longer
- Interferon beta medications include (but are not limited to): Avonex®, Betaseron®, Extavia®, Plegridy®, Rebif®
- Glatiramer acetate medications include (but are not limited to): Copaxone, Glatopa®
- High-risk medications are associated with a risk of PML and/or other CNS opportunistic infections (i.e. herpes encephalitis, cryptococcal meningitis). These include (but are not limited to): Tysabri® (natalizumab), Tecfidera® (dimethyl fumarate), Gilenya® (fingolimod), Tascenso® ODT (fingolimod), Aubagio® (teriflunomide), Ocrevus® (ocrelizumab), Kesimpta® (ofatumumab), Mavenclad® (cladribine), Mayzent® (siponimod), Ponvory® (ponesimod), Vumerity® (diroximel fumarate), Zeposia® (ozanimod), Lemtrada® (alemtuzumab), Bafiertam® (monomethyl fumarate), Briumvi® (ublituximab), Rituxan® (rituximab)

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Neuromyelitis Optica Spectrum Disorders (HD-16.2)

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Criteria

Initial evaluation of Neuromyelitis Optica (NMO) or Neuromyelitis Optica Spectrum Disorders (NMOSD) with any of the following:

Indication	Medically Necessary Imaging
Clinical concern for optic neuritis	• MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540)
Recurrent hiccups or intractable nausea and/or vomiting (clinical concern for area postrema syndrome)	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)
Other neurologic signs or symptoms concerning for brain involvement	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)

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Indication	Medically Necessary Imaging
Clinical concern for transverse myelitis	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148)

Indication	Medically Necessary Imaging
Positive NMO antibody test when ordered by a neurologist or any provider in consultation with a neurologist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146)

Individual with established diagnosis of (NMOSD) with any of the following:

Indication	Medically Necessary Imaging
Clinical concern for optic neuritis	• MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540)
New neurologic signs or symptoms concerning for brain involvement	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)

Indication	Medically Necessary Imaging
Clinical concern for transverse myelitis	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148)

Indication	Medically Necessary Imaging
Repeat imaging for **ANY** of the following: • Re-establish baseline after starting treatment (typically 3-6 months after last MRI) • Changing disease modifying therapy (DMT) • As requested when ordered by a neurologist, neuro-ophthalmologist, ophthalmologist, or any provider in consultation with a neurologist, neuro-ophthalmologist, or ophthalmologist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146)

- For Neuromyelitis Optica Spectrum Disorder with concern for occult neoplasm, see **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines.
- Computed Tomography (CT) scans of the head and/or spine are not recommended for the evaluation of NMOSD due to inferior soft tissue resolution when compared to MRI.
- Quantitative Magnetic Resonance Image (MRI) Analysis of the Brain
  - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as (CPT® 0865T or CPT® 0866T)
    - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are not medically necessary in the evaluation of NMOSD).
  - Volumetric or quantitative analysis of the brain or temporal lobes and hippocampus may be ordered as 3D rendering (CPT® 76376 or CPT® 76377).
    - These studies are considered not medicaly necessary in the evaluation of NMOSD.

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These studies lack sufficient specificity and sensitivity to be clinically useful in the evaluation or follow up of individuals with NMOSD. Their use is limited to research studies and are otherwise considered to be not medically necessary in routine clinical practice.

- AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T
  - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

Background and Supporting Information

- Neuromyelitis optica spectrum disorder (NMOSD, Devic's disease) is a chronic inflammatory autoimmune disease that involves the optic nerves, spinal cord, and brain.
- Core clinical characteristics of NMOSD include:
  - Optic neuritis
    - Frequently bilateral optic nerve involvement with severe vision loss
  - Longitudinally extensive transverse myelitis
    - Extends 3 or more complete vertebral segments of the spinal cord
  - Area postrema syndrome
    - Otherwise, unexplained episode of recurrent hiccups or intractable nausea and vomiting
  - Brainstem or cerebral syndrome with NMOSD typical brain lesions
  - Rarely paraneoplastic syndromes occur with NMO spectrum disorder
  - Medications used for the treatment of NMO spectrum disorders include (but are not limited to) azathioprine, Enspryng® (satralizumab), mycophenolate, Soliris® (eculizumab), rituximab, Uplizna® (inebilizumab) and Ultomiris® (ravulizumab)[54]
    - Possible adverse reactions associated with treatment include risk of PML and meningococcal infections.

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MOG Antibody-Associated Disease (MOGAD) (HD-16.3)

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Criteria

Initial evaluation of MOG (myelin oligodendrocyte glycoprotein) antibody-associated diseases (MOGAD) with any of the following:

Indication	Medically Necessary Imaging
Clinical concern for optic neuritis	• MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540)
Neurologic signs or symptoms concerning for brain involvement	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)
Clinical concern for transverse myelitis	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148)

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Indication	Medically Necessary Imaging
Positive MOG antibody test when ordered by a neurologist or any provider in consultation with a neurologist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148)

Individuals with established diagnosis of (MOGAD) with any of the following:

Indication	Medically Necessary Imaging
Clinical concern for optic neuritis	• MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540)
Neurologic signs or symptoms concerning for brain involvement	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)

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Indication	Medically Necessary Imaging
Clinical concern for transverse myelitis	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148)
Repeat imaging for **ANY** of the following: • Re-establish baseline after starting treatment (typically 3-6 months after last MRI) • Changing disease modifying therapy (DMT) • As requested when ordered by a neurologist, neuro-ophthalmologist, ophthalmologist, or any provider in consultation with a neurologist, neuro-ophthalmologist, or ophthalmologist	• MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) **AND/OR** • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) **AND/OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** MRI Thoracic Spine without contrast (CPT® 72146)

- For MOG (myelin oligodendrocyte glycoprotein) Antibody-Associated Disease with concern for occult neoplasm, see **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines.
- Computed Tomography (CT) scans of the head and/or spine are not recommended for the evaluation of MOG (myelin oligodendrocyte glycoprotein) Antibody-Associated Disease due to inferior soft tissue resolution when compared to MRI.

Background and Supporting Information

- MOG (myelin oligodendrocyte glycoprotein)-IgG disorders are CNS inflammatory diseases, distinct from multiple sclerosis and NMO-spectrum disorders.
- Unlike multiple sclerosis and neuromyelitis optica spectrum disorder (NMOSD), individuals with MOG antibody-associated disease (MOGAD) can have a monophasic or relapsing course.
  - Relapses are more common in the first six months after the first episode.
  - An acute relapse is considered when an individual with MOGAD develops new neurologic signs or symptoms at least 30 days following the previous event.
- Diagnosis is based on the clinical presentation, MRI findings, and the presence of auto-antibodies.
- Clinical features of individuals with MOGAD include
  - Optic neuritis
    - Bilateral optic neuritis is common at onset, and seems to be more frequent in individuals with MOGAD than with those with multiple sclerosis or neuromyelitis optica spectrum disorder (NMOSD).
    - Vision improves quickly with return to normal or near normal visual acuity following treatment with intravenous corticosteroids.
  - Transverse myelitis
    - Cauda equina and peripheral nerve root involvement can occur (lumbar spine imaging is considered medically necessary)
    - Can occur as an isolated episode of transverse myelitis, as a component of ADEM or in conjunction with optic neuritis.
    - T2 spinal cord lesions often are centrally located and can be restricted to the grey matter producing the “H sign” on MRI
    - Most T2 lesions resolve or reduce in size substantially on follow-up MRI
  - Brainstem encephalitis
  - Encephalitis with seizures
  - Acute disseminated encephalomyelitis (ADEM)
    - Occurs mainly in children but can occur in adults.
  - Tumefactive brain lesions
  - Cranial neuropathies

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- Unlike multiple sclerosis, it is rare for individuals with MOGAD to develop asymptomatic lesions within the brain, optic nerves, and/or spinal cord.

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Transverse Myelitis (HD-16.4)

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Criteria

An initial assessment, to include a pertinent history and neurologic exam, should be performed prior to imaging requests.

Clinical Concern for Transverse Myelitis

Indication	Medically Necessary Imaging
Clinical concern for transverse myelitis	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** Due to potential for conus involvement: • MRI Lumbar Spine without and with contrast (CPT® 72158) **OR** • MRI Lumbar Spine without contrast (CPT® 72148) **AND/OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) If optic neuritis is suspected*, the following imaging is **ALSO** considered medically necessary: • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) ***For additional information related to optic neuritis see Eye Disorders and Visual Loss (HD-32.1)**

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New Neurologic Signs or Symptoms in an individual with a history of transverse myelitis (TM)

Indication	Medically Necessary Imaging
New neurologic signs or symptoms	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551) If optic neuritis is suspected*, the following imaging is **ALSO** considered medically necessary: • MRI Orbit without and with contrast (CPT® 70543) **OR** • MRI Orbit without contrast (CPT® 70540) ***For additional information related to optic neuritis, see Eye Disorders and Visual Loss (HD-32.1)**

Surveillance of Transverse Myelitis

Indication	Medically Necessary Imaging Annually for 5 years
Individual with a history of transverse myelitis • Ordered by a neurologist or any provider in consultation with a neurologist	• MRI Cervical Spine without and with contrast (CPT® 72156) **OR** • MRI Cervical Spine without contrast (CPT® 72141) **AND/OR** • MRI Thoracic Spine without and with contrast (CPT® 72157) **OR** • MRI Thoracic Spine without contrast (CPT® 72146) **AND/OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • MRI Brain without contrast (CPT® 70551)

- For transverse myelitis with concern for occult neoplasm, see **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines.
- Individuals with transverse myelitis present with various symptoms of sensory, motor and/or autonomic dysfunction.
  - Bilateral signs and/or symptoms (although not necessarily symmetrical)
  - Examination findings may include but are not limited to any of the following:
    - Bilateral limb weakness
    - Loss of manual dexterity
    - New or worsening foot drop
    - Sensory level
    - Hyperreflexia (including upgoing toes, positive Babinski, Hoffman's sign, clonus)
    - Gait abnormality (spastic or ataxic gait)
  - If inflammation is identified within the spinal cord suggestive of transverse myelitis, a brain MRI is recommended to evaluate for a multifocal inflammatory process
- See **Multiple Sclerosis (MS) (HD-16.1)**, **Neuromyelitis Optica Spectrum Disorders (HD-16.2)**, **MOG Antibody-Associated Diseases (MOGAD) (HD-16.3)**

Background and Supporting Information

- Symptoms may include but are not limited to the following:
  - Motor weakness of a limb or limbs, including paraparesis and/or complete paralysis
  - Change in sensation in a limb or limbs that may be associated with paresthesias and/or dysthesias.

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  - Urinary urgency, incontinence, and/or urinary retention
  - Worsening constipation and/or bowel urgency/incontinence
  - Sexual dysfunction
  - Lhermitte's sign
  - New or worsening spasticity
- Acute transverse myelitis is defined as an acute inflammatory syndrome leading to motor and/or sensory impairment, with or without sphincter dysfunction, secondary to a variety of autoimmune or inflammatory diseases.
- Diagnosed by spinal MRI and/or cerebrospinal fluid.
- Individuals typically progress to maximal neurological deficits within 4 weeks.
- Longitudinally extensive transverse myelitis (≥3 vertebral segments) is more commonly associated with neuromyelitis optica spectrum disorders (NMOSD) and/or MOG antibody-associated diseases (MOGAD)
- Transverse myelitis:
  - May be idiopathic
  - Initial event of multiple sclerosis (see **Multiple Sclerosis (MS) (HD-16.1)**
  - Initial event of neuromyelitis optica spectrum disorder (NMOSD) (see **Neuromyelitis Optica Spectrum Disorders (HD-16.2)**)
  - Initial event of MOG antibody-associated disease (MOGAD) (see **MOG Antibody-Associated Diseases (MOGAD) (HD-16.3)**)
  - May be associated with connective tissue disease
    - Systemic lupus erythematous (SLE)
    - Rheumatoid Arthritis (RA)
    - Sjögren's syndrome
    - Systemic sclerosis
  - Manifestation of neurosarcoidosis (see **Autoimmune/Paraneoplastic Encephalitis & Neuroinflammatory Disorders (HD-14.3)**)
  - Post-infectious and/or post-vaccination related
    - COVID-19 and COVID-19 post-vaccination myelitis cases have been reported (see **Neuro-COVID-19 and Sars-COV-2 Vaccines (HD-14.2)**)
    - May have a prodromal syndrome with fever, respiratory and/or gastrointestinal symptoms
    - May be associated with headache, neck stiffness or recurrence of fever

Evidence Discussion (HD-16)

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- Magnetic resonance imaging (MRI) is the recommended imaging modality for the diagnosis and monitoring of multiple sclerosis (MS) and other inflammatory diseases of the central nervous system (CNS). Its high sensitivity for the evaluation of inflammatory and neurodegenerative processes in the brain and spinal cord has made it the gold standard for the evaluation of individuals with MS (Expert Panel on Neurologic Imaging et al., 2018; Jarius et al., 2023).
- Computed Tomography Scan (CT) is not recommended for the evaluation of MS due to inferior soft tissue resolution when compared to MRI (Banwell et al., 2023; ACR, 2024; Expert Panel on Neurological Imaging et al., 2021).
- MRI plays an important role in the following clinical scenarios:
  - establishing the diagnosis of multiple sclerosis (MS) by establishing evidence for dissemination in space and time (Expert Panel on Neurologic Imaging et al., 2018; Jarius et al., 2023).
  - diagnostic workup. Approximately 50%-90% of individuals with MS have spinal cord lesions (Expert Panel on Neurological Imaging et al., 2018).
  - detecting optic nerve abnormalities in individuals with symptoms concerning for optic neuritis (Kaunzer & Gauthier, 2017; Expert Panel on Neurologic Imaging et al., 2021).
  - assessment of treatment response and in monitoring for potential treatment related safety concerns. Management and surveillance intervals are primarily consensus based and have been addressed in several evidence and practice-based guidelines (Kaunzer & Gauthier, 2017; Expert Panel on Neurological Imaging et al., 2018) .
  - evaluation of other central nervous system (CNS) inflammatory diseases, including autoimmune disseminated encephalomyelitis (ADEM), neuromyelitis optica (NMO), myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD) and transverse myelitis (TM) (Banwell et al., 2023; Jarius et al., 2023; Transverse Myelitis Consortium Working Group, 2002; Shahriai et al., 2021).
  - detecting conus medullaris involvement in individuals with myelin oligodendrocyte glycoprotein-associated disease (MOGAD) and transverse myelitis (Banwell et al.,2023; Transverse Myelitis Consortium Working Group, 2002; Shahriai et al., 2021).

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References (HD-16)

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1. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
2. Banwell, B., Bennett, J. L., Marignier, R., Weinshenker, B. G., Wingerchuk, D. M., Traboulsee, A. L., & International MOGAD Panel. (2023). Diagnosis of myelin oligodendrocyte glycoprotein antibody–associated disease: International MOGAD Panel proposed criteria. *The Lancet Neurology*, 22(3), 268–282. https://doi.org/10.1016/S1474-4422(22)00431-8
3. Berger, B., Hottenrott, T., Rauer, S., & Stich, O. (2017). Screening for onconeural antibodies in neuromyelitis optica spectrum disorders. *BMC Neurology*, 17(1), 1–7. https://doi.org/10.1186/s12883-016-0779-9
4. Bulut, E., Shoemaker, T., Karakaya, J., Greenberg, B. M., & Bhadelia, R. A. (2019). MRI predictors of recurrence and outcome after acute transverse myelitis of unidentified etiology. *American Journal of Neuroradiology*, 40(8), 1427–1432. https://doi.org/10.3174/ajnr.A6121
5. Carnero Contentti, E., & Correale, J. (2021). Neuromyelitis optica spectrum disorders: From pathophysiology to therapeutic strategies. *Journal of Neuroinflammation*, 18(1), 1–23. https://doi.org/10.1186/s12974-021-02249-1
6. Ciccarelli, O., Cohen, J. A., Reingold, S. C., Weinshenker, B. G., Amato, M. P., Banwell, B., Barkhof, F., Bebo, B., Becher, B., & Bauer, J. (2019). Spinal cord involvement in multiple sclerosis and neuromyelitis optica spectrum disorders. *The Lancet Neurology*, 18(2), 185–197. https://doi.org/10.1016/S1474-4422(18)30460-5
7. Darrudi, R., Hosseini, A., Emami, H., Roshanpoor, A., & Nahayati, M. A. (2025). Artificial intelligence in the diagnosis of multiple sclerosis using brain imaging modalities: A systematic review and meta-analysis of algorithms. *Medicine*, 104(38), e44493. https://doi.org/10.1097/MD.0000000000044493
8. De Stefano, N., Battaglini, M., Pareto, D., Barkhof, F., Ciccarelli, O., Enzinger, C., Filippi, M., Frederiksen, J. L., & Vrenken, H. (2022). MAGNIMS recommendations for harmonization of MRI data in multiple sclerosis multicenter studies. *NeuroImage: Clinical*, 34, 102972. https://doi.org/10.1016/j.nicl.2022.102972
9. Ding, M., Lang, Y., & Cui, L. (2021). AQP4-IgG positive paraneoplastic neuromyelitis optica spectrum disorder: A case report and review. *Brain and Behavior*, 11(10), e2282. https://doi.org/10.1002/brb3.2282
10. Expert Panel on Neurologic Imaging, Kalnins, A., Lewis, L. M., Soderlund, K. A., Austin, M. J., Chu, S., Hawley, D. B., Kontzialis, M., Levy, M., McMenamy, J., Ritter, J. B., Thaker, A. A., & Shih, R. Y. (2026). ACR Appropriateness Criteria® Demyelinating Diseases. *Journal of the American College of Radiology : JACR*, 23(6), 1183–1214. https://doi.org/10.1016/j.jacr.2026.02.003
11. Expert Panel on Neurologic Imaging, Kennedy, T. A., Corey, A. S., Policeni, B., Agarwal, M., Burns, J., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Juliano, A. F., Rosenow, J. M., Taheri, M. R., & Zander, D. (2018). ACR Appropriateness Criteria® orbits, vision, and visual loss. *Journal of the American College of Radiology*, 15(5S), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
12. Expert Panel on Neurological Imaging, Peckham, M., Hutchins, T. A., Amrhein, T. J., Eldaya, R. W., Grayev, A., Griffith, B., Hassankhani, A., Mazur, M., Ormsby, J., Parvez, O., Reitman, C., Spina, N., Toledano, M., Venkataraman, G., Yahyavi-Firouz-Abadi, N., & Shih, R. Y. (2026). ACR Appropriateness Criteria® Myelopathy: 2026 Update. *Journal of the American College of Radiology* : JACR, S1546-1440(26)00293-0. Advance online publication. https://doi.org/10.1016/j.jacr.2026.06.003
13. Gastaldi, M., Marchioni, E., Banfi, P., Barreca, G., Tonolo, S., & Protti, A. (2018). Predictors of outcome in transverse myelitis. *Multiple Sclerosis Journal*, 24(13), 1743–1752. https://doi.org/10.1177/1352458517731911
14. Genovese, A. V., Hagemeier, J., Bergsland, N., Weinstock-Guttman, B., Dwyer, M. G., Zivadinov, R., & Jakimovski, D. (2019). Atrophied brain T2 lesion volume and disability progression in multiple sclerosis. *Radiology*, 293(2), 424–433. https://doi.org/10.1148/radiol.2019190306
15. Hegen, H., & Reindl, M. (2020). Recent developments in MOG-IgG–associated neurological disorders. *Therapeutic Advances in Neurological Disorders*, 13, 1756286420945135. https://doi.org/10.1177/1756286420945135
16. Holmøy, T., Høglund, R. A., Illes, Z., Myhr, K. M., & Torkildsen, Ø. (2021). Recent progress in maintenance treatment of neuromyelitis optica spectrum disorder. *Journal of Neurology*, 268(12), 4522–4536. https://doi.org/10.1007/s00415-020-10235-5

17. Hornby, P. J. (2001). Central neurocircuitry associated with emesis. *The American Journal of Medicine*, 111(8), 106–112. https://doi.org/10.1016/S0002-9343(01)00849-X
18. Ismail, I. I., & Salama, S. (2022). Association of CNS demyelination and COVID-19 infection. *Journal of Neurology,* 269(2), 541–576. https://doi.org/10.1007/s00415-021-10752-x
19. Jakimovski, D., Zivadinov, R., Bergsland, N., Ramasamy, D. P., Hagemeier, J., Genovese, A. V., Hojnacki, D., Weinstock-Guttman, B., & Dwyer, M. G. (2021). Longitudinal ventricular volume measurement across MRI scanner changes. *NeuroImage: Clinical*, 29, 102554. https://doi.org/10.1016/j.nicl.2020.102554
20. Jarius, S., Aktas, O., Ayzenberg, I., Asgari, N., Barnett, M. H., Bennett, J. L., Brilot, F., Chitnis, T., Fujihara, K., Kim, H. J., Kleiter, I., Leite, M. I., & Reindl, M. (2023). Revised NEMOS recommendations for NMOSD: Diagnosis and differential diagnosis. *Journal of Neurology*. https://doi.org/10.1007/s00415-023-11634-0
21. Kaunzner, U. W., & Gauthier, S. A. (2017). MRI in the assessment and monitoring of multiple sclerosis. *Therapeutic Advances in Neurological Disorders*, 10(6), 247–261. https://doi.org/10.1177/1756285617708911
22. Kartau, M., Sipilä, J. O. T., Auvinen, E., Palomäki, M., & Verkkoniemi-Ahola, A. (2019). Progressive multifocal leukoencephalopathy: Current insights. *Degenerative Neurological and Neuromuscular Disease*, 9, 109–121. https://doi.org/10.2147/DNND.S203405
23. Khan, E., Shrestha, A. K., Colantonio, M. A., Liberio, R. N., & Sriwastava, S. (2022). Acute transverse myelitis following SARS-CoV-2 vaccination: A case report and review of the literature. *Journal of Neurology*, 269(3), 1121–1132. https://doi.org/10.1007/s00415-021-10785-2
24. Kümpfel, T., Giglhuber, K., Aktas, O., Ayzenberg, I., Bellmann-Strobl, J., Häußler, V., Havla, J., Hellwig, K., Hümmert, M. W., Jarius, S., Kleiter, I., Klotz, L., Krumbholz, M., Paul, F., Ringelstein, M., Ruprecht, K., Senel, M., Stellmann, J.-P., Then Bergh, F., Trebst, C., Tumani, H., Warnke, C., Wildemann, B., & Berthele, A. (2024). Update on the diagnosis and treatment of neuromyelitis optica spectrum disorders (NMOSD): Revised recommendations of the Neuromyelitis Optica Study Group (NEMOS). Part II: Attack therapy and long-term management. *Journal of Neurology*, 271(1), 141–176. https://doi.org/10.1007/s00415-023-11910-z
25. Lavi, E. S., Pal, A., Bleicher, D., Kang, K., & Sidani, C. (2018). MR imaging of the spine: Urgent and emergent indications. Seminars in Ultrasound, CT and MRI, 39(6), 551–569. https://doi.org/10.1053/j.sult.2018.10.006
26. Lopez Chiriboga, S., & Flanagan, E. P. (2021). Myelitis and other autoimmune myelopathies. *CONTINUUM: Lifelong Learning in Neurology*, 27(1), 62–92. https://doi.org/10.1212/CON.0000000000000900
27. Lublin, F. D., Reingold, S. C., Cohen, J. A., Cutter, G. R., Sørensen, P. S., Thompson, A. J., Wolinsky, J. S., Balcer, L. J., & Banwell, B. (2014). Defining the clinical course of multiple sclerosis. *Neurology*, 83(3), 278–286. https://doi.org/10.1212/WNL.0000000000000560
28. Major, E. O. (2018). Progressive multifocal leukoencephalopathy lesions and JC virus. *JAMA Neurology*, 75(7), 789. https://doi.org/10.1001/jamaneurol.2018.0004
29. Marrodan, M., Hernandez, M. A., Kohler, A. A., & Correale, J. (2020). Differential diagnosis in acute inflammatory myelitis. *Multiple Sclerosis and Related Disorders*, 46, 102481. https://doi.org/10.1016/j.msard.2020.102481
30. Molazadeh, N., Bose, G., Lotan, I., & Levy, M. (2022). Autoimmune diseases and cancers overlapping with myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD): A systematic review. *Multiple Sclerosis Journal – Experimental, Translational and Clinical*, 8(4), 20552173221128170. https://doi.org/10.1177/20552173221128170
31. Murphy, O. C., Messacar, K., Benson, L., Ryding, J., & Tyler, K. L. (2021). Acute flaccid myelitis. *The Lancet*, 397(10271), 334–346. https://doi.org/10.1016/S0140-6736(20)32723-9
32. NeuroQuant®. (2025). NeuroQuant automated brain MRI volumetrics. Cortechs.ai. https://www.cortechs.ai
33. Okuda, D. T., Kantarci, O., Lebrun-Frénay, C., Siva, A., Vukusic, S., Freedman, M. S., Polman, C. H., & Tintoré, M. (2023). Dimethyl fumarate delays multiple sclerosis in radiologically isolated syndrome. *Annals of Neurology*, 93(3), 604–614. https://doi.org/10.1002/ana.26555
34. Rae-Grant, A., Day, G. S., Marrie, R. A., Rabinstein, A., Cree, B. A. C., Gronseth, G. S., & Practice Guideline Subcommittee of the American Academy of Neurology. (2018). Disease-modifying therapies for adults with multiple sclerosis. *Neurology,* 90(17), 789–800. https://doi.org/10.1212/WNL.0000000000005345
35. Reich, D. S., Lucchinetti, C. F., & Calabresi, P. A. (2018). Multiple sclerosis. *New England Journal of Medicine*, 378(2), 169–180. https://doi.org/10.1056/NEJMra1401483
36. Saslow, L., Li, D. K. B., Halper, J., Treadaway, K., & Zackowski, K. (2020). An international standardized magnetic resonance imaging protocol for diagnosis and follow-up of patients with multiple sclerosis. *International Journal of MS Care*, 22(5), 226–232. https://doi.org/10.7224/1537-2073.2020-094

37. Sastre-Garriga, J., Pareto, D., Battaglini, M., Rocca, M. A., Ciccarelli, O., Enzinger, C., Filippi, M., & Barkhof, F. (2020). MAGNIMS recommendations on brain and spinal cord atrophy measures. *Nature Reviews Neurology*, 16(3), 171–182. https://doi.org/10.1038/s41582-020-0314-x
38. Sarbu, N., Lolli, V., & Smirniotopoulos, J. G. (2019). MRI in myelopathy: A pictorial review. *Clinical Imaging*, 57, 56–68. https://doi.org/10.1016/j.clinimag.2019.05.002
39. Shahriari, M., Sotirchos, E. S., Newsome, S. D., & Yousem, D. M. (2021). MOGAD imaging features. *American Journal of Roentgenology*, 216(4), 1031–1039. https://doi.org/10.2214/AJR.20.24061
40. Shosha, E., Dubey, D., Palace, J., Jacob, A., Leite, M. I., Weinshenker, B. G., & Pittock, S. J. (2018). Area postrema syndrome. *Neurology,* 91(17), e1649–e1658. https://doi.org/10.1212/WNL.0000000000006392
41. Stern, B. J., Royal, W., Gelfand, J. M., Clifford, D. B., Tavee, J., Pawate, S., Aksamit, A. J., & Judson, M. (2018). Consensus diagnostic criteria for neurosarcoidosis. *JAMA Neurology*, 75(12), 1546–1553. https://doi.org/10.1001/jamaneurol.2018.2295
42. Thompson, A. J., Banwell, B. L., Barkhof, F., Carroll, W. M., Coetzee, T., Comi, G., Corrales, J. A., Cutter, G., & Giovannoni, G. (2018). Diagnosis of multiple sclerosis: 2017 revisions. *The Lancet Neurology*, 17(2), 162–173. https://doi.org/10.1016/S1474-4422(17)30470-2
43. Tillema, J. M. (2023). Imaging of central nervous system demyelinating disorders. *CONTINUUM: Lifelong Learning in Neurology,* 29(1), 292–323. https://doi.org/10.1212/CON.0000000000001246
44. Transverse Myelitis Consortium Working Group. (2002). Diagnostic criteria and nosology of acute transverse myelitis. *Neurology*, 59(4), 499–505. https://doi.org/10.1212/WNL.59.4.499
45. Trentinaglia, M., Dinoto, A., Carta, S., Chiodega, V., Ferrari, S., Andreone, V., Maniscalco, G. T., & Mariotto, S. (2023). Investigating the association between neoplasms and MOG antibody-associated disease. *Frontiers in Neurology,* 14, 1193211. https://doi.org/10.3389/fneur.2023.1193211
46. Vukusic, S., Rollot, F., Casey, R., Papeix, C., Vidal-Jordana, A., Lebrun-Frénay, C., & Viallard, J. F. (2020). Progressive multifocal leukoencephalopathy risk in natalizumab. *JAMA Neurology*, 77(1), 94–102. https://doi.org/10.1001/jamaneurol.2019.2670
47. Wattjes, M. P., Barkhof, F. (2014). MRI diagnosis of natalizumab-associated PML. *Current Opinion in Neurology*, 27(3), 260–270. https://doi.org/10.1097/WCO.0000000000000099
48. Wattjes, M. P., Ciccarelli, O., Reich, D. S., Banwell, B., de Stefano, N., Enzinger, C., Filippi, M., Frederiksen, J., Gasperini, C., Hoggard, N., & MAGNIMS-CMSC-NAIMS Consortium. (2021). MRI in patients with multiple sclerosis: Consensus recommendations. The Lancet Neurology, 20(8), 653–670. https://doi.org/10.1016/S1474-4422(21)00095-8
49. Wingerchuk, D. M., Banwell, B., Bennett, J. L., Cabre, P., Carroll, W., Chitnis, T., de Seze, J., Fujihara, K., Greenberg, B., Jacob, A., & Weinshenker, B. G. (2015). International consensus diagnostic criteria for NMOSD. *Neurology*, 85(2), 177–189. https://doi.org/10.1212/WNL.0000000000001729
50. Winkelmann A, Loebermann M, Reisinger EC, Hartung H-P, Zettl UK. Disease-modifying therapies and infectious risks in multiple sclerosis. *Nature Reviews Neurology*. 2016;12(4):217-233. doi:10.1038/nrneurol.2016.21

Papilledema/Pseudotumor Cerebri (HD-17)

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Papilledema/Pseudotumor Cerebri (HD-17.1)

HD.PP.0017.1.A
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Criteria

- See **Eye Disorders and Visual Loss (HD-32.1)**
- Papilledema and Pseudotumor Cerebri (Idiopathic Intracranial Hypertension, Benign Intracranial Hypertension):
  - MRI Orbits/Face/Neck without contrast (CPT® 70540) **OR** MRI Orbits/Face/Neck without and with contrast (CPT® 70543) **OR** CT Orbits/Temporal bone with contrast (CPT® 70481) **OR** CT Orbit/Temporal bone without contrast (CPT® 70480) **AND/OR** MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is/are considered medically necessary for:
    - Suspected elevated intracranial pressure **AND/OR** papilledema
    - CT Head without contrast (CPT® 70450) is considered medically necessary when MRI is contraindicated or for urgent evaluation
    - See **General Guidelines – CT Head (HD-1.4)** regarding required use of CT Head prior to lumbar puncture and/or spinal tap.
    - See **Eye Disorders and Visual Loss (HD-32.1)** regarding concern for orbital pseudotumor or primary orbital disorder.
  - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496) is considered medically necessary, in addition, for venogram when requested.
    - CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code should be used to report both procedures
    - See **Stroke/TIA (HD-21.1)**
    - See **Cerebral Venous Thrombosis (HD-21.8)**
  - Repeat structural and/or vascular imaging, with any of the above listed studies, for follow-up, including to confirm stent patency, and for evaluation of worsening symptoms, or suspected complications, as requested by a neurologist or a neurosurgeon or any provider in consultation with a neurologist or a neurosurgeon.
    - See also **Hydrocephalus Shunts (HD-11.14)**

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Background and Supporting Information

Treatment for idiopathic intracranial hypertension (IIH) includes weight loss and acetazolamide. Surgical interventions include optic nerve sheath fenestration, cerebrospinal fluid shunting, and bariatric surgeries. These surgical procedures are invasive and associated with complications.

Venous sinus stenting is a treatment option for those with idiopathic intracranial hypertension who have failed first line therapy. Prior to stenting, individuals should undergo venography. CTV and/or MRV can be performed to confirm stent patency.

Stenting improves tinnitus, papilledema, diplopia/visual disturbances, and headaches.

Post-stent complications include subdural hematoma, subarachnoid hemorrhage, worsening headaches, visual impairment, worsening papilledema, blindness, arterial dissection, and death. Venous sinus stenting has lower complications relative to surgical interventions.

Evidence Discussion (HD-17)

- In the evaluation of suspected or known intracranial hypertension and/or exam findings of papilledema, neuroimaging is helpful for diagnosis, excluding other structural causes, and for the identification of venous outflow obstruction (Expert Panel on Neurologic Imaging et al., 2022; Wall, 2017; Costello & Scott, 2019).
- MRI Brain allows detection of findings supportive of intracranial hypertension and detection of structural abnormalities such as mass, edema, or hydrocephalus (Friedman, 2014; Expert Panel on Neurological Imaging et al. 2022; Thurtell, 2019; Costello & Scott, 2019; Kennedy 2018). MR Venogram allows identification of venous sinus stenosis and thrombosis for treatment planning in these scenarios (Expert Panel on Neurologic Imaging et al., 2023; Thurtell, 2019; Costello & Scott, 2019).
- Alternatively, CT Head allows exclusion of secondary causes such as hydrocephalus, mass, or edema, particularly in urgent scenarios (Friedman, 2014; Expert Panel on Neurologic Imaging et al., 2023; Costello & Scott, 2019; Expert Panel on Neurologic Imaging et al., 2018). CT Venogram allows direct vessel visualization to exclude venous outflow obstruction in these cases (Friedman, 2014; Expert Panel on Neurologic Imaging et al., 2023; Costello & Scott, 2019).
- In addition, orbital symptoms may be evaluated with either CT Orbits or MRI Orbits, with CT providing superior bony anatomy evaluation and calcification detection and MRI providing superior soft tissue resolution and evaluation of the optic nerve (Friedman, 2014; Thurtell, 2019; Costello & Scott, 2019; Expert Panel on Neurologic Imaging et al., 2018).

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References (HD-17)

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1. Aylward, S. C., & Reem, R. E. (2017). Pediatric intracranial hypertension. *Pediatric Neurology*, 66, 32–43. https://doi.org/10.1016/j.pediatrneurol.2016.08.010
2. Azzam, A. Y., Mortezaei, A., Morsy, M. M., Abdalla, M. A., El-Rashidy, A. A., & Eldeeb, H. (2024). Venous sinus stenting for idiopathic intracranial hypertension: An updated meta-analysis. *Journal of the Neurological Sciences,* 459, 122948. https://doi.org/10.1016/j.jns.2024.122948
3. Barkatullah, A. F., Leishangthem, L., & Moss, H. E. (2021). MRI findings as markers of idiopathic intracranial hypertension. *Current Opinion in Neurology*, 34(1), 75–83. https://doi.org/10.1097/WCO.0000000000000885
4. Costello, F., & Scott, J. N. (2019). Imaging in neuro-ophthalmology. *CONTINUUM: Lifelong Learning in Neurology*, 25(5), 1438–1490. https://doi.org/10.1212/CON.0000000000000783
5. Expert Panel on Neurologic Imaging:, Kennedy, T. A., Corey, A. S., Policeni, B., Agarwal, V., Burns, J., Harvey, H. B., Hoang, J., Hunt, C. H., Juliano, A. F., Mack, W., Moonis, G., Murad, G. J. A., Pannell, J. S., Parsons, M. S., Powers, W. J., Schroeder, J. W., Setzen, G., Whitehead, M. T., & Bykowski, J. (2018). ACR Appropriateness Criteria® Orbits Vision and Visual Loss. Journal of the American College of Radiology : JACR, 15(5S), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
6. Expert Panel on Neurological Imaging, Utukuri, P. S., Shih, R. Y., Ajam, A. A., Callahan, K. E., Chen, D., Dunkle, J. W., Hunt, C. H., Ivanidze, J., Ledbetter, L. N., Lee, R. K., Malu, O., Pannell, J. S., Pollock, J. M., Potrebic, S. X., Setzen, M., Shih, R. D., Soares, B. P., Staudt, M. D., Wang, L. L., … Burns, J. (2023). ACR Appropriateness Criteria® Headache: 2022 Update. Journal of the American College of Radiology : JACR, 20(5S), S70–S93. https://doi.org/10.1016/j.jacr.2023.02.018
7. Friedman, D. I. (2014). Papilledema and idiopathic intracranial hypertension. *CONTINUUM: Lifelong Learning in Neurology*, 20, 857–876. https://doi.org/10.1212/01.CON.0000453314.75261.66
8. Friedman, D. I., & Jacobson, D. M. (2002). Diagnostic criteria for idiopathic intracranial hypertension. *Neurology*, 59(10), 1492–1495. https://doi.org/10.1212/01.WNL.0000029570.69134.1B
9. Ong, F., Phillips, T., Selkirk, G., & McAuliffe, W. (2023). Intracranial venous stenting for idiopathic intracranial hypertension. *Journal of Medical Imaging and Radiation Oncology*, 67(5), 526–530. https://doi.org/10.1111/1754-9485.13505
10. Thurtell, M. J. (2019). Idiopathic intracranial hypertension. *CONTINUUM: Lifelong Learning in Neurology*, 25(5), 1289–1309. https://doi.org/10.1212/CON.0000000000000770
11. Wall, M. (2017). Update on idiopathic intracranial hypertension. *Neurologic Clinics*, 35(1), 45–57. https://doi.org/10.1016/j.ncl.2016.08.004

Paresthesias and/ or Weakness (HD-18)

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Sensory/Weakness Complaints (HD-18.1)

HD.PS.0018.1.A
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Criteria

Advanced imaging for complaints of sensory loss and/or paresthesias (see *Background and Supporting Information)* and/or weakness that are unaccompanied by other symptoms and not preceded by trauma must have the following: a thorough clinical history and a detailed neurological exam (including the symptomatic area).

Imaging for sensory and weakness complaints is considered medically necessary with the following findings:

Indications	Medically Necessary Imaging
ANY of the following: • Hyperreflexia • Babinski/Hoffman sign • Increased tone in affected limb • Bladder and/or bowel dysfunction • Motor symptoms in ANY of the following patterns: ◦ Two limbs on same side of body ◦ Face and limb involvement ◦ Bilateral lower limb weakness • Sensory symptoms in ANY of the following patterns: ◦ Two limbs on same side of body ◦ Face and limb involvement ◦ Lhermitte's sign	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **AND/OR** • MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

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Findings Specific to the Spinal Cord	Medically Necessary Imaging
ANY of the following: • Decreased pinprick sensation on one side of the body with weakness and decreased proprioception on the other side • Sensory level (also called spinal cord level) on the trunk with sensory loss in both legs • Lhermitte's sign • Bilateral lower limb weakness • Tight band around the trunk or torso • Pure sensory symptoms with proximal and distal involvement and a symmetric pattern • Decreased or absent reflexes AND noted concern for spinal cord shock or acute spinal cord injury	• MRI Cervical Spine without contrast (CPT® 72141) **OR** • MRI Cervical Spine without and with contrast (CPT® 72156) **AND/OR** • MRI Thoracic Spine without contrast (CPT® 72146) **OR** • MRI Thoracic Spine without and with contrast (CPT® 72157)

Findings Specific to the Terminal End of the Spinal Cord	Medically Necessary Imaging
Concern for conus medullaris syndrome. • Symptoms may include, but are not limited to: ◦ Saddle anesthesia ◦ Urinary retention ◦ Bowel incontinence ◦ Lower limb paresthesias ◦ Unilateral or bilateral lower limb weakness	• MRI Lumbar Spine without contrast (CPT® 72148) **OR** • MRI Lumbar Spine without and with contrast (CPT® 72158)

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- MRI Lumbar Spine is typically considered not medically necessary to visualize the spinal cord except in the clinical scenarios noted above. MRI Cervical Spine and MRI Thoracic Spine will image the entire spinal cord.
- Findings NOT consistent with central nervous system localization and NOT supporting brain or spinal cord imaging include:
  - Sensory loss that involves the hands and feet and not the trunk
  - Limb pain
- For symptoms after trauma, refer to **Head Trauma (HD-13.1)** and/or the appropriate level in the Spine Imaging Guidelines
- For generalized weakness, polyneuropathy, and/or other patterns of sensory and/or motor symptoms not referenced above, refer to the following guidelines:
  - Myopathy or myositis, see **Muscle Diseases (PN-8.5)** and **Gaucher Disease (Storage Disorders) (PN-8.6)**
  - Motor Neuron Disease or Amyotrophic Lateral Sclerosis (ALS), see **Motor Neuron Disease/Amyotrophic Lateral Sclerosis (ALS) (PN-8.1)**
  - Neuromuscular Junction Disorders, see **Neuromuscular Junction Disorders (PN-8.4)**
  - Multifocal Motor Neuropathy (MMN) and Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), see **Polyneuropathy (PN-3.1)**
  - Polyneuropathy, see **Polyneuropathy (PN-3.1)**
  - Neuropathy with concern for malignancy, see **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines
  - Proximal asymmetric and concern for plexopathy, see **Brachial Plexus (PN-4.1)** and/or **Lumbar and Lumbosacral Plexus (PN-5.1)**
  - Sensory and/or motor symptoms localized to a single nerve, see **Focal Neuropathy (PN-2.1)**
  - Thoracic Outlet Syndrome, see **Thoracic Outlet Syndrome (CH-31.1)** in the Chest Imaging Guidelines
  - Radiculopathy, see appropriate level in the Spine Imaging Guidelines
  - Cauda Equina Syndrome, see **Red Flag Indications (SP-1.2)** in the Spine Imaging Guidelines

Background and Supporting Information

- Paresthesia refers to an abnormal sensation that is associated with nervous system dysfunction and may be described as a tingling, pricking, pins and needles, or a burning sensation. The priority is to determine whether the etiology is due to pathology of the peripheral nervous system (PNS) or central nervous system (CNS).
- A thorough clinical history, including symptom location and time course, can be helpful to differentiate PNS pathologies from CNS. For example, paresthesia affecting one side of the face and/or body (i.e., hemisensory deficit) points strongly towards

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central nervous system dysfunction. Therefore, brain and/or spinal cord imaging may be supported based on the location of symptoms. Typically, lumbar spine imaging is not supported unless there is sphincter involvement, saddle anesthesia, and/or cauda equina syndrome is suspected. In contrast, an insidious course of distal, symmetric limb paresthesia is more commonly associated with peripheral nerve abnormalities. In such cases, NCS/EMG testing results should be completed prior to advanced imaging. (See *Peripheral Nerve and Neuromuscular Disorders Imaging Guidelines)*.

- Upper motor neuron signs (e.g., increased tone, hyperreflexia, presence of Babinski or Hoffman signs) may support a need for central nervous system imaging.
- Lower motor neuron signs (e.g., decreased tone, hypo- or areflexia, muscle atrophy) may support evaluation for peripheral nervous system diseases. Nerve conduction and needle EMG testing should be completed prior to advanced imaging.
- It is important to note that both peripheral and central nervous system disease can co-exist. As a result, if both upper and lower motor neuron signs are observed simultaneously, advanced imaging may be supported regardless of NCS/EMG testing results, (see **Polyneuropathy (PN-3.1)** in the Peripheral Nerve and Neuromuscular Disorders (PNND) Imaging Guidelines).
- Babinski sign - presence of an upgoing big toe with stimulation of the lateral plantar region of the foot.
- Hoffman sign - involuntary flexion of the fingers, particularly the thumb and index fingers, triggered by flicking the distal segment of the middle finger.
- Spinal cord shock/acute spinal cord injury - occurs after hyperacute or acute injury to the cord and presents with flaccid areflexia below the level of injury. May be associated with hypotension and/or bradycardia if loss of sympathetic tone occurs. Signs may last from days to weeks before upper motor neuron findings develop.
- Conus Medullaris Syndrome - compressive damage to the spinal cord from T12-L2. Symptoms suggestive of conus medullaris syndrome include saddle anesthesia, urinary retention, bowel incontinence, and/or lower extremity motor or sensory changes.

Evidence Discussion (HD-18)

- The imaging modality of choice for the evaluation of signs or symptoms localizing to the spinal cord is with MRI (London, 2020; Hardy, 2021; Larson & Wilbur, 2020; Wattjes et al., 2021; Expert Panel on Neurological Imaging et al., 2021). MRI allows visualization of the soft tissues and structures that comprise the neural axis (London, 2020; Wattjes et al., 2021; Expert Panel on Neurological Imaging et al., 2021). Imaging of the cervical and thoracic segments are sufficient to view the entire spinal cord (Hardy 2021; Wattjes et al., 2021).
- MRI of the lumbar spine is reserved for the evaluation of conus and the cauda equina (Hardy, 2021).

- For evaluation of isolated distal symmetric polyneuropathy, MRI of the brain and/or spine rarely change management in these individuals despite being frequently performed. MRI has little role in these scenarios as it evaluates the central nervous system (Callaghan et al., 2015).

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References (HD-18)

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1. Bykowski, J., Aulino, J. M., Policeni, B., Agarwal, M., Corey, A. S., Burns, J., Crowley, R. W., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Rosenow, J. M., Shah, L. M., Taheri, M. R., & Zander, D. (2017). ACR Appropriateness Criteria® plexopathy. *Journal of the American College of Radiology*, 14(5S), S225–S233. https://doi.org/10.1016/j.jacr.2017.02.002
2. Callaghan, B. C., Price, R. S., & Feldman, E. L. (2015). Distal symmetric polyneuropathy. *JAMA*, 314(20), 2172–2181. https://doi.org/10.1001/jama.2015.13611
3. Campbell, W. W. (2013). DeJong's the neurologic examination (7th ed.). Lippincott Williams & Wilkins.
4. Expert Panel on Neurological Imaging, Peckham, M., Hutchins, T. A., Amrhein, T. J., Eldaya, R. W., Grayev, A., Griffith, B., Hassankhani, A., Mazur, M., Ormsby, J., Parvez, O., Reitman, C., Spina, N., Toledano, M., Venkataraman, G., Yahyavi-Firouz-Abadi, N., & Shih, R. Y. (2026). ACR Appropriateness Criteria® Myelopathy: 2026 Update. *Journal of the American College of Radiology* : JACR, S1546-1440(26)00293-0. Advance online publication. https://doi.org/10.1016/j.jacr.2026.06.003
5. Filippakis, A., Jara, J., Ventura, N., Scala, S., Scopa, C., Ruthazer, R., Karakis, I., Srinivasan, J., Russell, J. A., & Ho, D. T. (2018). A prospective study of benign fasciculation syndrome and anxiety. *Muscle & Nerve*, 58(6), 852–854. https://doi.org/10.1002/mus.26284
6. Freedman, M., & Levin, M. C. (2025). Numbness. In Merck Manual Professional Version. Merck & Co., Inc. https://www.merckmanuals.com
7. Hardy, T. A. (2021). Spinal cord anatomy and localization. *CONTINUUM: Lifelong Learning in Neurology*, 27(1), 12–29. https://doi.org/10.1212/CON.0000000000000899
8. Hughes, R. A. C. (2010). Investigation of peripheral neuropathy. *BMJ*, 341, c6100. https://doi.org/10.1136/bmj.c6100
9. Larson, S. T., & Wilbur, J. (2020). Muscle weakness in adults: Evaluation and differential diagnosis. *American Family Physician*, 101(2), 95–108.
10. London, Z. N. (2020). A structured approach to the diagnosis of peripheral nervous system disorders. *CONTINUUM: Lifelong Learning in Neurology*, 26(5), 1130–1160. https://doi.org/10.1212/CON.0000000000000922
11. National Institute of Neurological Disorders and Stroke. (n.d.). Paresthesia information page. https://www.ninds.nih.gov
12. Wattjes, M. P., Ciccarelli, O., Reich, D. S., Banwell, B., de Stefano, N., Enzinger, C., Filippi, M., Frederiksen, J. L., Gasperini, C., Hoggard, N., & MAGNIMS-CMSC-NAIMS Consortium. (2021). 2021 MAGNIMS-CMSC-NAIMS consensus recommendations on the use of MRI in patients with multiple sclerosis. *The Lancet Neurology*, 20(8), 653–670. https://doi.org/10.1016/S1474-4422(21)00095-8

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Pituitary, Sella, Hypothalamus (HD-19)

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Pituitary (HD-19.1)

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Criteria

- Endocrine laboratory studies should be performed prior to considering advanced imaging, except in the cases of stable, non-functioning microadenomas or macroadenomas, cysts, and/or for incidentally found lesions.
- MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) with a specific pituitary protocol that includes fine cuts through the sella is considered medically necessary as the primarily performed pituitary imaging:
  - MRI Orbit/Face/Neck without and with contrast (CPT® 70543) or CT Head without and with contrast (CPT® 70470) are considered medically necessary alternatives
  - CT Head without contrast (CPT® 70450) or without and with contrast (CPT® 70470) **AND/OR** CT Maxillofacial without contrast (CPT® 70486) is considered medically necessary in addition to MRI to visualize perisellar bony structures in the pre-operative evaluation of certain sellar tumors and for pre-operative planning for transphenoidal approaches
    - See **General Guidelines – Anatomic Issues (HD-1.1)** as CT Temporal bone (CPT® 70480) is considered medically necessary instead of CT Maxillofacial per surgeon's preference and contrast level
  - CTA Head (CPT® 70496) or MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) is considered medically necessary for surgical planning
  - MRI Brain without and with contrast (CPT® 70553) covers both brain and dedicated pituitary if performed at the same time; no additional CPT® codes are considered medically necessary
- Medically necessary repeat imaging for incidentally found lesions on other studies:
  - MRI Brain without and with contrast (CPT® 70553) or MRI Orbit/Face/Neck without and with contrast (CPT® 70543) follow-up dedicated pituitary study obtained if a pituitary abnormality is reported incidentally on a MRI Brain or CT Head performed for other reasons (MRI Brain without and with contrast [CPT® 70553] covers both brain and dedicated pituitary if performed at the same time; no additional CPT® codes are needed); further evaluation and subsequent imaging dependent on specific imaging and biochemical laboratory evaluation findings.
- Repeat imaging in the setting of worsening clinical status or new neurologic symptoms
- See in the Pelvic Imaging Guidelines for initial lab and imaging work up to exclude other causes. See Female Hypogonadism or Prolactinoma or other relevant sections in the grid if suspicion for pituitary tumor/disease or **Craniopharyngioma and Other**

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Hypothalamic/Pituitary Region Tumors (HD-19.4) for suspicion of hypothalamic causes.

Pituitary Imaging

Indication	Medically Necessary Initial Imaging	Medically Necessary Repeat Imaging
Microadenoma: Nonfunctioning, unexplained pituitary asymmetries, or incidentally found small tumors (less than 10mm)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) at 12 months and then (if stable in size), every 1-2 years for 3 years, and less frequently thereafter based on clinical status
Macroadenoma (10mm or greater): Nonfunctioning and/or not surgically removed including those with a post-operative remnant	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) every 6 months for the first year and then (if stable in size), every year for 3 years, and less frequently thereafter based on clinical status (longer if craniopharyngioma)
Acromegaly* (Elevated IGF-1 confirmed by lack of suppression of growth hormone on glucose suppression testing)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) ◦ At least 12 weeks after surgery to evaluate for residual tumor ◦ If treated with Pegvisomant, 6 to 12 months after treatment initiated, then annually if stable ◦ Long-term follow-up imaging based on clinical and biochemical status at the request of a specialist or any provider in consultation with a specialist

Indication	Medically Necessary Initial Imaging	Medically Necessary Repeat Imaging
Cushing's Disease** (Pituitary ACTH excess leading to hypercortisolism)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) ◦ At least 12 weeks after surgery as new baseline ◦ Annually after bilateral adrenalectomy for Cushing's disease or ectopic ACTH production ◦ Long-term follow-up imaging based on clinical and biochemical status at the request of a specialist or any provider in consultation with a specialist
Rathke's cleft cyst/ Simple cyst	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) in one year; if stable and without mass effect or invasion into surrounding structures, no further imaging is required.

Indication	Medically Necessary Imaging
Prolactinomas* **	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) with: ◦ Diagnosis: ▪ Unexplained prolactin level above the normal range ◦ On Dopamine Agonist (DA) therapy with good response: ▪ Macroadenomas 3 months after start of DA therapy ▪ Microadenomas 1 year after start of DA therapy ▪ To decide on stoppage of therapy after ~2 years if in “remission” (normal PRL and no visible tumor on MRI) ◦ On Dopamine Agonist therapy with suboptimal response: ▪ PRL levels rise ▪ New symptoms develop (galactorrhea, vision changes, headaches, pituitary deficiency) ▪ If on high dose maximal DA and no plans for surgery/radiation therapy use guideline for microadenoma or macroadenoma ◦ After Dopamine Agonist therapy: ▪ Rise in PRL level ▪ For DA stoppage at menopause, use guideline for microadenoma or macroadenoma ◦ Not on therapy – refer to recommendations for repeat imaging for microadenoma or macroadenoma ◦ Galactorrhea/nipple discharge with normal prolactin and thyroid function levels: See **Nipple Discharge/ Galactorrhea (BR-6.1)** in the Breast Imaging Guidelines
Medication-induced Prolactinemia**	• To differentiate between medication-induced hyperprolactinemia and hyperprolactinemia due to a pituitary or hypothalamic mass if the medication cannot be discontinued or hyperprolactinemia persists after medication discontinuation

Indication	Medically Necessary Imaging
TSH, FSH, or LH producing adenomas (inappropriate pituitary hypersecretion of TSH, FSH or LH)***	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) when hormone levels are inappropriately elevated and there is a concern for a pituitary lesion. • Refer to appropriate post-operative, or Microadenoma/ Macroadenoma guidelines based on the size of the lesion and initial management. ◦ Long-term follow-up imaging based on clinical and biochemical status at the request of a specialist or any provider in consultation with a specialist
Male Hypogonadism****	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) if **ONE** of the following: ◦ Severe secondary hypogonadism (as indicated by morning serum testosterone level <150 ng/dl and low or normal LH and FSH levels) (See *Background and Supporting Information*) ◦ Below normal testosterone level (serum total testosterone, free testosterone, and/or bioavailable morning testosterone) AND low or normal LH and FSH levels, in an individual with either: ▪ Panhypopituitarism ▪ Hyperprolactinemia ▪ Signs of tumor mass effect (headache, visual impairment, or visual field deficit) ▪ Elevated sex hormone binding globulin (SHBG)
Female Hypogonadism (Secondary Amenorrhea may be a feature)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) for normal or low FSH with low estradiol (LH may be normal or low also)

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Indication	Medically Necessary Imaging
Growth Hormone Deficiency (Adult onset)	MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) for the following: • Low Growth Hormone (GH) **OR** • Low IGF-1 **AND** • One abnormal provocative test (likely will be Glucagon Stimulation test as GNRH is unavailable and Insulin Tolerance test poses risks) • If 3 or more pituitary hormones are deficient (including GH), then provocative test is not needed.
Secondary (Central) Adrenal Insufficiency	MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) for the following: • ACTH is low or normal at 10 or lower **AND** • Low baseline cortisol level <3 µg/dL **OR** • abnormal ACTH stimulation test with suboptimal cortisol stimulation where cortisol does not reach above 18 µg/dL
Central Hypothyroidism	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) for the following: ◦ Low free T4 with normal, low, or mildly elevated TSH
Hypopituitarism **(deficiency of one or more pituitary hormones)**	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551)

Indication	Medically Necessary Initial Imaging	Medically Necessary Repeat Imaging for Non-Operative Care
Diabetes Insipidus (DI) - ADH deficiency	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) if: ◦ Laboratory testing consistent with DI (serum osmolality should be high and urine osmolality should be low) and etiology uncertain	NA
Syndrome of Inappropriate ADH (SIADH)	• MRI Brain without and with contrast (CPT® 70553) or MRI Brain without contrast (CPT® 70551) if: ◦ Etiology remains uncertain or is thought to be in the nervous system ◦ Urine osmolality should be high and serum osmolality low	NA
Other Pituitary Region Tumors	• Evaluation may require CT in addition to MRI to evaluate for hyperostosis.	

Background and Supporting Information

- ***Acromegaly:** A serum level of growth hormone greater than 1ng/mL when measured two hours following an oral glucose load confirms acromegaly.
- ****Cushing's Disease:** It is important to differentiate Cushing's syndrome (hypercortisolism from any source) from Cushing's disease which is ACTH hypersecretion from the pituitary gland. Hypercortisolism is quantified by 24hour urine cortisol collection, low dose dexamethasone suppression test and/or late-night salivary cortisol measurement. ACTH is elevated or inappropriately normal in Cushing's disease and ectopic sources of ACTH production but suppressed in other causes of hypercortisolism. A high dose dexamethasone suppression test can help determine if the elevated ACTH is from a pituitary or ectopic source. Petrosal sinus sampling may be required for tumor localization pre-operatively in the setting of a normal pituitary MRI or a small adenoma. These tumors may be managed with surgery, medical therapy, radiation, and/or bilateral adrenalectomy.
- ***Prolactinoma:** To establish the diagnosis of hyperprolactinemia, a single measurement of serum prolactin is recommended; a level above the upper limit of normal confirms the diagnosis as long as the serum sample was obtained without excessive venipuncture stress. Pregnancy and primary hypothyroidism should be

excluded as physiologic causes of prolactin elevation and medications that may be contributing to prolactin elevation should be considered. Dopamine agonist therapy is typically stopped during pregnancy, monitoring of prolactin levels ceases. Routine imaging surveillance during pregnancy is not recommended due to risk to fetus. Repeat imaging with MRI without gadolinium can be performed however for new or worsening symptoms, such as headaches or visual symptoms.

- **** **Medication-induced prolactin elevation:** Medication induced hyperprolactinemia is seen most commonly with antipsychotics/neuroleptics and antidepressants but may also be seen with some anti-emetics and antihypertensive agents. In individuals on prolactin elevating drugs, a prolactin level should be repeated after withdrawal of medications for 72 h, however, this approach may not be safe if this treatment is offered for psychiatric indications. If stopping the drug is not feasible, pituitary MRI is advised to rule out a sellar/parasellar tumor.
- *****TSH, FSH, or LH producing adenomas:** These are the least common of all hormonally active pituitary tumors. Individuals with TSH secreting adenomas have inappropriate TSH elevation in the setting of hyperthyroidism (elevated thyroid hormone levels). Almost all gonadotroph adenomas are clinically non-functioning. The infrequent presentation of a functioning gonadotroph adenoma should be differentiated clinically from appropriate FSH and LH elevation seen in low estrogen states (including menopause) as well as primary hypogonadism (testicular failure). Functioning TSH, FSH or LH pituitary adenomas may be managed with surgical, radiation and/or medical therapies.
- ******Male Hypogonadism:** Alterations in sex hormone-binding globulin (SHBG) can impact testosterone levels. Free or bioavailable testosterone concentrations should be measured when total testosterone concentrations are close to the lower limit of the normal range and when altered SHBG levels are suspected (e.g. moderate obesity, nephrotic syndrome, hypo- and hyperthyroidism, use of glucocorticoids, progestins, estrogens, and androgenic steroids, anticonvulsants, acromegaly, diabetes mellitus, aging, HIV disease, liver cirrhosis, hepatitis). LH and FSH should be obtained to evaluate for secondary (central) hypogonadism once low testosterone level is confirmed. Morning testosterone level is drawn anytime before 10 am for a typical sleep-wake cycle.
- Central hypothyroidism is an anatomic or functional disorder of the pituitary gland or the hypothalamus, resulting in altered TSH secretion. Diagnosis is usually made biochemically with low circulating free T4 (FT4) concentrations associated with low/normal serum TSH levels.

Post-Operative and Repeat Imaging Indications (HD-19.2)

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Criteria

- For imaging in the immediate post-operative period or for acute surgical complications
  - See **Primary Central Nervous System Tumors (ONC-2.1)** in the Oncology Imaging Guidelines.
- A routine post-operative MRI is generally done at 3 months and/or at the discretion of, or in consultation with an Endocrinologist, Neurologist, Neurosurgeon, ENT, Ophthalmologist, Neuro-Ophthalmologist or Radiation Oncologist.
- Frequency of follow-up imaging depends on the post-operative size and/or functional status of the pituitary adenoma. Refer to the grid sections for Microadenoma/ Macroadenoma as well as those for disorders of pituitary hormone excess.
- Individuals with hyper-functioning tumors such as acromegaly, Cushing's disease, and excess TSH secretion may be treated with a combination of surgery, medical therapy, and radiation. Long-term monitoring of clinical status and repeat imaging at the discretion of, or in consultation with an Endocrinologist, Neurologist, Neurosurgeon, ENT, Ophthalmologist, Neuro-Ophthalmologist or Radiation Oncologist.

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Empty Sella Turcica (HD-19.3)

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Criteria

- Enlarged/Empty Sella Turcica: An enlarged sella turcica without evident tumor is an incidental finding on MRI Brain or CT Head from a defect in the dural diaphragm of the sella (especially if there is elevated intracranial pressure from another cause), pituitary surgery, or as a result of a pituitary tumor which has expanded the sella and then infarcted (pituitary apoplexy).
- MRI Brain without and with contrast (pituitary protocol) (CPT® 70553) with thin sections of pituitary or MRI Brain without contrast (CPT® 70551) is considered medically necessary. CT Head without and with contrast (CPT® 70470) – If MRI is contraindicated.
  - Primary Empty Sella:
    - Incidentally found on other studies, asymptomatic and no related abnormalities: follow-up at 2 years. No further imaging unless clinical symptoms develop (neuro-/ophthalmological symptoms, intracranial hypertension, or endocrine/hormonal abnormalities).
    - Following medical or surgical treatment of related endocrine, neurological, or ophthalmological problems: follow-up imaging every 6 months in the year after treatment and/or at the request of a specialist or any provider in consultation with a specialist (see **Papilledema/Pseudotumor Cerebri (HD-17.1)** for additional imaging recommendations)
  - Secondary Empty Sella
    - Imaging according to the cause or if clinical disease progression (such as adenomas, infiltrative or malignant disorders, hormonal abnormalities, neuro-/ophthalmological symptoms)

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Craniopharyngioma and Other Hypothalamic/Pituitary Region Tumors (HD-19.4)

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- See **Craniopharyngioma and Other Hypothalamic/Pituitary Region Tumors (PEDONC-4.10)**

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Evidence Discussion (HD-19)

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- MRI imaging of the Sella region using high-resolution pituitary protocols is the preferred diagnostic imaging modality for evaluation of the pituitary and sellar regions and is considered the gold standard for imaging the pituitary gland when there is suspicion of hypothalamic pituitary disease (Burns et al., 2019).
- Both the anatomy and pathology of the pituitary gland and surrounding areas including optic chiasm, infundibulum, and vascular structures, as well as an empty sella, are reliably depicted on MRI (Burns et al., 2019).
- MRI is the most sensitive imaging study for evaluating pituitary disease (Burns et.al., 2019).
- CT of the Sella can be used to detect bone destructive lesions of the skull base, such as craniopharyngiomas, menigiomas, or larger pituitary macroadenomas, but CT is insensitive when compared to MRI for pituitary pathology (Burns et.al., 2019).
- MRI utilizes a magnetic field and radio waves with computer processing to produce detailed images whereas CT uses ionizing radiation. Radiation dosages vary based on many factors and can be harmful to tissues. Thus, from radiation safety perspective MRI should be utilized when appropriate and supported by existing literature (ACR, 2022).

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References (HD-19)

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1. Aghi, M. K., Chen, C. C., Fleseriu, M., Byrne, R. W., Mason, R. B., & Zada, G. (2016). Congress of Neurological Surgeons systematic review and evidence-based guidelines on the management of patients with nonfunctioning pituitary adenomas. *Neurosurgery*, 79(4), 521–523. https://doi.org/10.1227/NEU.0000000000001386
2. American Association of Clinical Endocrinologists. (2002). Medical guidelines for clinical practice for the evaluation and treatment of hypogonadism in adult male patients—2002 update. *Endocrine Practice*, 8(6), 439–456. https://doi.org/10.4158/EP.8.6.439
3. American College of Radiology. (2022). ACR practice parameter for performing and interpreting magnetic resonance imaging (MRI). https://gravitas.acr.org/PPTS/
4. Bhasin, S., Brito, J. P., Cunningham, G. R., Hayes, F. J., Hodis, H. N., Matsumoto, A. M., Snyder, P. J., & Yialamas, M. A. (2018). Testosterone therapy in men with hypogonadism: An Endocrine Society clinical practice guideline. *The Journal of Clinical Endocrinology & Metabolism*, 103(5), 1715–1744. https://doi.org/10.1210/jc.2018-00229
5. Burns, J., Policeni, B., Agarwal, M., Corey, A. S., Crowley, R. W., Dubey, P., Friedman, E. R., Gule-Monroe, M. K., Hunt, C. H., Rosenow, J. M., Shah, L. M., & Taheri, M. R. (2019). ACR Appropriateness Criteria® neuroendocrine imaging. *Journal of the American College of Radiology*, 16(5S), S161–S173. https://doi.org/10.1016/j.jacr.2019.02.017
6. Cardinale, F., Pero, G., Quilici, L., Klostermann, F., Scavarda, D., & Nobili, L. (2015). Cerebral angiography for multimodal surgical planning in epilepsy surgery. *World Neurosurgery*, 84(2), 358–367. https://doi.org/10.1016/j.wneu.2015.03.028
7. Chiloiro, S., Giampietro, A., Bianchi, A., Tartaglione, L., Capobianco, A., Pontecorvi, A., & De Marinis, L. (2017). Primary empty sella: A comprehensive review. *European Journal of Endocrinology*, 177(6), R275–R285. https://doi.org/10.1530/EJE-17-0505
8. Chen, C. C., Carter, B. S., Wang, R., Couldwell, W. T., & Aghi, M. K. (2016). Congress of Neurological Surgeons guideline on preoperative imaging assessment of patients with suspected nonfunctioning pituitary adenomas. *Neurosurgery*, 79(4), E524–E526. https://doi.org/10.1227/NEU.0000000000001391
9. De Marinis, L., Bonadonna, S., Bianchi, A., Maira, G., & Giustina, A. (2005). Primary empty sella. *The Journal of Clinical Endocrinology & Metabolism*, 90(9), 5471–5477. https://doi.org/10.1210/jc.2005-0288
10. Esposito, D., Olsson, D. S., Ragnarsson, O., Buchfelder, M., Skoglund, T., & Johannsson, G. (2019). Non-functioning pituitary adenomas: Indications for surgery and post-surgical management. *Pituitary*, 22(4), 422–434. https://doi.org/10.1007/s11102-019-00960
11. Fleseriu, M., Hashim, I. A., Karavitaki, N., Melmed, S., Murad, M. H., Salvatori, R., & Samuels, M. H. (2016). Hormonal replacement in hypopituitarism in adults. *The Journal of Clinical Endocrinology & Metabolism*, 101(11), 3888–3921. https://doi.org/10.1210/jc.2016-2118
12. Freda, P. U., Beckers, A. M., Katznelson, L., Molitch, M. E., Montori, V. M., Post, K. D., & Vance, M. L. (2011). Pituitary incidentaloma: An Endocrine Society clinical practice guideline. *The Journal of Clinical Endocrinology & Metabolism,* 96(4), 894–904. https://doi.org/10.1210/jc.2010-1048
13. Guo, Z., Liu, C., Hou, H., Wang, Q., & Zhang, J. (2018). Preoperative CT evaluation of anatomical abnormalities in the endonasal transsphenoidal approach. *Medical Science Monitor*, 24, 1268–1275. https://doi.org/10.12659/MSM.904402
14. Hoang, J. K., Hoffman, A. R., González, R. G., Lev, M. H., Mukherji, S. K., & Burns, J. (2018). Management of incidental pituitary findings on CT, MRI, and FDG-PET. *Journal of the American College of Radiology*, 15(7), 966–972. https://doi.org/10.1016/j.jacr.2018.03.037
15. Jane, J. A., Jr. (2019). Surgical treatment of pituitary adenomas. In K. R. Feingold, B. Anawalt, A. Boyce, et#al. (Eds.), Endotext. MDText.com, Inc.
16. Katznelson, L., Laws, E. R., Melmed, S., Molitch, M. E., Murad, M. H., Utz, A., & Vance, M. L. (2014). Acromegaly: An Endocrine Society clinical practice guideline. *The Journal of Clinical Endocrinology & Metabolism*, 99(11), 3933–3951. https://doi.org/10.1210/jc.2014-2700

17. Melmed, S., Casanueva, F. F., Hoffman, A. R., Kleinberg, D. L., Montori, V. M., Schlechte, J. A., & Wass, J. A. H. (2011). Diagnosis and treatment of hyperprolactinemia. *The Journal of Clinical Endocrinology & Metabolism*, 96(2), 273–288. https://doi.org/10.1210/jc.2010-1692
18. Melmed, S., Polonsky, K. S., Larsen, P. R., & Kronenberg, H. M. (Eds.). (2019). Normal and aberrant growth in children. In Williams textbook of endocrinology (14th ed., pp. 937–1022). Elsevier.
19. Melmed, S., Polonsky, K. S., Larsen, P. R., & Kronenberg, H. M. (Eds.). (2019). Physiology and disorders of puberty. In Williams textbook of endocrinology (14th ed., pp. 1023–1164). Elsevier.
20. Melmed, S., Polonsky, K. S., Larsen, P. R., & Kronenberg, H. M. (Eds.). (2019). Posterior pituitary. In Williams textbook of endocrinology (14th ed., pp. 303–330). Elsevier.
21. Nieman, L. K., Biller, B. M. K., Findling, J. W., Newell-Price, J., Savage, M. O., Stewart, P. M., & Montori, V. M. (2015). Treatment of Cushing's syndrome. *The Journal of Clinical Endocrinology & Metabolism*, 100(8), 2807–2831. https://doi.org/10.1210/jc.2015-1818
22. Persani, L. (2012). Central hypothyroidism. *The Journal of Clinical Endocrinology & Metabolism*, 97(9), 3068–3078. https://doi.org/10.1210/jc.2012-1616
23. Prevedello, D., Otto, B. A., Carrau, R. L., de Lara, D., & Ditzel Filho, L. F. S. (2012). Application of image guidance in pituitary surgery. *Surgical Neurology International*, 3(Suppl#3), S73. https://doi.org/10.4103/2152-7806.95418
24. Samperi, I., Lithgow, K., & Karavitaki, N. (2019). Hyperprolactinaemia. *Journal of Clinical Medicine*, 8(12), 2203. https://doi.org/10.3390/jcm8122203
25. Sharma, S. T. (2017). An individualized approach to the evaluation of Cushing syndrome. *Endocrine Practice*, 23(6), 726–737. https://doi.org/10.4158/EP161721.RA
26. Woodmansee, W. W., Carmichael, J., Kelly, D., & Katznelson, L. (2015). Postoperative management following pituitary surgery. *Endocrine Practice*, 21(7), 832–838. https://doi.org/10.4158/EP14541.DSCR
27. Ziu, M., Dunn, I. F., Hess, C., & Laws, E. R. (2016). Posttreatment follow-up evaluation of nonfunctioning pituitary adenomas. *Neurosurgery*, 79(4), E541–E543. https://doi.org/10.1227/NEU.0000000000001392

Scalp and Skull (HD-20)

Guideline Page

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Scalp and Skull Lesions (HD-20.1)

HD.SK.0020.1.A
v1.0.2027

Criteria

The majority of these are benign soft tissue or bony lesions easily defined by physical examination or with skull x-rays or ultrasound.

- Ultrasound is the initial imaging of scalp lesions
- X-ray is the initial imaging of skull (bony) lesions
- CT Head without or without and with contrast (CPT® 70450 or CPT® 70470) is considered medically necessary for the following scenarios:
  - Any lesion on physician examination and skull x-ray or ultrasound which is not clearly benign.
  - In cases where surgical planning is in progress, x-rays and/or ultrasound are not required.
  - When bony lesions are detected on physical examination with any of the following:
    - Signs or symptoms of Langerhan's cell histiocytosis
    - Signs or symptoms of multiple myeloma
    - History of a cancer condition with a suspicion of metastasis
    - History of Paget's disease
    - History of radiation therapy to the head region
- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary if there is concern for intracranial extension.
- See **Dental/Periodontal/Maxillofacial Imaging (HD-30.2)** for mandibular masses
- The following imaging is considered medically necessary for children and adults with Pott Puffy Tumor:
  - MRI Brain without and with contrast (CPT®70553) or CT Head without and with contrast (CPT® 70470)
  - Repeat imaging is considered medically necessary if requested by a neurologist, neurosurgeon, otolaryngologist (ENT) and/or oromaxillofacial surgeon (OMS) or any provider coordinating care with a neurologist, neurosurgeon, otolaryngologist (ENT) and/or oromaxillofacial surgeon (OMS)

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Background and Supporting Information

Pott Puffy Tumor is an abscess involving the frontal bone with adjacent osteomyelitis as the result of a frontal sinus infection that spreads contiguously through the wall of the sinus or through hematogenous spread via the veins that drain sinus mucosa.

Evidence Discussion (HD-20.1)

- The ACR Practice Parameter or the Performance of Computed Tomography (CT) of the head and of the extracranial head and neck gives a broad description of some of the pathologies that would be beneficially imaged using this modality, and points out that the reason for imaging must be for a valid medical reason and should be done with the aim for using only the minimum necessary radiation. This in some cases requires the use of additional modalities (ACR, 2021; ACR; 2020).
- The majority of skull lesions are benign, but advanced imaging characteristics may aid in defining the lesion as having a relatively high pretest probability of malignancy (prior to histological confirmation). However, clinical contextual information is necessary to help decide which individuals would benefit from advanced imaging including the individual's age and features of the individual's presenting history (Gomez et al., 2018).
- Ultrasound offers many radiographic advantages for the characterization of scalp masses, which are not visualized by CT or MRI, the primary goal being to differentiate benign vs. malignant scalp masses. Cancers of the scalp represent 2% of all skin cancers. In both squamous and basal cell carcinomas, the US shows hypoechoic solid tumors with increased vascularity, and basal cell pathology can also consist of hyperechoic spots internally (Wortsman et al., 2012).
- In folliculotropic mycosis fungoides (FMF), the most common manifestation of cutaneous T-cell lymphoma, the sonographic features include skin thickening, and hypoechoic upper dermis and hair follicles, with large surrounding hyperechoic deposits (Wortsman et al., 2012).
- Skull (bony) lesions are most often discovered incidentally either clinically or as a result of CT or MRI of the brain performed for another indication, and these skull masses can be either malignant or benign. The individual's history is essential to understand along with the imaging characteristics in order to obtain accurate diagnosis. Radiographic features, both CT- and MRI- specific can be used to differentiate between benign and malignant lesions, identifying whether lesions have well-defined borders, sclerotic margins, and a narrow transition zone.
- The presence of bony destruction is a useful observation, periosteal reaction, soft tissue component, and intracranial or extracranial extension can be identified as malignant features in addition, and patterns such as lytic vs. sclerotic, dingle vs multiple, homogeneous vs varied composition also can give helpful information for diagnosis, and various patterns are recognizable that may support the tissue type

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of origin such as fibrogenic, chondrogenic, osteogenic, vascular, etc. (Gomez et al., 2018).

- Plain radiograph can identify some of these features as a first diagnostic study, but advanced imaging may be necessary, in conjunction with x-ray, and at times CT and MRI are useful as complementary studies (Ugga et al., 2018).
- Pott puffy tumor is a rare complication of sinusitis or trauma, and early diagnosis is important since it is treatable with broad spectrum antibiotics, therefore advanced imaging is considered medically necessary with a clinical suspicion (Sharma et al., 2017).

Head Imaging Guidelines

Skull Base Osteomyelitis (SBO) (HD-20.2)

HD.SK.0020.2.A
v1.0.2027

Criteria

- Note: SBO may occur from the temporal bones or paranasal sinuses and imaging should be of the region of origin
- Any of the following imaging studies are considered medically necessary in the diagnosis and treatment of skull base osteomyelitis and/or necrotizing external otitis:
  - MRI Brain without and with contrast (with IAC views) (CPT® 70553)
  - CT Temporal bone without contrast (CPT® 70480)
  - CT Temporal bone with contrast (CPT® 70481)
  - CT Maxillofacial without contrast (CPT® 70486)
  - CT Maxillofacial with contrast (CPT® 70487)
  - CT Neck with contrast (CPT® 70491)
  - CTA/CTV Head (CPT® 70496)
  - MRA/MRV Head, contrast as requested (CPT® 70544, 70545, 70546)
  - Gallium-67 Scan (CPT® 78800 or 78801, and 78803, 78831, 78830 or 78832)
  - Bone Scan (CPT® 78830 or 78832)
    - Skull base osteomyelitis: + Gallium and + Bone scan
    - Necrotizing otitis externa: + Gallium and - Bone scan
  - Indium WBC (CPT® 78800 or 78801, and 78803, 78831, 78830 or 78832) is considered medically necessary as a substitute for or used in addition to Gallium scanning to evaluate response to therapy and especially in cases that have undergone surgical debridement.
- Treatment response: Gallium-67 Scan every 4-6 weeks till scan is negative
- Surveillance Scanning: Gallium-67 Scan at 4 weeks and 3 months post-treatment
- For CT Head imaging, see **General Guidelines - CT Head (HD-1.4)** and/or **Headache (HD-11)**
- Internal Auditory Canal: (IAC) MRI can be reported as a limited study with one code from the set (CPT® 70540, CPT® 70542, or CPT® 70543), but should not be used in conjunction with MRI Brain codes (CPT® 70551, CPT® 70552, or CPT® 70553) if IAC views are performed as part of the brain.

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Background and Supporting Information

Skull base osteomyelitis is a rare complication of otitis externa. It occurs most commonly among the immunocompromised, older individuals (greater than 65 years of age) and members with diabetes.

MRI Brain will be positive earliest in the disease process. CT scans will best define bony destruction and are positive later in the disease process.

Evidence Discussion (HD-20.2)

- CT, although involves radiation, is more readily available and provides superior information regarding bony erosion and/or demineralization in the individual with suspected osteomyelitis (Treviño et al., 2021).
- MRI can assist with early detection of bone changes in as early as 3-5 days from onset of osteomyelitis (Treviño et al., 2021). In cases of diabetic osteomyelitis MRI provides a sensitivity of 90% and a specificity of 79%. MRI provides superior soft tissue detail and intracranial involvement secondary to its superior resolution when compared to CT for evaluation of skull-base osteomyelitis (Treviño et al., 2021; Álvarez et al., 2021; Kahn et al., 2022).
- Both nuclear imaging by means of Technetium 99m (^{99m}Tc) and Gallium 67 (^{67}Ga) scan can assist in localizing infection. The Gallium scan is often used to determine the resolution of the infection and thus the end of antibiotic therapy (Álvarez et al., 2021; Kahn et al., 2022). The Technetium 99m scan can be useful for detecting the infection however often times remains positive prolonged period of time, and thus should not be used to determine resolution of infection (Kahn et al., 2022).

References (HD-20)

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1. Álvarez#Jáñez, F., Barriga#López, Q., Íñigo#Tordera, R., & Roldán#Lora, F. (2021). Diagnosis of skull base osteomyelitis. *Radiographics*, 41(1), 156–174. https://doi.org/10.1148/rg.2021200046
2. American College of Radiology. (2020). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the head. https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
4. Agarwal, M., Juliano, A. F., Hagiwara, M., Policeni, B., Corey, A. S., Burns, J., Crowley, R. W., Friedman, E. R., Gule-Monroe, M. K., Hunt, C. H., Rosenow, J. M., Taheri, M. R., & Zander, D. (2024). ACR Appropriateness Criteria® inflammatory ear disease. American College of Radiology. https://acsearch.acr.org/docs/3195157/Narrative/
5. Barnett, R. R., Piazza, M. G., & Elton, S. W. (2021). Pediatric neurosurgery in primary care: Masses of the scalp and skull in children. Pediatric Clinics of North America, 68(4), 743–757. https://doi.org/10.1016/j.pcl.2021.04.003
6. Gomez, C. K., Schiffman, S. R., & Bhatt, A. A. (2018). Radiological review of skull lesions. *Insights into Imaging*, 9(5), 857–882. https://doi.org/10.1007/s13244-018-0643-0
7. Khan, H. (2022). Necrotising otitis externa: An overview of imaging modalities. *Journal of Ayub Medical College Abbottabad*, 34(4), 858–861. https://doi.org/10.55519/JAMC-04-8899
8. Khan, M., Quadri, S. Q., Kazmi, A., Kwatra, V., Ramachandran, A., Gustin, A., & Khandakar, A. (2018). A comprehensive review of skull base osteomyelitis: Diagnostic and therapeutic challenges among various presentations. *Asian Journal of Neurosurgery*, 13(4), 959–970. https://doi.org/10.4103/ajns.ajns_90_17
9. Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Policeni, B., Agarwal, M., Corey, A. S., Burns, J., Crowley, R. W., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Hunt, C. H., Rosenow, J. M., Taheri, M. R., & Zander, D. (2017). ACR Appropriateness Criteria® sinonasal disease. *Journal of the American College of Radiology*, 14(11S), S550–S559. https://doi.org/10.1016/j.jacr.2017.08.041
10. Sharma, P., Sharma, S., Gupta, N., Kochar, P., & Kumar, Y. (2017). Pott puffy tumor. Proceedings (Baylor University Medical Center), 30(2), 179–181. https://doi.org/10.1080/08998280.2017.11929575
11. Treviño#González, J. L., Reyes#Suárez, L. L., & Hernández#de#León, J. E. (2021). Malignant otitis externa: An updated review. A*merican Journal of Otolaryngology,* 42(2), 102894. https://doi.org/10.1016/j.amjoto.2020.102894
12. Ugga, L., Cuocolo, R., Cocozza, S., Russo, D., Barbato, F., & Brunetti, A. (2018). Spectrum of lytic lesions of the skull: A pictorial essay. *Insights into Imaging*, 9(5), 845–856. https://doi.org/10.1007/s13244-018-0653-y
13. Wortsman, X., Wortsman, J., Matsuoka, L., Saavedra, T., Mardones, F., Saavedra, D., Guerrero, R., & Corredoira, Y. (2012). Sonography in pathologies of the scalp and hair. *British Journal of Radiology*, 85(1013), 647–655. https://doi.org/10.1259/bjr/22636640

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Cerebrovascular Disease (HD-21)

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Stroke/TIA (HD-21.1)

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Indications	Medically Necessary Imaging
• Acute ischemic stroke • Transient ischemic attacks (TIA) • Suspected hemorrhagic stroke • Suspected subdural hemorrhage	**Any ANY** or **ALL** of the following: • CT Head without contrast (CPT® 70450) • CTA Head (CPT® 70496) • CTA Neck (CPT® 70498) • CTA Head and Neck (CPT ® 70471) if performed during the same session • CT Perfusion (CPT® 70472 or 70473) • MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) • MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549
Repeat imaging for follow-up and resolution of stroke or hemorrhage	• As requested by a neurologist, neurosurgeon, hematologist, or physiatrist (PM&R), or any provider in consultation with a neurologist, neurosurgeon, hematologist, or physiatrist
Contraindication to MRI	• CT Head without contrast (CPT® 70450) **OR** • CT Head without and with contrast (CPT® 70470)

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Indications	Medically Necessary Imaging
Arterial Vascular Imaging supported for TIA/Stroke evaluation including dissection: • Supported concurrently with brain imaging	• MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** • CTA Head (CPT® 70496) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) OR • CTA Neck (CPT® 70498) **OR** • CTA Head and Neck (CPT® 70471) if performed during the same session
Venous vascular imaging for evaluation of venous infarcts	• MRA/MRV ([CPT® 70544, CPT® 70545, or CPT® 70546] **OR** • CTA/CTV Head (CPT® 70496) **AND/OR** • MRI Brain without contrast (CPT® 70551) • MRI Brain without and with contrast (CPT® 70553) **OR** • CT Head without contrast (CPT® 70450) Also see **Cerebral Venous Sinus Thrombosis (HD-21.8)**
Cervicocerebral Catheter Angiography for stroke evaluation	3D Rendering (CPT® 76377 or CPT® 76376)
Stroke in Pregnancy and other hypercoagulable states • See arterial and venous vascular imaging studies above for vascular imaging request • See *Background and Supporting Information*	• MRI Brain without contrast (CPT® 70551) OR • CT Head without contrast (CPT® 70450)
Amaurosis Fugax or Ocular Microembolism • May include optic nerve/retinal arterial or Hollenhorst plaques on exam	See above for TIA or New Stroke brain imaging options and vascular imaging

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Indications	Medically Necessary Imaging
Reversible Cerebral Vasoconstriction Syndrome	See also **Sudden Onset of Headache (HD-11.3)**
Neurologic signs and/or symptoms, including headaches, associated with COVID-19 infection and/or COVID-19 vaccination (Ischemia may be arterial or venous)	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) See also **General Guidelines-CT head (HD-1.4), Abnormal Blood Clotting (HD-11.9)** and **Neuro-Covid-19 (HD-14.2)**, and **Cerebral Venous Sinus Thrombosis (HD-21.8)**
Adults with HbSS (Sickle cell disease) or HbSb Thalassemia	One time MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) for screening to detect silent cerebral infarcts Follow-up or repeat testing per neurologist or hematologist or in consultation with a neurologist or hematologist See also **Sickle Cell Disease (HD-21.6)**
Secondary work-up of stroke/TIA	Transcranial Doppler Studies
Moyamoya Disease when surgery or other vascular intervention is being considered	See **Moyamoya Syndrome/Disease (HD-21.5)**
Evaluation of paradoxical venous thromboembolism in cryptogenic stroke with PFO	See **Acute deep venous thrombosis (DVT) (PVD-12.2)** and **Cryptogenic Stroke (HD-21.3)**

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Indications	Medically Necessary Imaging
Cerebral Amyloid Angiopathy (CAA)	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • CT Head without contrast (CPT® 70450) Amyloid-PET Brain (CPT® 78811 or CPT® 78814) is considered not medically necessary for stroke evaluation. See **Mild Cognitive Impairment (MCI) and Dementia - PET (HD-8.2)**
Multisystem Smooth Muscle Syndrome/ Smooth Muscle Dysfunction Syndrome	See **Multisystem Smooth Muscle Syndrome/Smooth Muscle Dysfunction Syndrome (HD-21.7)**

Background and Supporting Information

- Pregnancy is an independent risk factor for stroke. Additional risk factors are not required for assessment of a stroke/TIA with acute focal neurological deficits.
- Additional arterial and venous hypercoagulable states that impose a stroke risk include:
  - Antiphospholipid syndrome
  - Hyperhomocysteinemia
  - Factor V Leiden mutation
  - Prothrombin gene mutation
  - Protein S deficiency
  - Protein C deficiency
  - Anti-thrombin deficiency

Cryptogenic Stroke (HD-21.3)

HD.ST.0021.3.A
v1.0.2027

Criteria

- 25% of individuals with ischemic stroke have no probable cause and is considered cryptogenic after a standard workup including an echocardiogram, inpatient cardiac telemetry or 24-Holter monitoring, CT or MRI Brain and vessel imaging of the brain or neck arteries and hematologic tests.
- A stroke may also be considered cryptogenic after a standard evaluation fails to yield an etiology in an individual less than 50 years of age without risk factors with more extensive testing.
- Most cryptogenic sources are embolic in etiology from venous or arterial sources with investigations from disturbances in coagulation and sources of embolism including patent foramen ovale (PFO) and paroxysmal atrial fibrillation.
- Specialized evaluation with the following documentation:
  - MRI/CT Brain with results of stroke
  - Results of MRA/CTA Head and Neck
  - TTE or TEE
  - 24-Hr Holter monitor or Inpatient cardiac telemetry and 12-Lead ECG
- Hematologic testing to include: CBC, Platelet count, INR, PT, PTT, D-Dimer and Arterial and Venous Hypercoagulability tests
  - MRA or CTA Pelvis for the evaluation of paradoxical venous thromboembolism with PFO
    - See **Acute Limb Swelling (PVD-12)** in the Peripheral Vascular Disease (PVD) Imaging Guidelines.
  - Work-up for occult cancer, CT Chest, Abdomen, and/or Pelvis with contrast after the previously indicated tests with results are provided.
    - See **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines.

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Transient Global Amnesia (HD-21.4)

HD.ST.0021.4.A
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Criteria

- Transient Global Amnesia (TGA) is a clinical diagnosis with the differential diagnosis including, but not exclusive to: ischemic events, migraine headaches, and transient epileptic amnesia.
- Characteristics of TGA may include the following:
  - Inability to retain new information, lasting for several hours with preservation of alertness and all other cognitive functions with repetitive queries and amnesia
  - Witnessed episode
  - There must be anterograde amnesia during the attack
  - Cognitive impairment is limited to amnesia
  - No clouding of consciousness or loss of personal identity
  - No focal neurological signs/symptoms
  - No epileptic features
  - Attack must resolve within 24 hours
  - No recent head injury or active epilepsy
- Head and vessel imaging for ischemic etiology work-up should follow **Stroke/TIA (HD-21.1)**
- For suspected seizure, see **Epilepsy/Seizures (HD-9.1)**

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Moyamoya Syndrome/Disease (HD-21.5)

HD.ST.0021.5.C
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Initial imaging for Moyamoya Syndrome/Disease

- .The imaging listed below is medically necessary for initial evaluation of Moyamoya Syndrome/Disease:
  - MRI Brain without contrast (CPT® 70551) **OR**
  - MRI Brain without and with contrast (CPT® 70553) **AND/OR**
  - MRA Head (CPT® 70544, CPT® 70545, **OR** CPT® 70546) **AND/OR**
  - MRA Neck (CPT® 70547, CPT® 70548 **OR** CPT® 70549)
    - If MRA is contraindicated or not readily available, then CTA Head (CPT® 70496) **AND/OR** CTA Neck (CPT® 70498) OR CTA Head and Neck (CPT ® 70471) if performed during the same session is/are medically necessary

Repeat imaging for Moyamoya Syndrome/Disease

- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **AND/OR**
- MRA Neck (CPT® 70547, CPT® 70548 or CPT® 70549)
  - Follow-up or repeat testing per neurologist, neurosurgeon, hematologist or in consultation with a neurologist, neurosurgeon, or hematologist.
  - If MRA is contraindicated or not readily available, then CTA Head (CPT® 70496) AND/OR CTA Neck (CPT® 70498) OR CTA Head and Neck (CPT ® 70471) if performed during the same sessionis/are medically necessary
- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553)
  - Follow-up or repeat testing per neurologist, neurosurgeon, hematologist or in consultation with a neurologist, neurosurgeon, or hematologist.
- Radiopharmaceutical Localization Imaging SPECT (CPT® 78803, CPT® 78830 or CPT® 78832) with vasodilating agent acetazolamide (Diamox) challenge is supported when surgery or other vascular intervention is considered. Follow-up or repeat testing per neurologist, neurosurgeon, hematologist or in consultation with a neurologist, neurosurgeon or hematologist.
- 3D Rendering (CPT® 76377 or CPT® 76376) with cerebral angiography is medically necessary to define the presence, location, and anatomy of intracranial and cervical vascular malformations.
  - See and in the Preface Imaging Guidelines
- CT Perfusion (CPT® 70472 or 70473) **OR** MRI Perfusion (CPT® 70551 OR CPT® 70552 OR CPT® 70553) is medically necessary for any of the following:

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- When requested by neurologist and/or neurosurgeon
- Prior to change in treatment
- Post-surgical

Screening imaging for Moyamoya Disease

- Screening is not medically necessary for Moyamoya Syndrome.
  - See *Background and Supporting Information*
- Screening for Moyamoya Disease is medically necessary for:
  - First-degree relatives (biological parent, full sibling, or biological child) of individuals with Moyamoya Disease when requested by, or any provider in consultation with a neurologist, geneticist, or neurosurgeon
- The imaging listed below is medically necessary for screening evaluation of Moyamoya Disease:
  - MRA Head (CPT® 70544, CPT® 70545, **OR** CPT® 70546) **OR** Transcranial Doppler (TCD) Ultrasound (CPT® 93886 or CPT® 93888)
  - If MRA is contraindicated or not readily available, then CTA Head (CPT® 70496) is medically necessary

CT Perfusion (CPT ® 70472 or 70473)

- Is medically necessary if requested by a neurologist, neurosurgeon or any provider coordinating care with a neurologist or neurosurgeon.

MRI Perfusion

- MRI Perfusion may be obtained with MRI Brain (CPT® 70551 OR CPT® 70552 OR CPT® 70553)
  - No additional CPT® codes are medically necessary or appropriate to perform MRI perfusion.

Background and Supporting Information

Moyamoya disease (MMD) is a rare cerebrovascular disease characterized by progressive spontaneous bilateral occlusion of the intracranial internal carotid arteries (ICA) and their major branches (middle cerebral artery, MCA, and anterior cerebral artery, ACA) with compensatory capillary collaterals as an expression of pathologically increased angiogenic activity resembling a "puff of smoke" (Japanese: Moyamoya) on cerebral angiography. Moyamoya Disease is most prevalent individuals with East Asian ancestry. Up to 15% of individuals with Moyamoya Disease may have a family history of Moyamoya Disease.

Moyamoya Disease is distinguished from Moyamoya Syndrome (MMS). MMD is a primary disease process. MMS is a secondary process that occurs in response to

another underlying pathological process that causes stenosis of intracranial blood vessels. There are two peaks of incidence with different clinical presentations, at around 10 years and 30-40 years. The peak appears to occur later in women than men. In children, ischemic symptoms, especially transient ischemic attacks, are predominant. Intellectual decline, seizures, and involuntary movements are also more common in this age group. In contrast, adult individuals present with intracranial hemorrhage more often than pediatric individuals.

Head Imaging Guidelines

Sickle Cell Disease (HD-21.6)

HD.ST.0021.6.C
v1.0.2027

- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is medically necessary for the following:
  - Screening to detect silent cerebral infarcts
  - New symptoms or cognitive impairment occurs or a change in academic performance
  - Prior to any change in therapy
- MRA Head (CPT® 70544, CPT® 70545 OR CPT® 70546) **OR** CTA Head (CPT® 70496) is medically necessary for the following:
  - Any new, indeterminate, or equivocal findings on MRI Brain
  - Prior to any change in therapy

Background and Supporting Information

Individuals with sickle cell disease are at significantly increased risk for stroke and silent infarction, beginning at a very young age. Recent advances allow physicians to identify individuals at high risk for stroke and begin a primary stroke prevention program.

Identification of silent cerebral infarction is important because treatment with prophylactic red cell transfusions to maintain hemoglobin S levels at <30% of total hemoglobin may reduce recurrent stroke and extent of neurologic damage.

- TCD for children aged 17 years old may be medically necessary on a case-by-case basis.
- See also **Stroke/TIA (HD-21.1)** in the Head Imaging Guidelines.
- After 17 years old, for individuals with a history of abnormal TCDs, TCDs may be repeated every 3 months.
- TCD is not medically necessary for individuals with other phenotypes (Hgb SC, Hgb $S\beta^{+}$).

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Multisystemic Smooth Muscle Syndrome (MSMS)/Smooth Muscle Dysfunction Syndrome (SMDS)/ACTA2 Mutations (HD-21.7)

HD.ST.0021.7.A
v1.0.2027

Criteria

Indications	Medically Necessary Imaging
Initial evaluation for confirmed ACTA2 mutation	• MRI Brain without and with contrast (CPT® 70553) with OR without MRI perfusion **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549)
Repeat imaging if requested by neurologist and/or neurosurgeon and/or geneticist and/or provider coordinating care with a neurologist and/or neurosurgeon and/or geneticist	• MRI Brain without and with contrast (CPT® 70553) with OR without MRI perfusion **AND/OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549)

- MRI Perfusion may be obtained with MRI Brain (CPT® 70551 OR CPT® 70552 OR CPT® 70553)

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  - No additional CPT® codes are considered medically necessary to perform MRI perfusion.
- Because radiation is a known risk factor for development of moyamoya, MRI/MRA Head is recommended instead of Computed Tomography (CT)/CTA.
  - See *Background and Supporting Information*
- Conventional catheter angiogram 3D rendering (CPT® 76376 or CPT® 76377) should be reserved for individuals with focal neurologic symptoms or evidence on MRA or transcranial Doppler (TCD) of critical or progressive narrowing of the cerebral arteries.
  - See **Screening for Suspected Peripheral Artery Disease/Aneurysmal Disease (PVD-2)**

Background and Supporting Information

Smooth muscle dysfunction syndrome (SMDS)/Multisystemic smooth muscle syndrome (MSMS) presents with a recognizable pattern of complications, including congenital mydriasis, patent ductus arteriosus (PDA), pulmonary arterial hypertension, aortic and other arterial aneurysms, moyamoya-like cerebrovascular disease, intestinal hypoperistalsis and malrotation, and hypotonic bladder.

SMDS/MSMS is caused by heterozygous mutations of the ACTA2 altering arginine 179, most commonly p.Arg179His. With a single exception, all cases are due to de novo mutations.

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Cerebral Venous Sinus Thrombosis (HD-21.8)

HD.ST.0021.8.A
v1.0.2027

Criteria

CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart (there is no specific code for CT/MR venography):

- If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code is used to report both procedures.
- If an arterial CTA or MRA study has been performed and subsequently a repeat study is needed to evaluate the venous anatomy, then this study is considered medically necessary.
- If a venous CTV or MRV study has been performed and subsequently a repeat study is needed to evaluate the arterial anatomy, then this study is conisdered medically necessary.

Indications	Medically Necessary Imaging
Venous vascular imaging for evaluation of venous infarcts	MR or CT Venography: • MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** • CTV Head (CPT® 70496)
Suspected cerebral venous thrombosis	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • CT Head without contrast CPT® 70450 **AND/OR** • MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** • CTV Head (CPT® 70496)

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Indications	Medically Necessary Imaging
Follow up of known cerebral venous sinus thrombosis	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • CT Head without contrast (CPT® 70450) **AND/OR** • MRV Head (CPT® 70544, CPT® 70545, or CPT® 70546) **OR** • CTV Head (CPT® 70496)
To differentiate total from subtotal occlusion	MRA without and with contrast (CPT® 70546)

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Evidence Discussion (HD-21)

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- Guidelines from the American Heart Association (AHA) and American Stroke Association supported the role of neuroimaging in stroke triage and individual selection for endovascular therapy in the management of acute stroke (Expert panel on Neurological Imaging et al., 2023; Powers et al., 2019; Duvekot, 2021). Current AHA guidelines also recommended non-invasive imaging of the carotid arteries for individuals with TIA or stroke who may be candidates for carotid endarterectomy or stenting (Expert Panel on Neurological Imaging et al., 2023, Powers et al., 2019). This includes CT Angiography (CTA) of the head and neck or MR Angiography (MRA) of the head and neck.
- For clinically suspected stroke, initial imaging includes CT head to exclude intracranial hemorrhage, exclude other structural causes and assess for early ischemic changes (Expert Panel on Neurological Imaging et al., 2023). CT Angiography (CTA) head is considered medically necessary during the initial evaluation to assess for large vessel occlusion and has high sensitivity of 93% and specificity of 100% (Expert Panel on Neurological Imaging et al., 2023; Nickel & Kamani, 2018). CTA neck is also a rapid modality for imaging the extracranial vasculature to identify carotid stenosis, occlusion, and vertebral-basilar disease (Expert Panel on Neurological Imaging, et al., 2023).
- CT Perfusion (CTP) can identify individuals with large vessel occlusion who may be candidates for endovascular therapy in the acute stroke setting.
- A CT stroke protocol that includes unenhanced CT, CTA head, and CTP has effective radiation doses between 10-15 mSvm, with newer generation scanners and optimized sequences with lower radiation doses closer to 2 mSv (Arnold & Bousser, 2005).
- MRI Brain with Diffusion Weighted Imaging (DWI) is the most sensitive test to detect an acute ischemic infarct, with a sensitivity of 94% and a specificity of 97% (Expert Panel on Neurological Imaging et al., 2023; Powers et al., 2019, de Oliveira et al., 2021, Chalela et al., 2007).
- MR Angiography (MRA) Head and Neck is an alternative to CTA for identification of vascular lesions in the setting of a stroke evaluation.(Pannell 2023) Diagnostic cervicocerebral catheter angiography has the highest spatial and temporal resolution of any vascular imaging study, however, is invasive and requires use of contrast (Expert Panel on Neurological Imaging, et al., 2023).
- Compared with CT, a full stroke protocol with MRI is longer to acquire and susceptible to motion artifacts, in addition to contraindication with metallic devices, and certain implants (Duvekot et al., 2021). MRI, however, does have the advantage of increased sensitivity for acute ischemia, including in transient ischemic attack, and does not require radiation.

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- In the delayed stroke evaluation, CT Head may identify complications such as hemorrhagic conversion, mass effect and herniation (Duvekot et al., 2021). MRI Brain in this scenario can confirm the extent of an ischemic stroke, evaluate for underlying pathology, and identify any complications (Duvekot et al., 2021).
- For clinically suspected transient ischemic attack (TIA), CT Head is useful to exclude hemorrhage and other intracranial abnormalities (Expert Panel on Neurological Imaging et al., 2023). CT perfusion can identify abnormalities in the setting of TIA in up to one-third of cases (Expert Panel on Neurological Imaging, et al., 2023). CT Angiography (CTA) Head and Neck is a rapid modality for evaluating intracranial and extracranial vascular lesions (Expert Panel on Neurological Imaging et al., 2023). MRA Head and neck is an alternative modality, preferred in those with renal impairment and iodine contrast allergy (Expert Panel on Neurological Imaging et al., 2023). MRI Brain is the most sensitive modality for acute ischemic infarct (Expert Panel on Neurological Imaging et al., 2023). MRI Brain with Diffusion Weighted Imaging (DWI) sequences can identify ischemic changes in approximately 40% of individuals with TIA (Mullins et al., 2002).
- For clinically suspected venous sinus thrombosis, imaging is considered medically necessary to identify the clot and assess for complications, such as venous infarction or hemorrhagic transformation. In addition to imaging previously reviewed for the stroke protocol, CT Venogram (CTV) or MR Venogram (MRV) are appropriate to localize the clot within the venous system (Expert Panel on Neurological Imaging et al., 2023).
- For stroke or hemorrhage related to Cerebral amyloid angiopathy (CAA), Amyloid PET Brain has a sensitivity that ranges from 82% to 91%, however, its specificity is poor, ranging from 44% to 55%; therefore, this modality is not recommended (McCarter et al., 2021).

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References (HD-21)

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1. American College of Radiology. (2021). ACR–AIUM–SPR–SRU practice parameter for the performance of an ultrasound examination of the extracranial cerebrovascular system. https://gravitas.acr.org/PPTS/
2. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2021). ACR–ASNR–SIR–SNIS practice parameter for the performance of diagnostic cervicocerebral catheter angiography in adults. https://gravitas.acr.org/PPTS/
4. American College of Radiology. (2022). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) perfusion in neuroradiologic imaging. https://gravitas.acr.org/PPTS/
5. American College of Radiology. (2022). ACR–ASNR–SPR practice parameter for the performance of intracranial magnetic resonance perfusion imaging. https://gravitas.acr.org/PPTS/
6. American Medical Association. (2026). CPT: Current procedural terminology. American Medical Association.
7. Arnold, M., & Bousser, M.-G. (2005). Carotid and vertebral artery dissection. *Practical Neurology*, 5(2), 100–109. https://doi.org/10.1111/j.1474-7766.2005.00292.x
8. Baron, J. C., Farid, K., Dolan, E., Turc, G., Roumiguie, M., & Baron, J. C. (2014). Diagnostic utility of amyloid PET in cerebral amyloid angiopathy-related symptomatic intracerebral hemorrhage. *Journal of Cerebral Blood Flow & Metabolism,* 34(5), 753–758. https://doi.org/10.1038/jcbfm.2014.43
9. Belani, P., Schefflein, J., Kihira, S., Rigney, B., delman, B., Mahmoudi, K., ... Mossa-Basha, M. (2020). COVID-19 is an independent risk factor for acute ischemic stroke. *American Journal of Neuroradiology.* https://doi.org/10.3174/ajnr.A6650
10. Bernaudin, F., Verlhac, S., Arnaud, C., Kamdem, A., Hau, I., Leveillé, E., Vasile, M., Kasbi, F., Madhi, F., Fourmaux, C., Biscardi, S., Gluckman, E., Socié, G., Dalle, J. H., Epaud, R., & Pondarré, C. . (2016). Long-term treatment follow-up of children with sickle cell disease monitored with abnormal transcranial Doppler velocities. *Blood*, 127(14), 1814–1822. https://doi.org/10.1182/blood-2015-10-675231
11. Berry, J. A., Cortez, V., Toor, H., Saini, H., & Siddiqi, J. (2020). Moyamoya: An update and review. *Cureus*, 12(10), e10994. https://doi.org/10.7759/cureus.10994
12. Burton, T. M., & Bushnell, C. D. (2019). Reversible cerebral vasoconstriction syndrome. *Stroke*, 50(8), 2253–2258. https://doi.org/10.1161/STROKEAHA.119.024416
13. Chalela, J. A., Kidwell, C. S., Nentwich, L. M., Luby, M., Butman, J. A., Demchuk, A. M., ... Warach, S. (2007). Magnetic resonance imaging and computed tomography in emergency assessment of patients with suspected acute stroke. *The Lancet,* 369(9558), 293–298. https://doi.org/10.1016/S0140-6736(07)60151-2
14. Chandra, A., Stone, C. R., Du, X., Li, W. A., Huber, J. D., & Klibanov, A. L. (2017). The cerebral circulation and cerebrovascular disease III: *Stroke.* Brain Circulation, 3(2), 66–77. https://doi.org/10.4103/bc.bc_12_17
15. Choudri, A., Zaza, A., Auschwitz, T., & Mossa-Basha, M. (2014). Noninvasive vascular imaging of moyamoya: Diagnosis, follow-up, and surgical planning. *Journal of Pediatric Neuroradiology*, 3, 13–20. https://doi.org/10.3233/PNR-14082
16. Cuoco, J. A., Busch, C. M., Klein, B. J., Thompson, R. C., & Ambekar, S. (2018). ACTA2 cerebral arteriopathy: Not just a puff of smoke. *Cerebrovascular Diseases*, 46(3–4), 161–171. https://doi.org/10.1159/000493863
17. de Oliveira, E. P., Fiebach, J. B., Vagal, A., Schaefer, P. W., & Aviv, R. I. (2021). Controversies in imaging of patients with acute ischemic stroke: AJR Expert Panel narrative review. *American Journal of Roentgenology*, 217(5), 1027–1037. https://doi.org/10.2214/AJR.21.25846
18. Debaun, M. R., Jordan, L. C., King, A. A., Schatz, J., Vichinsky, E., Fox, C. K., ... Ware, R. E. (2020). American Society of Hematology 2020 guidelines for sickle cell disease: Prevention, diagnosis, and treatment of cerebrovascular disease in children and adults. *Blood Advances*, 4(8), 1554–1588. https://doi.org/10.1182/bloodadvances.2019001142
19. Demeestere, J., Wouters, A., Christensen, S., Lemmens, R., & Lansberg, M. G. (2020). Review of perfusion imaging in acute ischemic stroke. *Stroke*, 51(3), 1017–1024. https://doi.org/10.1161/STROKEAHA.119.028337
20. Dmytriw, A. A., Song, J. S. A., Yu, E., & Poon, C. S. (2018). Cerebral venous thrombosis: State of the art diagnosis and management. *Neuroradiology*, 60(7), 669–685. https://doi.org/10.1007/s00234-018-2032-2

21. Duvekot, M. H. C., van Es, A. C. G. M., Venema, E., van Walderveen, M. A. A., Wermer, M. J. H., & van Oostenbrugge, R. J. (2021). Accuracy of CTA evaluations in daily clinical practice for large and medium vessel occlusion detection. *European Stroke Journal*, 6(4), 357–366. https://doi.org/10.1177/23969873211058576
22. Expert Panel on Neurological Imaging, Ledbetter, L. N., Burns, J., Pannell, J. S., Corey, A. S., & Wintermark, M. (2021). ACR Appropriateness Criteria®: Cerebrovascular diseases—Aneurysm, vascular malformation, and subarachnoid hemorrhage. *Journal of the American College of Radiology*, 18(11S), S283–S304. https://doi.org/10.1016/j.jacr.2021.08.012
23. Expert Panel on Neurological Imaging, Pannell, J. S., Corey, A. S., & Ledbetter, L. N. (2023). ACR Appropriateness Criteria® cerebrovascular diseases—Stroke and stroke-related conditions. *American College of Radiology.* https://acsearch.acr.org/docs/3149012/Narrative/
24. Frangoul, H., Locatelli, F., Sharma, A., et al. (2024). Protocol for: Exagamglogene autotemcel for severe sickle cell disease. New England Journal of Medicine, 390, 1649–1662. https://doi.org/10.1056/NEJMoa2309676
25. Frangoul, H., Locatelli, F., Sharma, A., Bhatia, M., Mapara, M., Molinari, L., Wall, D., Liem, R. I., Telfer, P., Shah, A. J., Cavazzana, M., Corbacioglu, S., Rondelli, D., Meisel, R., Dedeken, L., Lobitz, S., de Montalembert, M., Steinberg, M. H., Walters, M. C., Eckrich, M. J., … CLIMB SCD-121 Study Group (2024). Exagamglogene Autotemcel for Severe Sickle Cell Disease. The New England journal of medicine, 390(18), 1649–1662. https://doi.org/10.1056/NEJMoa2309676
26. Ghoneim, A., Straiton, J., Pollard, C., Macdonald, K., & Jampana, R. (2020). Imaging of cerebral venous thrombosis. *Clinical Radiology*, 75(4), 254–264. https://doi.org/10.1016/j.crad.2019.12.009
27. Guzik, A., & Bushnell, C. (2017). Stroke epidemiology and risk factor management. *CONTINUUM: Lifelong Learning in Neurology*, 23(1), 15–39. https://doi.org/10.1212/CON.0000000000000416
28. Hakimi, R., & Sivakumar, S. (2019). Imaging of carotid dissection. *Current Pain and Headache Reports*, 23(1), Article 4. https://doi.org/10.1007/s11916-019-0741-9
29. Han, C., Feng, H., Han, Y. Q., Liu, W. W., Zhang, Z. S., & Yang, W. Z. (2014). Prospective screening of family members with moyamoya disease patients. *PLoS ONE*, 9(2), e88765. https://doi.org/10.1371/journal.pone.0088765
30. Hirtz, D., & Kirkham, F. J. (2019). Sickle cell disease and stroke. *Pediatric Neurology*, 95, 34–41. https://doi.org/10.1016/j.pediatrneurol.2019.02.018
31. Jordan, L. C., Kassim, A. A., Wilkerson, K. L., Lee, C. A., Waddle, S. L., & Donahue, M. J. (2020). Using novel magnetic resonance imaging methods to predict stroke risk in individuals with sickle cell anemia. *Hematology/Oncology and Stem Cell Therapy*, 13(2), 76–84. https://doi.org/10.1016/j.hemonc.2019.12.009
32. Kamel, H., Longstreth, W. T., Tirschwell, D. L., Kronmal, R. A., Broderick, J. P., Palesch, Y. Y., … Elkind, M. S. V. (2019). Tailoring the approach to embolic stroke of undetermined source: A review. *JAMA Neurology*, 76(7), 855–861. https://doi.org/10.1001/jamaneurol.2019.0591
33. Kanter, J., Liem, R. I., Bernaudin, F., King, A. A., McKinney, C., & Hsieh, M. M. (2021). American Society of Hematology 2021 guidelines for sickle cell disease: Stem cell transplantation. *Blood Advances*, 5(18), 3668–3689. https://doi.org/10.1182/bloodadvances.2021004394
34. Kim, J. S. (2016). Moyamoya disease: Epidemiology, clinical features, and diagnosis. *Journal of Stroke*, 18(1), 2–11. https://doi.org/10.5853/jos.2015.01627
35. Kirkham, F. J., & Lagunju, I. A. (2021). Epidemiology of stroke in sickle cell disease. *Journal of Clinical Medicine*, 10(18), 4232. https://doi.org/10.3390/jcm10184232
36. Krishnamurti, L. (2021). Hematopoietic cell transplantation for sickle cell disease. *Frontiers in Pediatrics*, 8, 551170. https://doi.org/10.3389/fped.2020.551170
37. Kovacs, M. J. (2011). Letter by Kovacs regarding article, "Diagnosis and management of cerebral venous thrombosis: A statement for healthcare professionals from the American Heart Association/American Stroke Association" [Letter to the editor]. *Stroke,* 42(7). https://doi.org/10.1161/STROKEAHA.111.619437
38. Latchaw, R. E., Yonas, H., Hunter, G. J., Joynt, R. J., Niendorf, T., Rosen, B. R., … Wechsler, L. R. (2003). Guidelines and recommendations for perfusion imaging in cerebral ischemia: A scientific statement from the American Heart Association. *Stroke*, 34(4), 1084–1104. https://doi.org/10.1161/01.STR.0000064840.99271.9E
39. Lawton, M. T., & Vates, G. E. (2017). Subarachnoid hemorrhage. *New England Journal of Medicine*, 377, 257–266. https://doi.org/10.1056/NEJMcp1605827
40. Mangla, A., Navi, B. B., Layton, K. F., & Kamel, H. (2014). Transient global amnesia and the risk of ischemic stroke. *Stroke*, 45(2), 389–393. https://doi.org/10.1161/STROKEAHA.113.003916

41. McCarter, S. J., Lesnick, T. G., Lowe, V. J., Botha, H., Graff-Radford, J., Petersen, R. C., … Murray, M. E. (2021). Cerebral amyloid angiopathy pathology and its association with amyloid-β PET signal. *Neurology*, 97(18), e1799–e1808. https://doi.org/10.1212/WNL.0000000000012770
42. Meschia, J. F., Bushnell, C., Boden-Albala, B., Braun, L. T., Bravata, D. M., Chaturvedi, S., Creager, M. A., Eckel, R. H., Elkind, M. S. V., Fornage, M., Goldstein, L. B., Greenberg, S. M., Horvath, S. E., Iadecola, C., Jauch, E. C., Moore, W. S., & Wilson, J. A. (2014). Guidelines for the primary prevention of stroke. *Stroke*, 45(12), 3754–3832. https://doi.org/10.1161/STR.0000000000000046
43. Merkler, A. E., Parikh, N. S., Mir, S., Gupta, A., Kamel, H., Lin, E., Lantos, J., Schenck, E. J., Goyal, P., Bruce, S. S., Kahan, J., Lansdale, K. N., LeMoss, N. M., Murthy, S. B., Stieg, P. E., Fink, M. E., Iadecola, C., Segal, A. Z., Campion, T. R., Jr, Diaz, I., … Navi, B. B. (2020). Risk of Ischemic Stroke in Patients with Covid-19 versus Patients with Influenza. *medRxiv : the preprint server for health sciences*, 2020.05.18.20105494. https://doi.org/10.1101/2020.05.18.20105494
44. Mertens, R., Graupera, M., Gerhardt, H., Bersano, A., Tournier-Lasserve, E., & Mineharu, Y. (2022). The genetic basis of moyamoya disease. *Translational Stroke Research*, 13(1), 25–45. https://doi.org/10.1007/s12975-021-00940-2
45. Messé, S. R., Gronseth, G. S., Kent, D. M., Kizer, J. R., Homma, S., Rosterman, L., … Tirschwell, D. L. (2020). Practice advisory update summary: Patent foramen ovale and secondary stroke prevention. *Neurology*, 94(20), 876–885. https://doi.org/10.1212/WNL.0000000000009443
46. Mullins, M. E., Schaefer, P. W., Sorensen, A. G., Halpern, E. F., Ay, H., He, J., … González, R. G. (2002). CT and conventional and diffusion-weighted MR imaging in acute stroke. *Radiology*, 224(2), 353–360. https://doi.org/10.1148/radiol.2242010873
47. Navi, B. B., & Iadecola, C. (2018). Ischemic stroke in cancer patients: A review of an underappreciated pathology. *Annals of Neurology*, 83(5), 873–883. https://doi.org/10.1002/ana.25227
48. Nickel, R. S., & Kamani, N. R. (2018). Ethical challenges in hematopoietic cell transplantation for sickle cell disease. *Biology of Blood and Marrow Transplantation*, 24(2), 219–227. https://doi.org/10.1016/j.bbmt.2017.08.034
49. Novillo-Solis, C., Salvador-Orbea, M., Morales-Acosta, A., & Leon-Rojas, J. E. (2026). Imaging-Based Diagnostic Approaches in Moyamoya Disease: A Scoping Review. *Journal of clinical medicine*, 15(6), 2410. https://doi.org/10.3390/jcm15062410
50. Osgood, M., Budman, E., Carandang, R., Goddeau, R. P., & Henninger, N. (2015). Prevalence of pelvic vein pathology in patients with cryptogenic stroke and patent foramen ovale. *Cerebrovascular Diseases*, 39(3–4), 216–223. https://doi.org/10.1159/000376613
51. Powers, W. J., Rabinstein, A. A., Ackerson, T., Adeoye, O. M., Bambakidis, N. C., Becker, K., … Tirschwell, D. L. (2019). Guidelines for the early management of patients with acute ischemic stroke. *Stroke*, 50(12). https://doi.org/10.1161/STR.0000000000000211
52. Regalado, E. S., Mellor-Crummey, L., De Backer, J., Braverman, A. C., Ades, L., Benedetti, M., … Milewicz, D. M. (2018). Clinical history and management recommendations of smooth muscle dysfunction syndrome due to ACTA2 alterations. *Genetics in Medicine*, 20(10), 1206–1215. https://doi.org/10.1038/gim.2017.245
53. Roeder, H. J., Lopez, J. R., & Miller, E. C. (2020). Ischemic stroke and cerebral venous sinus thrombosis in pregnancy. *Handbook of Clinical Neurology*, 172, 3–31. https://doi.org/10.1016/B978-0-444-64240-0.00001-5
54. Ropper, A. H. (2023). Transient global amnesia. *New England Journal of Medicine*, 388(7), 635–640. https://doi.org/10.1056/NEJMra2213867
55. Saver, J. L. (2016). Cryptogenic stroke. *New England Journal of Medicine*, 374, 2065–2074. https://doi.org/10.1056/NEJMcp1503946
56. Schievink, W. I. (2001). Spontaneous dissection of the carotid and vertebral arteries. *New England Journal of Medicine,* 344(12), 898–906. https://doi.org/10.1056/NEJM200103223441206
57. Schwarzbach, C. J., Fatar, M., Eisele, P., Ebert, A., Hennerici, M. G., & Szabo, K. (2012). Stroke and cancer: The importance of cancer-associated hypercoagulation. *Stroke*, 43, 3029–3034. https://doi.org/10.1161/STROKEAHA.112.658625
58. Spiegel, D. R., Smith, J., Wade, R. R., Cherukuru, N., Ursani, A., Dobruskina, Y., … Dhanani, R. M. (2017). Transient global amnesia: Current perspectives. *Neuropsychiatric Disease and Treatment*, 13, 2691–2703. https://doi.org/10.2147/NDT.S130710
59. Stam, J. (2005). Thrombosis of the cerebral veins and sinuses. *New England Journal of Medicine*, 352(17), 1791–1798. https://doi.org/10.1056/NEJMra042354

60. Szidonya, L., & Nickerson, J. P. (2023). Cerebral amyloid angiopathy. *Radiologic Clinics of North America*, 61(3), 551–562. https://doi.org/10.1016/j.rcl.2023.01.009
61. Tsivgoulis, G., & Alexandrov, A. V. (2016). Ultrasound in neurology. *CONTINUUM: Lifelong Learning in Neurology*, 22(5), 1655–1677. https://doi.org/10.1212/CON.0000000000000374
62. Wintermark, M., Sanelli, P. C., Albers, G. W., Bello, J. A., Derdeyn, C., Hetts, S. W., … Zaharchuk, G. (2013). Imaging recommendations for acute stroke and transient ischemic attack. *American Journal of Neuroradiology*, 34(11), E117–E127. https://doi.org/10.3174/ajnr.A3690

Cerebral Vasculitis (HD-22)

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Cerebral Vasculitis (HD-22.1)

HD.CV.0022.1.C
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- When CNS vasculitis is suspected MRI Brain without and with contrast (CPT® 70553) is medically necessary
  - MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **AND/OR**
  - MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549); **OR**
  - CTA Head (CPT® 70496) **AND/OR**
  - CTA Neck (CPT® 70498)

  OR
  - CTA Head and Neck (CPT® 70471) if performed during the same session
  - The above studies are medically necessary concurrently with brain imaging
- Primary CNS vasculitis includes Giant Cell Arteritis also known as Temporal Arteritis (see **New Headache Onset Older than Age 50 (HD-11.7)**)
- If initial vascular imaging is suspicious for vasculitis, 3D rendering (CPT® 76377 or CPT® 76376) with cervicocerebral angiography/arteriography (see **General Guidelines- Other Imaging Situations (HD-1.7)**).
- Transcranial Doppler Studies for individuals with documented vasculitis or concern for vasospasm
- FDG-PET/CT Brain (CPT® 78608) is not supported due to lack of peer reviewed literature or expert consensus supporting the study for vasculitis.
- For extra-cranial giant cell arteritis evaluation (see **Giant Cell Arteritis (PVD-6.9.2))**

Background and Supporting Information

The diagnosis of primary central nervous system vasculitis is challenging because of its nonspecific and varied symptoms. Central nervous system vasculitis typically presents with headache, followed by encephalopathy and behavioral changes. Focal neurologic deficits, including but not limited to, visual loss, unilateral weakness, language impairment, sensory loss, incoordination, occurs in 20% to 30% of individuals. Seizures and intracranial hemorrhage may also occur. With a strong clinical suspicion, brain imaging is important for supporting the diagnostic process and directing biopsy.

Classification of vasculitides based on vessel size adapted from Younger. MRA and CTA are useful for the evaluation of the large proximal arteries; evaluation of a possible small vessel vasculitis may be beyond the resolution of routine MRA and CTA Head. However, other abnormalities, such as atherosclerotic disease, arterial dissection, Moyamoya disease, or reversible cerebral vasoconstriction may be demonstrated. Conventional angiogram is superior to MRA and CTA in demonstrating abnormalities in smaller

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vessels and is considered the "gold standard" in the evaluation of primary small vessel CNS vasculitis.

Dominant Vessel Involved	Primary	Secondary
Large arteries	• Giant cell arteritis • Takayasu's arteritis	Aortitis with rheumatoid disease; Infection (e.g., syphilis)
Medium arteries	• Classical polyarteritis nodosa • Kawasaki disease	Infection (e.g., hepatitis B)
Small vessels and medium arteries	• Wegener's granulomatosis • Churg–Strauss syndrome • Microscopic polyangiitis	Vasculitis with rheumatoid disease, systemic lupus erythematosus (lupus cerebritis), Sjögren's syndrome, drugs, infection (e.g., HIV)
Small vessels	• Henoch-Schönlein purpura • Essential cryoglobulinemia • Cutaneous leukocytoclastic vasculitis	Drugs (e.g., sulphonamides, etc.) Infection (e.g., hepatitis C)

Evidence Discussion (HD-22)

- Non-invasive neuroimaging modalities play a role in the diagnostic evaluation of central nervous vasculitis by providing supportive imaging findings and guiding biopsy.[3,6] The preferred modality for the evaluation of central nervous system vasculitis is MRI, which provides superior soft-tissue resolution.[6] MRI Brain is abnormal in >95% of individuals with CNS vasculitis.[8] MRI Brain shows infarcts in up to 50% of cases and white matter hyperintensities in 42% of cases.[3,6]
- MRA head was found to be abnormal in 81% of individuals with angiographic findings of vasculitis and normal in 100% of individuals with a normal angiogram.[6]
- CT Angiography is an alternative non-invasive modality that also provides visualization of blood vessels.[3,6,8]
- FDG-PET/CT brain is not supported due to the high physiologic FDG uptake in the brain and limited resolution of the camera system. Atherosclerosis may also interfere with the FDG-PET interpretation.[6]

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References (HD-22)

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1. Ikeda, T., Furukawa, F., Kawakami, T., Ishiguro, N., Uzuki, M., Ozaki, S., Katsuoka, K., Kono, T., Kawana, S., Kodera, M., Sawai, T., Sawada, Y., Seishima, M., Tanikawa, A., Chen, K.-R., & Hasegawa, M. (2018). Outline of guidelines for the management of vasculitis and vascular disorders in Japan, 2016 revised edition. *The Journal of Dermatology,* 45(2), 122–127. https://doi.org/10.1111/1346-8138.14086
2. Ledbetter, L. N., Burns, J., Shih, R. Y., Ajam, A. A., Brown, M. D., Chakraborty, S., Davis, M. A., Ducruet, A. F., Hunt, C. H., Lacy, M. E., Lee, R. K., Pannell, J. S., Pollock, J. M., Powers, W. J., Setzen, G., Utukuri, P. S., Wang, L. L., & Corey, A. S. (2021). ACR Appropriateness Criteria® cerebrovascular diseases—Aneurysm, vascular malformation, and subarachnoid hemorrhage. *Journal of the American College of Radiology,* 18(11, Suppl), S283–S304. https://doi.org/10.1016/j.jacr.2021.08.012
3. Okazaki, T., Shinagawa, S., & Mikage, H. (2017). Vasculitis syndrome: Diagnosis and therapy. *Journal of General and Family Medicine*, 18(2), 72–78. https://doi.org/10.1002/jgf2.4
4. Salmela, M. B., Mortazavi, S., Jagadeesan, B. D., Broderick, D. F., Burns, J., Deshmukh, T. K., Harvey, H. B., Hoang, J. K., Hunt, C. H., Kennedy, T. A., Khalessi, A. A., Mack, W. J., Patel, N. D., Perlmutter, J. S., Policeni, B., Schroeder, J. W., Setzen, G., Whitehead, M. T., Cornelius, R. S., & Corey, A. S. (2017). ACR Appropriateness Criteria® cerebrovascular disease. *Journal of the American College of Radiology*, 14(5, Suppl), S34–S61. https://doi.org/10.1016/j.jacr.2017.01.051
5. Slart, R. H. J. A., Glaudemans, A. W. J. M., Chareonthaitawee, P., Treglia, G., Besson, F. L., Bleeker-Rovers, C. P., Blockmans, D., Boellaard, R., Bucerius, J., Carril, J. M., Chen, W., Cid, M. C., Dagupta, B., Dorbala, S., Gheysens, O., Hyafil, F., Jain, S., Klink, T., van der Laken, C. J., Lomeña, F., Massollo, M., Prieto-González, S., Luqmani, R., Roivainen, A., Salvarani, C., Saraste, A., Schirmer, M., Verberne, H. J., Versari, A., Voskuylen, A. E., Walter, M. A., Camellino, D., Brouwer, E., & Cimmino, M. A. (2018). FDG-PET/CT(A) imaging in large vessel vasculitis and polymyalgia rheumatica: Joint procedural recommendation of the EANM, SNMMI, and the PET Interest Group (PIG), endorsed by the ASNC. *European Journal of Nuclear Medicine and Molecular Imaging*, 45(7), 1250–1269. https://doi.org/10.1007/s00259-018-3973-8
6. Soun, J. E., Song, J. W., Romero, J. M., & Schaefer, P. W. (2019). Central nervous system vasculopathies. *Radiologic Clinics of North America*, 57(6), 1117–1131. https://doi.org/10.1016/j.rcl.2019.07.005
7. Wahed, L. A., & Cho, T. A. (2023). Imaging of central nervous system autoimmune, paraneoplastic, and neuro-rheumatologic disorders. *Continuum: Lifelong Learning in Neurology,* 29(1), 255–291. https://doi.org/10.1212/CON.0000000000001244
8. Younger, D. S. (2016). Epidemiology of neurovasculitis. *Neurologic Clinics*, 34(4), 887–917. https://doi.org/10.1016/j.ncl.2016.06.006

Dizziness, Vertigo and Syncope (HD-23)

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Dizziness/Vertigo (HD-23.1)

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Criteria

Indications	Medically Necessary Imaging
Red Flags: • History of malignancy • Associated symptoms: ◦ Headache ◦ Hearing loss ◦ Unilateral tinnitus ◦ Visual disturbances ◦ Drop attacks ◦ Vestibular migraine ◦ Weakness • Duration of episode: ◦ Episodes lasting hour(s) or continuous • Exam findings: ◦ Inconclusive positional testing or equivocal or unusual nystagmus findings (Negative Dix-Hallpike) ◦ Visual disturbances including loss and diplopia ◦ Hearing loss ◦ Abnormal cranial nerve findings ◦ Ataxia ◦ Positive Romberg sign ◦ Absent head thrust sign ◦ Focal neurologic deficits ◦ Dysarthria ◦ Weakness, including unilateral or hemibody weakness • Failed treatment: ◦ Failure to respond to vestibular therapy or unable to participate due to clinical condition • Abnormal test results: ◦ ENG/VNG results support central cause	• MRI Brain without contrast (CPT 70551) **OR** • MRI Brain without and with contrast (CPT 70553) **OR** • CT Head without contrast (CPT 70450) If MRI contraindicated: • CT Head without contrast (CPT 70450) **OR** • CT Head without and with contrast (CPT 70470) See also: • **Headaches with Red Flags (HD-11.2)** • **Multiple Sclerosis and Related Conditions (HD-16)** • **Brain Metastases (ONC-31.3)**

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Indications	Medically Necessary Imaging
Stroke/TIA	See **Stroke/TIA (HD-21.1)**
Acoustic Neuroma/Vestibular Schwannoma	• MRI Brain without and with contrast (with IAC views) (CPT® 70553) **OR** without contrast (CPT® 70551) • Limited MRI of the internal auditory canals (CPT® 70540, CPT® 70542, OR CPT® 70543) when requested by the provider in place of a complete MRI Brain See also • **Acoustic Neuroma (HD-33.1)** • **Peripheral Nerve Sheath Tumors (PN-9.1)**
Head trauma/Temporal Bone Fracture/ Post-traumatic vertigo	• CT Head without contrast (CPT® 70450) ◦ See **Head Trauma (HD-13.1)** **AND/OR** • CT Orbit/Temporal bone without contrast (CPT® 70480)

Indications	Medically Necessary Imaging
Vertebrobasilar disease/ Vertebrobasilar Insufficiency/ Dissection	• CTA Head (CPT® 70496 **AND/OR** • CTA Neck (CPT® 70498) **OR** • CTA Head and Neck (CPT® 70471) if performed during the same session **OR** • MRA Head (CPT® 70544, CPT® 70545, OR CPT® 70546) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548, or CPT®70549) See also: • **General Guidelines - CT and MR Angiography (CTA/ CTV and MRA/MRV) (HD-1.5)** • **Headache and Suspected Vascular Dissection (HD-11.1)** • **Intracranial Cerebral Aneurysms (HD-12.1)**
Semicircular canal dehiscence	• CT Orbit/Temporal bone without contrast (CPT® 70480)

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Indications	Medically Necessary Imaging
Meniere's Disease	• MRI Brain without and with contrast (with IAC views) (CPT® 70553) **OR** without contrast (CPT® 70551) • Limited MRI of the internal auditory canals (CPT® 70540, CPT® 70542, OR CPT® 70543) when requested by the provider in place of a complete MRI Brain

Background and Supporting Information

- Dizziness, a common complaint, with benign and dangerous causes, may be continuous, triggered, or spontaneous.
- For the continuously dizzy individual with nystagmus at the time of evaluation, a head impulse test and a test of skew should be performed to determine if dizziness is due to a peripheral cause or a posterior circulation stroke. Abnormalities on exam may be indications for imaging as detailed in the guideline.
- For triggered dizziness, positional testing such as the Dix-Hallpike maneuver, and/or orthostatic blood pressure measurements, should be performed. If symptoms are reproduced on examination, triggered dizziness is confirmed.
- Spontaneous dizziness may be due to vestibular migraine, TIA, or Meniere's disease, among other causes. A detailed neurologic examination should be performed, and imaging as detailed in the guideline.
- The Dix-Hallpike maneuver should be performed or the individual should be referred to a clinician who could perform the procedure if Benign Paroxysmal Positional Vertigo (BPPV) is suspected.
- The Head Impulse Test (HIT) is also known as the Head thrust test. It is designed to evaluate the vestibular-ocular reflex in an individual with concern for a peripheral vestibulopathy due to ACUTE spontaneous vertigo. The individual is instructed to look at the examiner during the entire test. The individual's head is then quickly turned or rotated to one side and then the other. If normal, the individual's eyes should remain locked on the examiner. If abnormal, the eyes will move in the direction of the head rotation and then quickly correct. This saccade indicates peripheral vestibular hypofunction on the side of the direction that the head is turned. The HIT test is

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abnormal in individuals with vestibular neuronitis, and normal in individuals with a posterior circulation stroke.

- Posterior Canal BPPV (85%-95% of BPPV cases) is defined as:
  - Individual reports repeated episodes of vertigo with changes in head position relative to gravity.
  - Each of the following criteria is fulfilled on physical exam:
    - Vertigo associated with torsional (rotatory), upbeating (toward the forehead) nystagmus is provoked by the Dix-Hallpike test.
    - There is a latency period between the completion of the Dix-Hallpike maneuver and the onset of vertigo and nystagmus.
    - The provoked vertigo and nystagmus increase and then resolve within 60 seconds from the onset of the nystagmus.
- Lateral or Horizontal Canal BPPV (5%-15% of BPPV cases) will have horizontal or no nystagmus to which a supine roll test assesses for this condition.
- Exclusions for Dix-Hallpike maneuver
  - Individual previously diagnosed with BPPV and who on date of encounter in calendar year does not have positional dizziness or vertigo consistent with active BPPV
  - Individual has declined Dix-Hallpike maneuver
  - Individual has cervical spinal disease (i.e., cervical stenosis, severe kyphoscoliosis, limited cervical range of motion, Down's syndrome, severe rheumatoid arthritis, cervical radiculopathies, Paget's disease, ankylosing spondylitis, low back dysfunction, spinal cord injuries, spinal fractures)
  - Individual unable to lay flat (i.e., severe heart disease)
  - Individual has severe atherosclerotic disease or recent dissection involving the anterior or posterior cerebral circulation
  - Unable to be seated in exam chair (i.e., morbidly obese), or maneuver cannot be safely performed given morbid obesity
  - Ehlers Danlos/Marfans/Connective tissue disorder due to risk of cranio spinal instability/dissection
- Triggered episodic vestibular syndrome (t-EVS) usually last seconds to minutes with the most common triggers (vs. exacerbating factors) are head motion or change in body position. In the Emergency Department, benign paroxysmal positional vertigo (BPPV) is the second most common cause of t-EVS after orthostatic hypotension. Far lateral rotation of the neck leads to mechanical occlusion of one or both vertebral arteries causing temporary symptoms of vertigo and nystagmus when this position is maintained and may occur with the individual upright.
- Diagnoses or conditions associated with orthostatic hypotension (OH) or nOH include: Parkinson Disease (PD), Multiple System Atrophy (MSA), Pure Autonomic

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Failure (PAF) or Dementia with Lewy Bodies (DLB), unexplained fall or syncope, peripheral neuropathies secondary to diabetes, amyloidosis and HIV, individuals 70 years of age and older and frail and on multiple medications and individuals with postural (orthostatic) dizziness or nonspecific symptoms that occur when standing. Symptoms may include: lightheadedness or dizziness, the sensation of blacking out, cognitive dysfunction, mental dulling, generalized weakness, neck pain or discomfort in the suboccipital and paracervical region (coat hanger) or platypnea (dyspnea while standing).

- Secondary or advanced laboratory testing is considered for use in select individuals for paraneoplastic syndromes (paraneoplastic panel) and serum and urine protein electrophoresis for monoclonal gammopathy for peripheral neuropathy.
  - See **Polyneuropathy (PN-3.1)** in the Peripheral Nerve and Neuromuscular Disorders Imaging Guidelines, **Multiple Myeloma and Plasmacytomas (ONC-25)** in the Oncology Imaging Guidelines, and **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines.
- Semicircular canal dehiscence (SCD) is a rare syndrome caused by dehiscence in the boney covering of the affected superior, posterior or lateral semicircular canal. When present, it can result in vestibular symptoms of vertigo associated with auditory symptoms including oscillopsia evoked by noise and conductive hearing loss. The vestibular symptoms in SCD can be debilitating. Individuals may note that loud noises cause them to see things moving or that they experience a similar sensation when they cough, sneeze, or strain to lift something heavy. The signs of vestibular abnormalities in SCD relate directly to the effect of the dehiscence which has created a third mobile window of the inner ear. Some individuals have a conductive hearing loss for low-frequency sounds that can resemble the pattern in otosclerosis.
- Occlusive carotid artery disease does not cause fainting but rather causes focal neurologic deficits such as unilateral weakness. Thus, carotid imaging will not identify the cause of the fainting and increases cost. Fainting is a frequent complaint, affecting 40% of people during their lifetime.

Evidence Discussion (HD-23.1)

- MRI Brain is the preferred initial imaging modality for evaluation of persistent vertigo, vertigo associated with an abnormal neurologic exam, and vertigo due to a suspected central cause (Wang et al., 2023; ACR 2024).
- CT Head is not recommended for the initial evaluation of dizziness due to inferior soft tissue resolution when compared to MRI Brain. In addition, MRI Brain provides better visualization of the cerebellum and posterior fossa and is more sensitive for the detection of posterior fossa infarcts. For suspected superior semicircular canal dehiscence, CT Temporal bone is the appropriate initial imaging study (Wang et al., 2023).

- In the evaluation of dizziness or vertigo in the emergency department, the positivity rate of CT Head was 2%, for MRI Brain 4%, with the diagnostic yield increasing to 12% for MRI Brain if neurologic findings were present (Wang et al., 2023).
- For dizziness due to suspected vertebral-basilar insufficiency, MRA sensitivity reaches 97% when performed with contrast-enhancement (Wang et al., 2023).
- For suspected vertebral artery dissection, CTA had the highest sensitivity 100%, followed by MRA 77%, and Doppler ultrasound at 71% (Wang et al., 2023).
- Vascular imaging should include the entire vertebral artery from the origin at the aortic arch to the basilar artery (Wang et al., 2023).

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Syncope (HD-23.2)

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Criteria

Indications	Medically Necessary Imaging
Syncope with focal signs of a neurologic deficit **OR** Syncope without focal signs of a neurological deficit AND negative or inconclusive Electrocardiogram (EKG)	• MRI Brain without contrast (CPT® 70551) **OR** • MRI Brain without and with contrast (CPT® 70553) **OR** • CT Head without contrast (CPT® 70450) **AND/OR** • CTA Head (CPT® 70496) **OR** • MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) **AND/OR** • CTA Neck (CPT® 70498) **OR** • MRA Neck (CPT® 70547, CPT® 70548, or CPT® 70549) ◦ CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session
Recurrent syncope with risk of head injury or head trauma related to syncope	See **Head Trauma (HD-13.1)**
Situational syncope, including precipitating factors to syncope such as coughing, defecation, eating, laughing, or urination Myoclonic jerks without symptoms or signs associated with seizure, including but not limited to prolonged amnesia/confusion, tongue biting.	Advanced imaging is considered not medically necessary

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Indications	Medically Necessary Imaging
Loss of consciousness with other symptoms or signs of seizure, including but not limited to, prolonged amnesia/ confusion, tongue biting, and/or urinary incontinence.	See **Epilepsy/Seizure (HD-9.1)**

Evidence Discussion (HD-23.2)

- The Choosing Wisely Campaign Best Practices, supported by the American College of Emergency Physicians, American College of Physicians, and the American Academy of Neurology recommended against neuroimaging in the evaluation of simple syncope and a normal neurologic evaluation (Runser et al., 2017, Expert Panels on Cardiac Imaging and Neurological Imaging et al., 2021).
- The initial evaluation for individuals with syncope includes a detailed history, physical exam, and electrocardiography (Runser et al., 2017; Shen et al., 2017; Expert Panels on Cardiac Imaging and Neurological Imaging et al., 2021; Langer-Gould et al., 2013; Bayard et al., 2023). Neuroimaging has a low diagnostic yield of 5% to 6.4% of an acute abnormality on CT Head (Runser et al., 2017; Expert Panels on Cardiac Imaging and Neurological Imaging et al., 2021; Mitsunaga & Yoon, 2015). Clinical factors associated with abnormal scans include head trauma or a focal neurologic deficit on exam (Runser et al., 2017; Expert Panels on Cardiac Imaging and Neurological Imaging et al., 2021; Mitsunaga & Yoon, 2015).
- In select cases when neuroimaging is considered medically necessary, structural brain imaging with either CT Head or MRI Brain may be useful, along with vascular imaging, depending on the suspected underlying pathology (Expert Panels on Cardiac Imaging and Neurological Imaging et al., 2021; Bayard et al., 2023).
- Inappropriate imaging studies may identify incidental findings, incorrectly assumed to be the cause of syncope, leading to further delay in the identification of the true cause and risk additional unnecessary procedures (Langer-Gould et al., 2013).
- Situational syncope does not require advanced imaging (Cheshire, 2017; Shen et al., 2017; Cutsforth-Gregory, 2020).

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References (HD-23)

v1.0.2027

1. American Academy of Neurology. (2013). Choosing Wisely: An initiative of the ABIM Foundation. https://www.choosingwisely.org
2. American College of Emergency Physicians. (2014). Choosing Wisely: An initiative of the ABIM Foundation. https://www.choosingwisely.org
3. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
4. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
5. Baloh, R. W. (2020). Vestibular migraine I: Mechanisms, diagnosis, and clinical features. *Seminars in Neurology*, 40(1), 76–82. https://doi.org/10.1055/s-0039-3402735
6. Basura, G. J., Adams, M. E., Monfared, A., Schwartz, S. R., Antonelli, P. J., Burkard, R., Bush, M. L., Bykowski, J., Colandrea, M., Derebery, M. J., Espay, A. J., Faber, L. S., Hageman, C., Haynes, D. S., Mann, N. R., Megerian, C. A., Michaelides, E. M., O'Malley, M. R., Phillips, C. D., … Stucken, E. Z. (2020). Clinical practice guideline: Ménière's disease. *Otolaryngology–Head and Neck Surgery*, 162(2 Suppl), S1–S55. https://doi.org/10.1177/0194599820909438
7. Bayard, M., Gerayli, F., & Holt, J. (2023). Syncope: Evaluation and differential diagnosis. *American Family Physician,* 108(5), 454–463.
8. Bhattacharyya, N., Gubbels, S. P., Schwartz, S. R., Edlow, J. A., El-Kashlan, H., Fife, T., Holmberg, J. M., Mahony, K., Hollingsworth, D. B., Roberts, R., Seidman, M. D., Steiner, R. W., Tsai Do, B. S., Walsh, S. A., & Corrigan, M. D. (2017). Clinical practice guideline: Benign paroxysmal positional vertigo (update). *Otolaryngology–Head and Neck Surgery*, 156(3 Suppl), S1–S47. https://doi.org/10.1177/0194599816689667
9. Cheshire, W. P. (2017). Syncope. *Continuum: Lifelong Learning in Neurology*, 23(2), 335–358. https://doi.org/10.1212/CON.0000000000000444
10. Cutsforth-Gregory, J. K. (2020). Postural tachycardia syndrome and neurally mediated syncope. *Continuum* (Minneapolis, Minn.), 26(1), 93–115. https://doi.org/10.1212/CON.0000000000000818
11. Dix-Hallpike maneuver performed for patients with BPPV. (n.d.). *American Academy of Neurology*. https://www.aan.com/policy-and-guidelines/quality/quality-measures2/quality-measures/other/dix-hallpike-maneuver-performed-for-paitents-with-BPPV
12. Edlow, J. A. (2019). The timing-and-triggers approach to the patient with acute dizziness. *Emergency Medicine* Practice, 21(12), 1–24.
13. Edlow, J. A., Gurley, K. L., & Newman-Toker, D. E. (2018). A new diagnostic approach to the adult patient with acute dizziness. *The Journal of Emergency Medicine*, 54(4), 469–483. https://doi.org/10.1016/j.jemermed.2017.12.024
14. Expert Panel on Neurologic Imaging, Sharma, A., Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Bendok, B. R., Chapman, M. N., Corey, A. S., Cruz, J., Hunt, C. H., Hudgins, P. A., Kotsenas, A. L., & Phillips, C. D. (2018). ACR Appropriateness Criteria® hearing loss and/or vertigo. *Journal of the American College of Radiology*, 15(11 Suppl), S321–S331. https://doi.org/10.1016/j.jacr.2018.09.020
15. Expert Panels on Cardiac Imaging and Neurological Imaging, Kligerman, S. J., Bykowski, J., Dill, K. E., Fessell, D. P., Kirsch, J., & Rybicki, F. J. (2021). ACR Appropriateness Criteria® syncope. *Journal of the American College of Radiology,* 18(5 Suppl), S229–S238. https://doi.org/10.1016/j.jacr.2021.02.021
16. Fife, T. D. (2021). Approach to the history and evaluation of vertigo and dizziness. *Continuum: Lifelong Learning in Neurology*, 27(2), 306–329. https://doi.org/10.1212/CON.0000000000000938
17. Gibbons, C. H., Schmidt, P., Biaggioni, I., Frazier-Mills, C., Freeman, R., Isaacson, S., Karabin, B., Kuritzky, L., Low, P. A., Sandroni, P., Schatz, I., & Vernino, S. (2017). Recommendations of a consensus panel for the screening, diagnosis, and treatment of neurogenic orthostatic hypotension. *Journal of Neurology*, 264(8), 1567–1582. https://doi.org/10.1007/s00415-016-8375-x
18. Hain, T. C., & Cherchi, M. (2021). Vestibular testing. *Continuum: Lifelong Learning in Neurology*, 27(2), 330–347. https://doi.org/10.1212/CON.0000000000000978

19. Henderson, F. C., Sr., Austin, C., Benzel, E., Bolognese, P., Ellenbogen, R., Francomano, C. A., Klinge, P., Koby, M., Long, D., Patel, S., & Voermans, N. (2017). Neurological and spinal manifestations of the Ehlers-Danlos syndromes. *American Journal of Medical Genetics Part C: Seminars in Medical Genetics*, 175(1), 195–211. https://doi.org/10.1002/ajmg.c.31549
20. Krishnan, K., Bassilious, K., Eriksen, E., Bath, P. M., Christensen, H., Ovesen, C., & Sandset, E. C. (2019). Posterior circulation stroke diagnosis using HINTS. *European Stroke Journal*. https://doi.org/10.1177/2396987319843701
21. Langer-Gould, A. M., Anderson, W. E., Armstrong, M. J., Cohen, A. B., Eccher, M. A., Iverson, D. J., Potrebic, S., & Villanueva, J. A. (2013). The American Academy of Neurology's top five Choosing Wisely recommendations. *Neurology*, 81(11), 1004–1011. https://doi.org/10.1212/WNL.0b013e31828aab14
22. Mitsunaga, M. M., & Yoon, H. C. (2015). Head CT scans in the emergency department for syncope and dizziness. *AJR American Journal of Roentgenology*, 204(1), 24–28. https://doi.org/10.2214/AJR.14.12993
23. Runser, L. A., Gauer, R. L., & Houser, A. (2017). Syncope: Evaluation and differential diagnosis. *American Family Physician*, 95(5), 303–312.
24. Scott, J. W., Schwartz, A. L., Gates, J. D., Gerhard-Herman, M., & Havens, J. M. (2014). Choosing Wisely for syncope: Low-value carotid ultrasound use. *Journal of the American Heart Association*, 3(4), e001063. https://doi.org/10.1161/JAHA.114.001063
25. Shen, W.-K., Sheldon, R. S., Benditt, D. G., Cohen, M. I., Forman, D. E., Goldberger, Z. D., Grubb, B. P., Hamdan, M. H., Krahn, A. D., Link, M. S., Olshansky, B., Raj, S. R., Sandhu, R. K., Shen, W. K., & Varosy, P. D. (2017). 2017 ACC/AHA/HRS guideline for the evaluation and management of patients with syncope. *Circulation*, 136(5), e60–e122. https://doi.org/10.1161/CIR.0000000000000499
26. Shmuely, S., van der Lende, M., Lamberts, R. J., Gutter, T., Sander, J. W., & Thijs, R. D. (2018). Differentiating motor phenomena in tilt-induced syncope and convulsive seizures. *Neurology*, 90, e1339–e1346. https://doi.org/10.1212/WNL.0000000000005301
27. Steenerson, K. K. (2021). Acute vestibular syndrome. *Continuum: Lifelong Learning in Neurology,* 27(2), 402–419. https://doi.org/10.1212/CON.0000000000000958
28. Tehrani, A. S. S., Kattah, J. C., Kerber, K. A., Gold, D. R., Zee, D. S., Urrutia, V. C., Newman-Toker, D. E. (2018). Diagnosing stroke in acute dizziness and vertigo. *Stroke*, 49(3), 788–795. https://doi.org/10.1161/STROKEAHA.117.016979
29. Wang, L. L., Thompson, T. A., Shih, R. Y., Ledbetter, L. N., Burns, J., Corey, A. S., & ACR Expert Panel on Neurologic Imaging. (2023). ACR Appropriateness Criteria® dizziness and ataxia. *American College of Radiology*. https://acsearch.acr.org/docs/69477/Narrative/

Other Imaging Studies (HD-24)

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Transcranial Magnetic Stimulation (TMS) (HD-24.1)

HD.OI.0024.1.A

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In TMS, an electromagnetic coil placed on the surface of the skull overlying the motor cortex depolarizes the motor axons, creating a motor evoked potential (MEP), which is recorded via superficial skin electrodes as it passes through the upper and lower motor pathways to an innervated muscle.

TMS is typically utilized for behavioral health purposes.

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Functional MRI (fMRI) (HD-24.2)

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Criteria

- fMRI is useful in pre-operative scenarios to define the “eloquent” areas of brain
  - The ordering physician must be a neurologist, neurosurgeon or radiation oncologist or any provider in consultation with one of these specialists.
- Primary medically necessary indications for fMRI include, but are not limited to, the following:
  - Assessment of intracranial neoplasm and other targeted lesions
  - Pre-surgical planning and operative risk assessment
  - Assessment of eloquent cortex (e.g., language, sensory, motor, visual centers) in relation to a tumor or another focal lesion
  - Surgical planning (biopsy or resection)
  - Therapeutic follow-up, as a one-time, post-operative, follow- up study
  - Evaluation of preserved eloquent cortex
  - Assessment of eloquent cortex for epilepsy surgery
  - Assessment of radiation treatment planning and post-treatment evaluation of eloquent cortex
- fMRI is considered medically necessary with PET Brain in epilepsy surgery planning
- Procedure codes for functional MRI:
  - CPT® 70554 MRI Brain, functional MRI, including test selection and administration of repetitive body part movement and/or visual stimulation, not requiring physician or psychologist administration
  - CPT® 70555 MRI Brain, functional MRI; requiring physician or psychologist administration of entire neurofunctional testing
  - If MRA Head (CPT® 70544) is considered medically necessary but Functional MRI (CPT® 70554 or CPT® 70555) was erroneously ordered, then CPT® 70544 may be substituted when appropriate
- MRI Brain (CPT® 70551 or CPT® 70553) and/or fMRI (CPT® 70554 or CPT® 70555) are considered medically necessary concurrently
  - See **Unlisted Procedures/Therapy Treatment Planning (Preface-4.3)** in the Preface Imaging Guidelines if MRI Unlisted is requested for surgical planning

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Magnetic Resonance Spectroscopy (MRS) (HD-24.3)

HD.OI.0024.3.A
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Criteria

- MRS (CPT® 76390) involves analysis of the levels of certain chemicals in a pre-selected voxels (small regions) on an MRI scan done at the same time.
- When conventional imaging by magnetic resonance imaging (MRI) or computed tomography (CT) provides limited information regarding specific clinical questions, indications for MRS in adults and children include **ONE** of the following:
  - Distinguish recurrent brain tumor from radiation necrosis as an alternative to PET (CPT® 78608)
  - Diagnosis of certain rare inborn errors of metabolism affecting the CNS (primarily pediatric individuals)
  - Evidence or suspicion of primary or secondary neoplasm (pre-treatment and post-treatment)
  - Grading of primary glial neoplasm, particularly high-grade versus low-grade glioma
  - Evidence or suspicion of brain infection, especially cerebral abscess (pre-treatment and post-treatment) and HIV-related infections
  - Seizures, especially temporal lobe epilepsy

Background and Supporting Information

- Evaluation of certain primary brain tumors where diagnostic accuracy has been established in peer-reviewed literature.
  - See **Primary Central Nervous System Tumors – General Considerations (ONC-2.1)**, **Low Grade Gliomas (ONC-2.2)**, and **High Grade Gliomas (ONC-2.3)** in the Oncology Imaging Guidelines

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CSF Flow Imaging (HD-24.4)

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Criteria

- Pulse-gated MRI imaging or MRI CINE is generally performed as a part of an MRI Brain study. It is not coded separately for pre-operative evaluation of hydrocephalus, Chiari syndromes, Normal Pressure Hydrocephalus, Idiopathic Intracranial Hypertension (also known as pseudotumor cerebri), and spontaneous intracranial hypotension.
- There is no specific or unique procedure code for this study; it is done as a special sequence of a routine MRI Brain without contrast (CPT® 70551).
- If not previously performed as part of recent study, a second study for the purpose of evaluating CSF flow is considered medically necessary.

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CT or MRI Perfusion (HD-24.5)

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Criteria

- Performed as part of a CT Head or MRI Brain examination in the evaluation of individuals with very new strokes or brain tumors.
- CT perfusion study is coded as either CPT® 70472 or CPT® 70473
- CPT® 70472, CT cerebral perfusion analysis with contrast material, including imaging postprocessing, performed with concurrent CT or CT angiography of the same anatomy, (use in conjunction with 70450, 70460, 70470, 70471, 70496).
- CPT® 70473, CT cerebral perfusion analysis with contrast, without concurrent CT or CTA of same anatomy, with postprocessing.
  - CTA Head and/or Neck is considered medically necessary in conjunction with the CT Perfusion study (CPT® 70472)
- CPT® 70472 or 70473 - cerebral perfusion analysis using CT is considered medically necessary for the following:
  - Evaluation of acute stroke (<24 hours) to help identify individuals with stroke-like symptoms and to help identify those most likely to benefit from thrombolysis or thrombectomy
  - Follow-up for acute cerebral ischemia or infarction and/or reperfusion in the subacute or chronic phase of recovery
  - To assist in planning and evaluating the effectiveness of therapy for cervical or intracranial arterial occlusive disease (as an isolated test or in combination with a cerebrovascular reserve challenge) and/or chronic cerebral ischemia
  - Identifying cerebral hyperperfusion syndrome following revascularization
  - Evaluation of the vascular status of solid tumors where MRI is degraded due to susceptibility artifact from air-containing spaces, surgical clips, or dental work
  - Follow-up of tumor response to therapy
- See also **General Guidelines – CT and MR Angiography (CTA/CTV and MRA/MRV) (HD-1.5)**, and **Stroke/TIA (HD-21.1)**
- MRI Perfusion is obtained with MRI Brain (CPT® 70551 OR CPT® 70552 OR CPT® 70553).
  - No additional CPT® codes are considered medically necessary to perform MRI perfusion.
- Medically necessary indications for perfusion magnetic resonance imaging (MRI) MRI Perfusion (CPT® 70551 OR CPT® 70552 OR CPT® 70553)[9] include the following:
  - Diagnosis and Characterization of Mass Lesions

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        - Differential diagnosis (tumor versus tumor mimic)
        - Diagnosis of primary neoplasms (may include grading)
        - Surgical planning (biopsy or resection)
        - Targeting locations for biopsy
        - Guiding resection extent
    - Therapeutic follow-up
        - Radiation necrosis versus recurrent or residual tumor
        - Chemonecrosis versus recurrent or residual tumor
        - Pseudoprogression and pseudoresponse
        - Monitor potential transformation of non-resectable low-grade neoplasms to higher grade
    - Assessment of Neurovascular Disease
        - Acute stroke (assessment of ischemic penumbra)
        - Assessment of the hemodynamic significance of cervical or intracranial vascular stenosis
        - Assessment of cervical or intracranial revascularization efficacy
        - Assessment of vasospasm
- Other indications are usually considered not medically necessary.

Magnetic Resonance Neurography (MRN) (HD-24.6)

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- See **Magnetic Resonance Neurography (MRN) (PN-7.1)** in the Peripheral Nerve and Neuromuscular Disorders (PNND) Imaging Guidelines.

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Cone Beam Computed Tomography (CBCT) (HD-24.7)

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- CPT® Codes: CPT® 70486, CPT® 70487, CPT® 70488, CPT® 70480, CPT® 70482 (No separate 3D rendering codes should be reported)
- An alternative to traditional CT imaging is in-office cone beam testing and possible decreased radiation dosage. The indications for office-based CT imaging are the same as for traditional scanners, and they should not be used for diagnosing or managing uncomplicated acute bacterial rhinosinusitis (ABRS).
- See **Temporomandibular Joint Disease (TMJ) (HD-30.1)** and **Dental/Periodontal/ Maxillofacial Imaging (HD-30.2)**

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Evidence Discussion (HD-24)

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- Functional magnetic resonance imaging (fMRI) is useful for localizing eloquent cortex in relation to a focal brain lesion, for pre-surgical planning and therapeutic follow up (ACR, 2022). Overall functional MRI imaging sensitivity is 83% with a specificity of 82%, for mapping language and motor functions (Bizzi et al., 2008). Functional MRI is a useful tool for predicting post-operative outcomes in individuals with a single brain tumor (Kundu et al., 2013). Overall, fMRI studies are used in pre-operative decision making in 89% of tumor individuals and in 91% of epilepsy surgery individuals (Lee et al., 1999; Medina et al., 2005). In 63% of epilepsy individuals undergoing surgical evaluation, fMRI imaging results helped to avoid further studies, including the Wada test (Medina et al., 2005).
- For cases when conventional imaging by magnetic resonance imaging or computed tomography provides limited information regarding specific clinical questions, magnetic resonance spectroscopy (MRS) provides further characterization of brain tumors, radiation treatment changes, cerebral abscess, seizure disorders, and inherited metabolic disorders (ACR 2024; Law, 2004; Weinberg et al., 2021). MRS has a 90% sensitivity and 86% specificity in distinguishing tumoral tissue from non-tumoral tissue (Law, 2004).
- Pulse-gated MRI imaging or MRI CINE is performed as part of an MRI Brain study and allows qualitative and quantitative analysis of oscillatory cerebrospinal fluid (CSF) movement in normal and abnormal conditions (Farb & Rovira, 2020; ACR, 2022). This imaging technique is useful for evaluation of hydrocephalus, Chiari syndromes, Normal Pressure Hydrocephalus, intracranial hypertension, and spontaneous intracranial hypotension (Bradley, 2016; Farb & Rovira, 2020).
- MRI perfusion is useful for the diagnosis and characterization of mass lesions, surgical planning and therapeutic follow-up (ACR, 2022; Petrella & Provenzale, 2000). MR perfusion allows localization of tumor for higher yield on stereotactic biopsy and non-invasive differentiation between radiation necrosis from recurrent tumor when conventional MR findings are equivocal (Petrella & Provenzale, 2000).
- CT perfusion has multiple uses including in stroke diagnosis and treatment planning, characterization of neoplastic disease and response to treatment, and is alternative modality for those with contraindication to MRI-based perfusion imaging (ACR 2022; Powers et al., 2019).
- The American Heart Association/American Stroke Association guidelines for acute stroke management recommended CT perfusion for selecting candidates for mechanical thrombectomy within 24 hours after last known well (Powers et al., 2019).

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References (HD-24)

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1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
2. American College of Radiology. (2022). ACR–AIUM–SPR–SRU practice parameter for the performance of transcranial Doppler ultrasound. https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2022). ACR–SPR–SSR practice parameter for the performance of computed tomography (CT) perfusion in neuroradiologic imaging. https://gravitas.acr.org/PPTS/
4. American College of Radiology. (2022). ACR–SPR–SSR practice parameter for the performance of functional magnetic resonance imaging (fMRI) of the brain. https://gravitas.acr.org/PPTS/
5. American College of Radiology. (2022). ACR–ASNR–SPR practice parameter for the performance of intracranial magnetic resonance perfusion imaging. https://gravitas.acr.org/PPTS/
6. American College of Radiology. (2024). ACR–SPR–SSR practice parameter for the performance and interpretation of magnetic resonance spectroscopy of the central nervous system. https://gravitas.acr.org/PPTS/
7. Antipova, D., Eadie, L., Macaden, A. S., & Wilson, P. (2019). Diagnostic value of transcranial ultrasonography for selecting subjects with large vessel occlusion: A systematic review. *The Ultrasound Journal,* 11(1), Article 14. https://doi.org/10.1186/s13089-019-0143-6
8. AIUM Practice Guideline for the Performance of a Transcranial Doppler Ultrasound Examination for Adults and Children. (2012). *Journal of Ultrasound in Medicine*, 31(9), 1489–1500. https://doi.org/10.7863/jum.2012.31.9.1489
9. Batra, A., Clark, J. R., LaHaye, K., Prasad, A., Menon, D. K., & Helman, J. I. (2021). Transcranial Doppler ultrasound evidence of active cerebral embolization in COVID-19. *Journal of Stroke and Cerebrovascular Diseases,* 30(3), 105542. https://doi.org/10.1016/j.jstrokecerebrovasdis.2020.105542
10. Bizzi, A., Blasi, V., Falini, A., Ferroli, P., Cadioli, M., Danesi, U., Aquino, D., Marras, C., Caldiroli, D., & Broggi, G. (2008). Presurgical functional MR imaging of language and motor functions: Validation with intraoperative electrocortical mapping. *Radiology,* 248(2), 579–589. https://doi.org/10.1148/radiol.2482071214
11. Bradley, W. G. (2016). Magnetic resonance imaging of normal pressure hydrocephalus. *Seminars in Ultrasound, CT and MRI,* 37(2), 120–128. https://doi.org/10.1053/j.sult.2016.01.005
12. Castillo, M., Kwock, L., Scatliff, J., & Mukherji, S. K. (1998). Proton MR spectroscopy in neoplastic and non-neoplastic brain disorders. *Magnetic Resonance Imaging Clinics of North America,* 6(1), 1–20.
13. Connolly, E. S., Rabinstein, A. A., Carhuapoma, J. R., Derdeyn, C. P., Dion, J., Higashida, R. T., Hoh, B. L., Kirkness, C. J., Naidech, A. M., Ogilvy, C. S., Patel, A. B., Thompson, B. G., & Vespa, P. (2012). Guidelines for the management of aneurysmal subarachnoid hemorrhage. *Stroke*, 43(6), 1711–1737. https://doi.org/10.1161/STR.0b013e3182587839
14. Demeestere, J., Wouters, A., Christensen, S., Lemmens, R., & Lansberg, M. G. (2020). Review of perfusion imaging in acute ischemic stroke. *Stroke*, 51(3), 1017–1024. https://doi.org/10.1161/STROKEAHA.119.028337
15. Expert Panel on Pediatric Imaging, Robertson, R. L., Palasis, S., Kadom, N., Aulino, J. M., Bulas, D. I., Lequin, M. H., Nejat, F., & Poretti, A. (2020). ACR Appropriateness Criteria® cerebrovascular disease—Child. Journal of the American College of Radiology, 17(5 Suppl), S36–S54. https://doi.org/10.1016/j.jacr.2020.01.036
16. Farb, R., & Rovira, À. (2020). Hydrocephalus and CSF disorders. In J. Hodler, R. A. Kubik-Huch, & G. K. von Schulthess (Eds.), Diseases of the brain, head and neck, spine 2020–2023: Diagnostic imaging. Springer.
17. Feng, Y., Su, X., Zheng, C., & Lu, Z. (2020). The noninvasive diagnostic value of MR neurography for CIDP: From qualitative to quantitative analysis. *Spine*, 45(21), 1506–1512. https://doi.org/10.1097/BRS.0000000000003599
18. Kundu, B., Penwarden, A., Wood, J. M., Gallagher, T. A., Byrne, R. W., & Noll, D. C. (2013). Association of functional magnetic resonance imaging indices with postoperative language outcomes in patients with primary brain tumors. *Neurosurgical Focus*, 34(4), E6. https://doi.org/10.3171/2013.2.FOCUS12413
19. Lacomis, D., & Gooch, C. (2019). Upper motor neuron assessment and early diagnosis in ALS. Neurology, 92(6), 255–256. https://doi.org/10.1212/WNL.0000000000006867

20. Law, M. (2004). MR spectroscopy of brain tumors. *Topics in Magnetic Resonance Imaging*, 15(5), 291–313. https://doi.org/10.1097/00002142-200410000-00003
21. Lee, C. C., Ward, H. A., Sharbrough, F. W., Meyer, F. B., Marsh, W. R., & Okuno, S. H. (1999). Assessment of functional MR imaging in neurosurgical planning. *American Journal of Neuroradiology*, 20(8), 1511–1519.
22. McGirr, A., Vila-Rodriguez, F., Cole, J., Dowdle, L., Marocchio, M., & Blumberger, D. M. (2021). Efficacy of active vs sham intermittent theta burst transcranial magnetic stimulation for bipolar depression. *JAMA Network Open*, 4(3), e210963. https://doi.org/10.1001/jamanetworkopen.2021.0963
23. Medina, L. S., Bernal, B., Dunoyer, C., Cervantes, L., Rodriguez, M., Pacheco, E., & Jayakar, P. (2005). Seizure disorders: Functional MR imaging for diagnostic evaluation and surgical treatment. *Radiology*, 236(1), 247–253. https://doi.org/10.1148/radiol.2361040690
24. Petrella, J. R., & Provenzale, J. M. (2000). MR perfusion imaging of the brain: Techniques and applications. AJR *American Journal of Roentgenology*, 175, 207–219.
25. Powers, W. J., Rabinstein, A. A., Ackerson, T., Adeoye, O. M., Bambakidis, N. C., Becker, K., … Tirschwell, D. L. (2019). 2019 update to the 2018 guidelines for the early management of acute ischemic stroke. *Stroke*, 50, e344–e418.
26. Purkayastha, S., & Sorond, F. (2012). Transcranial Doppler ultrasound: Technique and application. *Seminars in Neurology*, 32(4), 411–420. https://doi.org/10.1055/s-0032-1331812
27. Rosenfeld, R. M., Piccirillo, J. F., Chandrasekhar, S. S., Brook, I., Ashok Kumar, K., Kramper, M., Orlandi, R. R., Palmer, J. N., Patel, Z. M., Peters, A., Walsh, S. A., Corrigan, M. D., & Robertson, P. J. (2015). Clinical practice guideline (update): Adult sinusitis. *Otolaryngology–Head and Neck Surgery*, 152(2 Suppl), S1–S39. https://doi.org/10.1177/0194599815572097
28. Tsivgoulis, G., & Alexandrov, A. V. (2016). Ultrasound in neurology. *Continuum: Lifelong Learning in Neurology,* 22(5), 1655–1677. https://doi.org/10.1212/CON.0000000000000374
29. Weinberg, B. D., Kuruva, M., Shim, H., & Mullins, M. E. (2021). Clinical applications of magnetic resonance spectroscopy in brain tumors. *Radiologic Clinics of North America,* 59(3), 349–362. https://doi.org/10.1016/j.rcl.2021.01.004

Epistaxis (HD-25)

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Head Imaging Guidelines

Epistaxis (HD-25.1)

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Criteria

- After initial nasal endoscopy by ENT, if there are findings suspicious for a mass lesion, the following imaging is considered medically necessary:
  - CT Maxillofacial without or with contrast (CPT® 70486 or CPT® 70487) **AND/OR**
  - MRI Orbit/Face/Neck without and with contrast (CPT® 70543)
- Individuals who have failed initial management with cauterization and packing and have persistent or recurrent epistaxis despite these primary interventions, should be referred to a clinician who can evaluate the individual for their candidacy for surgical ligation or endovascular embolization.
- Prior to embolization with surgical or endovascular technique, CT Maxillofacial without contrast (CPT® 70486) **OR** CT Maxillofacial with contrast (CPT® 70487) is considered medically necessary when requested by the clinician performing embolization or referring for embolization.
  - If endovascular embolization is planned, the following studies are considered medically necessary ahead of the interventional radiologic procedure:
    - CTA Head (CPT® 70496) OR
    - CTA Neck (CPT® 70498)
      - CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session.

Background and Supporting Information

The American Academy of Otolaryngology Head and Neck Surgery recommended, in its most recent 2020 Clinical Practice Guidelines on Epistaxis, that the clinician should perform, or should refer to a clinician who can perform, nasal endoscopy to identify the site of bleeding and guide further management in individuals with recurrent nasal bleeding, despite prior treatment with packing or cautery, or with recurrent unilateral nasal bleeding. No recommendations for advanced imaging are outlined in this guideline without the exam findings (anterior rhinoscopy and/or nasal endoscopy) or the procedural needs of the individual indicating the need for such studies. If anterior rhinoscopy does not reveal the source of bleeding, it is recommended that the clinician perform nasal endoscopy or refer to a clinician who can perform nasal endoscopy, first.

Embolization procedures have shown an average nosebleed control rate of 87%, with minor transient complications in 20% (transient nasal ischemia, temporal-facial pain or numbness, headache, swelling, jaw claudication, trismus, and access site complications

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not requiring additional therapy) and major complications in up to 2.1% to 3.8% (skin/nasal necrosis, permanent facial nerve paralysis, monocular blindness, and stroke).

Detailed angiography, including internal and external carotid angiography, and precise embolization techniques are required. Despite use of meticulous techniques and knowledge of external carotid-internal carotid anastomoses, blindness and stroke are the most feared complications of endovascular embolization. These complications are rare but are more frequent than in individuals undergoing surgical arterial ligation. In one study, similar transient ischemic attacks are demonstrated across all groups but there is increased risk of stroke in the groups who underwent endovascular embolization alone (0.9%) or combined with surgical ligation (1.6%) as compared with surgical ligation alone (0.1%).

Evidence Discussion (HD-25)

- The American Academy of Otolaryngology - Head & Neck Surgery (AAO-HNS) recommendeds, in its most recent 2020 Clinical Practice Guidelines on Epistaxis, that the clinician should perform, or should refer to a clinician who can perform, nasal endoscopy to identify the site of bleeding and to guide further management in individuals with recurrent nasal bleeding despite prior treatment with packing or cautery, or with recurrent unilateral nasal bleeding. No recommendations for advanced imaging are outlined in this AAO-HNS Guideline without the exam findings (anterior rhinoscopy and/or nasal endoscopy) or the procedural needs of the individual, directing the need for such studies. If anterior rhinoscopy does not reveal the source of bleeding, it is recommended that the clinician perform nasal endoscopy or refer to a clinician who can perform nasal endoscopy (Tunkel et al., 2020).
- Further characterization of any mass lesions suspected on initial nasal endoscopy may be evaluated with CT Maxillofacial, either with OR without contrast (CPT® 70487 or CPT® 70486), AND/OR MRI Orbit, Face, and/or Neck without and with contrast (CPT® 70543) (Expert Panel on Neurologic Imaging et al., 2017; ACR, 2021).
- Because of the risks involved in embolization procedures (blindness, stroke, and others), CT or MRI imaging is supported prior to any planned intervention (Strach et al., 2011).
- Embolization procedures have shown an average nosebleed control rate of 87%, with minor transient complications in 20% (transient nasal ischemia, temporal-facial pain or numbness, headache, swelling, jaw claudication, trismus, and access site complications not requiring additional therapy) and major complications in up to 2.1% to 3.8% (skin/nasal necrosis, permanent facial nerve paralysis, monocular blindness, and stroke) (Strach et al., 2011; Brinjiji et al., 2013).

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References (HD-25)

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1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
2. Brinjikji, W., Kallmes, D. F., & Cloft, H. J. (2013). Trends in epistaxis embolization in the United States: A study of the Nationwide Inpatient Sample 2003–2010. *Journal of Vascular and Interventional Radiology*, 24(7), 969–973. https://doi.org/10.1016/j.jvir.2013.02.035
3. Expert Panel on Neurologic Imaging, Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Burns, J., Corey, A. S., Flanders, A. E., Hunt, C. H., Hudgins, P. A., Kotsenas, A. L., Phillips, C. D., Policeni, B. A., & Shah, L. M. (2017). ACR Appropriateness Criteria® sinonasal disease. *Journal of the American College of Radiology*, 14(11, Suppl), S550–S559. https://doi.org/10.1016/j.jacr.2017.08.041
4. Kuan, E. C., Wang, E. W., Adappa, N. D., Palmer, J. N., Chiu, A. G., Lee, J. T., Sargi, Z., Eloy, J. A., Oyesiku, N. M., Snyderman, C. H., Hanna, E. Y., Rinaldo, A., Ferlito, A., & International Consensus Statement Working Group. (2024). International consensus statement on allergy and rhinology: Sinonasal tumors. *International Forum of Allergy & Rhinology*, 14(2), 149–608. https://doi.org/10.1002/alr.23262
5. Strach, K., Schröck, A., Wilhelm, K., Helmberger, T., Wagenpfeil, S., Reiser, M. F., & Hoffmann, R. T. (2011). Endovascular treatment of epistaxis: Indications, management, and outcome. *Cardiovascular and Interventional Radiology*, 34(6), 1190–1198. https://doi.org/10.1007/s00270-011-0155-5
6. Tunkel, D. E., Anne, S., Payne, S. C., Ishman, S. L., Rosenfeld, R. M., Abramson, P. J., Brandt, M. G., DeConde, A. S., Phillips, C. D., Walsh, S. A., Schwartz, S. R., & Corrigan, M. D. (2020). Clinical practice guideline: Nosebleed (epistaxis). *Otolaryngology–Head and Neck Surgery*, 162(1, Suppl), S1–S38. https://doi.org/10.1177/0194599819890327

Mastoid Disease or Ear Pain (HD-26)

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Head Imaging Guidelines

Mastoid Disease or Ear Pain (HD-26.1)

HD.MA.026.1.A
v1.0.2027

Criteria

A pertinent clinical evaluation including a detailed history, physical examination (including otoscopic examination), must be performed on any individual with ear pain prior to considering advanced imaging. Common causes of ear pain include external and middle ear infections, dental problems, sinus infection, neck problems, tonsillitis, and pharyngitis.

Indications (Any one of the following)	Medically Necessary Imaging
• Persistent ear pain without obvious cause • Clinical suspicion for complicated or invasive infection such as mastoiditis • Clinical suspicion for complications from otitis media • Clinical suspicion of mass lesion causing ear pain • Significant trauma with concern for hematoma formation • Pre-operative planning • (For additional imaging requirements for cholesteatoma surgery, see bullet below) • (For skull base osteomyelitis, see **Skull Base Osteomyelitis (SBO) (HD-20.2)**)	• CT Orbits/Temporal Bone without contrast (CPT® 70480) **OR** • CT Orbits/Temporal Bone without and with contrast (CPT® 70482) **OR** • MRI Brain without and with contrast with attention to internal auditory canals (CPT® 70553) **OR** • MRI Orbits/Face/Neck without and with contrast (CPT® 70543)

- Advanced imaging is considered not medically necessary in the overwhelming majority of individuals with ear pain.
- The following imaging is considered medically necessary for **pre-operative evaluation** for cholesteatoma surgery when ordered by an otolaryngologist or in consultation with the otolaryngologist:
  - CT Orbits/Temporal Bone without contrast (CPT® 70480) **OR**
  - CT Orbits/Temporal Bone without and with contrast (CPT® 70482)

  AND/OR

  - MRI Brain without and with contrast with attention to internal auditory canals (CPT® 70553) **OR**
  - MRI Internal Auditory Canal: (IAC) MRI can be reported as a limited study with one code from the set (CPT® 70540, CPT® 70542, or CPT® 70543), but should not be used in conjunction with MRI Brain codes (CPT® 70551, CPT® 70552, or CPT® 70553) if IAC views are performed as part of the brain.
- The following imaging is considered medically necessary one time **post-operatively** to exclude residual or regrown cholesteatoma to avoid the need for a second-look surgery when ordered by an otolaryngologist or in consultation with the otolaryngologist:
  - CT Orbits/Temporal Bone without contrast (CPT® 70480) **AND/OR**
  - MRI Brain without and with contrast with attention to internal auditory canals (CPT® 70553), **OR**
  - MRI Internal Auditory Canal: (IAC) MRI can be reported as a limited study with one code from the set (CPT® 70540, CPT® 70542, or CPT® 70543), but should not be used in conjunction with MRI Brain codes (CPT® 70551, CPT® 70552, or CPT® 70553 if IAC views are performed as part of the brain
- Eustachian Tube Dilation: (endoscopic balloon dilatation of the Eustachian Tube, to treat persistent Eustachian tube dysfunction)
  - CT Orbit/Temporal Bone without contrast (CPT® 70480) is considered medically necessary for pre-operative evaluation of possible aberrant carotid.
- Concern for petrous apex lesions when requested by the otolaryngologist or in consultation with the otolaryngologist, the following are considered medically necessary:
  - CT Orbit/Temporal bone without contrast (CPT® 70480) **OR**
  - CT Orbit/Temporal bone without and with contrast (CPT® 70482) **AND/OR**
  - MRI Brain without and with contrast (CPT® 70553) **OR**
  - MRI Internal Auditory Canal: (IAC) MRI can be reported as a limited study with one code from the set (CPT® 70540, CPT® 70542, or CPT® 70543), but should not be used in conjunction with MRI Brain codes (CPT® 70551, CPT® 70552, or CPT® 70553 if IAC views are performed as part of the brain
- For concern related to non-resolving otalgia with chronic otorrhea:
  - See **Skull Base Osteomyelitis (SBO) (HD-20.2)**

Background and Supporting Information

- Common causes of ear pain include external and middle ear infections, dental problems, sinus infection, neck problems, and referred pain from the oral pharynx.

- Clinical suspicion for complications from otitis media such as coalescent mastoiditis, resulting in: subperiosteal abscess formation/Bezold's abscess, acute facial nerve paralysis, and intracranial abscess formation.
- Cholesteatomas are expansive cysts of the middle ear filled with cellular debris. They can be congenital or arise from recurrent middle ear infections or trauma to the tympanic membrane. Hearing loss is usually conductive, although if the lesion is large enough combined conductive and sensorineural hearing loss may be present. Otoscopic exam findings and symptoms may include a white mass in the middle ear cleft, painless drainage from the ear or chronic/recurrent ear infections.
- Petrous apex lesions/infections may include: cholesteatoma, cephalocele, mucocele, and cholesterol granuloma and can present with symptoms of pain, hearing loss, headache, vertigo, and Cranial nerve insults (including CN V VI, VII, IX, X, XI).

Evidence Discussion (HD-26)

- Contrast enhanced CT is commonly used for evaluation of head and neck infections due to its accessibility and short examination time. MRI provides better sensitivity of soft tissue infections in the setting of cholesteatoma, when there is concern for abscess formation or intracranial complications (Baba et al., 2023).

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References (HD-26)

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1. Agarwal, M., Juliano, A. F., Hagiwara, M., Policeni, B. A., Corey, A. S., Burns, J., Kirsch, C. F. E., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., Shah, L. M., & Expert Panel on Neurologic Imaging. (2024). ACR Appropriateness Criteria® inflammatory ear disease. *American College of Radiology*. https://acsearch.acr.org/docs/3195157/Narrative/
2. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
3. Baba, A., Kurokawa, R., Kurokawa, M., Reifeiss, S., Policeni, B. A., Ota, Y., & Srinivasan, A. (2023). Advanced imaging of head and neck infections. *Journal of Neuroimaging*, 33(4), 477–492. https://doi.org/10.1111/jon.13099
4. Micucci, S., Keschner, D. B., & Liang, J. (2018). Eustachian tube balloon dilation: Emerging practice patterns for a novel procedure. *Annals of Otology, Rhinology & Laryngology*, 127(11), 848–855. https://doi.org/10.1177/0003489418798858
5. Potter, G. M., & Siripurapu, R. (2021). Imaging of petrous apex lesions. *Neuroimaging Clinics of North America*, 31(4), 523–540. https://doi.org/10.1016/j.nic.2021.06.005
6. Rosenfeld, R. M., Shin, J. J., Schwartz, S. R., Coggins, R., Gagnon, L., Hackell, J. M., Hoelting, D., Hunter, L. L., Kummer, A. W., Levine, S. C., Lieberthal, A. S., Lindgren, B., Meissner, H. C., Poe, D. S., Roland, P. S., Simon, G. R., Wallace, I. F., Walsh, S. A., Corrigan, M. D., & Cunningham, E. R. (2016). Clinical practice guideline (update): Otitis media with effusion. *Otolaryngology–Head and Neck Surgery*, 154(1, Suppl), S1–S41. https://doi.org/10.1177/0194599815623467
7. Treviño González, J. L., Reyes Suárez, L. L., & Hernández de León, J. E. (2021). Malignant otitis externa: An updated review. *American Journal of Otolaryngology*, 42(2), 102894. https://doi.org/10.1016/j.amjoto.2020.102894
8. Tucci, D. L., McCoul, E. D., Rosenfeld, R. M., Tunkel, D. E., Batra, P. S., Chandrasekhar, S. S., Cordes, S. R., Eshraghi, A. A., Kaylie, D., Lal, D., Lee, J. T., Setzen, M., Sindwani, R., Syms, C. A., III, Bishop, C., Poe, D. S., Corrigan, M. D., & Lambie, E. (2019). Clinical consensus statement: Balloon dilation of the Eustachian tube. *Otolaryngology–Head and Neck Surgery*, 161(1), 6–17. https://doi.org/10.1177/0194599819848423

Hearing Loss and Tinnitus (HD-27)

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Hearing Loss (HD-27.1)

HD.HL.0027.1.A
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Criteria

- An initial evaluation including hearing tests, by bedside testing or by formal audiology, is necessary to determine whether an individual's hearing loss is conductive (external or middle ear structures) or sensorineural (inner ear structures, such as cochlea or auditory nerve) hearing loss. See **General Guidelines (HD-1.0)**
- CT Orbits/Temporal Bone without (CPT® 70480) **OR** MRI Brain without and with contrast (with IAC views) (CPT® 70553) **OR** MRI Brain without contrast (CPT® 70551) is considered medically necessary for the following:
  - Mixed conductive (MC)/Sensorineural (SN) hearing loss or any sensorineural hearing loss (MRI generally preferred for SN - See *Background and Supporting Information*)
  - Unilateral fluctuating or asymmetric hearing loss
  - Cholesteatoma (see **Mastoid Disease or Ear Pain (HD-26.1)**)
  - Congenital hearing loss
  - Surgical planning, including cochlear implants (both CT Temporal Bone and MRI Brain for surgical planning if requested by surgeon or any provider in consultation with the surgeon)
  - Hearing loss with vertigo (see **Dizziness/Vertigo (HD-23.1)**)
- CT Orbits/Temporal Bone without contrast (CPT® 70480) is considered medically necessary for the following:
  - Conductive hearing loss should have a CT Temporal Bone initially in the absence of an evident mass in the middle ear
- CT Orbits/Temporal Bone with contrast (CPT® 70481) is considered medically necessary for the following:
  - Glomus tumors or other vascular tumors of the middle ear, and/or surgical planning
  - Acquired sensorineural hearing loss if MRI unavailable or contraindicated
- Limited MRI of the internal auditory canals (CPT® 70540, CPT® 70542, or CPT® 70543) is considered medically necessary when requested by the provider in place of a complete MRI Brain. Note: Limited MRI codes should not be used in addition to MRI Brain codes; IAC views are performed as additional sequences as part of the brain study (see **General Guidelines – Anatomic Issues (HD-1.1)**)
- FIESTA protocol can be performed with MRI Brain without contrast (CPT® 70551) or limited MRI with attention to internal auditory canals.

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Background and Supporting Information

- Sensorineural (SN) hearing loss – MRI is generally preferable to CT. CT Temporal bone is considered medically necessary in post-traumatic SN hearing loss, to evaluate for bony remodeling of the IAC due to vestibular schwannoma and labyrinthine ossification resulting from prior infection and for consideration of otospongiosis, a common cause of MC and SN hearing loss.

Evidence Discussion (HD-27.1)

- A complete history and otologic exam should be performed prior to advanced imaging for the workup of hearing loss. Formal audiometric testing is also necessary to determine whether the hearing loss is conductive, sensorineural, or mixed (Chandrasekar et al., 2019; Tunkel et al., 2014).
- MRI brain is generally preferred for sensorineural and mixed hearing loss, particularly for unilateral hearing loss, congenital loss, or for surgical planning (Sharma et al. 2018, ACR 2021, Jain et al.2023)
- CT orbits/temporal bone is preferred for cases of conductive hearing loss, trauma, or suspected bony or middle ear disorders (Sharma et al. 2018, ACR 2021, Jain et al.2023).
- Both may be supported for surgical planning (cochlear implants, petrous apex disorders). (Sharma et al. 2018, ACR 2021, Jain et al.2023).
- 3D-Fast imaging employing steady state acquisition (3D-FIESTA) demonstrates significantly higher spatial resolution with superior imaging contrast between cranial nerves and CSF with a shorter acquisition time than conventional MRI scan (Zou & Hirvonen, 2017).

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Tinnitus (HD-27.2)

HD.HL.0027.2.A
v1.0.2027

Criteria

- A hearing evaluation is not required prior to imaging for tinnitus.
- The history in individuals with tinnitus should include a description of the tinnitus (episodic or constant, pulsatile or non-pulsatile, rhythmicity, pitch, quality of the sound), as well as inciting or alleviating factors. Continuous and pulsatile tinnitus are more concerning for an underlying and significant disorder. Audiometric assessment can be used as initial diagnostic testing particularly in individuals with tinnitus that is unilateral, persistent (>6 months) or associated with hearing difficulties (see **General Guidelines (HD-1.0)**)

Indications (Any one of the following)	Medically Necessary Imaging
• Clinical suspicion of mass lesion causing tinnitus • Asymmetric or unilateral non-pulsatile tinnitus (i.e., tinnitus that localizes to one ear) • Tinnitus associated with focal neurologic abnormalities, including asymmetric hearing loss • Persistent tinnitus after recent significant trauma. • Pulsatile tinnitus with or without concern for vascular lesion	• CT Orbits/Temporal Bone without contrast (CPT® 70480) **OR** • CT Orbits/Temporal Bone without and with contrast (CPT® 70482) **OR** • MRI Brain without and with contrast with attention to internal auditory canals (CPT® 70553) **OR** • MRI Brain without contrast with attention to internal auditory canals (CPT® 70551) **OR** • MRI Orbits/Face/Neck without contrast (CPT® 70540), with contrast CPT® 70542, or without and with contrast (CPT® 70543)
• Pulsatile tinnitus • Suspicion for vascular lesions	• MRA Head (CPT® 70544, CPT® 70545 OR CPT® 70546) **OR** • CTA Head (CPT® 70496) **AND/OR** • MRA Neck (CPT® 70547, CPT® 70548 or CPT® 70549) **OR** • CTA Neck (CPT® 70498) ◦ CTA Head and Neck (CPT® 70471) must be substituted if performed during the same session,

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- Imaging is considered not medically necessary for bilateral non-pulsatile tinnitus without other neurologic signs or symptoms
- Limited MRI of the internal auditory canals (CPT® 70540, CPT® 70542, or CPT® 70543) is considered medically necessary when requested by the provider in place of a complete MRI Brain. Note: Limited MRI codes should not be used in addition to MRI Brain codes; IAC views are performed as additional sequences as part of the brain study (see **General Guidelines – Anatomic Issues (HD-1.1)**)
- CT and MR Venography (CTV and MRV) are reported with the same codes as the CTA/MRA counterpart. If arterial and venous CT or MR studies are both performed in the same session, only one CPT® code should be used to report both procedures.

Background and Supporting Information

- Non-pulsatile tinnitus may be described as ringing, buzzing, or clicking sensations which is constant and non-synchronous.
- Pulsatile tinnitus is a repetitive sound coinciding with the individual's heartbeat. The symptom may be subjective or objective.

Evidence Discussion (HD-27.2)

- A targeted history and clinical examination should be performed as the initial evaluation of an individual with tinnitus and determination as to whether the tinnitus is bothersome or not should be made before any imaging is considered (Chandrasekhar et al., 2019; Tunkel et al., 2014).
- Both MRI and CT have utility in diagnosing the etiology of tinnitus, particularly for concerns of mass lesions, or for tinnitus in conjunction with hearing loss or trauma (Expert Panel on Neurologic Imaging et al., 2018; ACR, 2021; Expert Panel on Neurologic Imaging et al., 2023).
- MRA or CTA of the head and neck are also useful in the workup of pulsatile tinnitus or for suspicion of a vascular lesion(Expert Panel on Neurologic Imaging et al., 2018; ACR, 2021; Expert Panel on Neurologic Imaging et al., 2023).

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References (HD-27)

v1.0.2027

1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
2. Chandrasekhar, S. S., Do, B. S. T., Schwartz, S. R., Bontempo, L. J., Faucett, E. A., Finestone, S. A., Hollingsworth, D. B., Kelly, M. M., Lal, D., Mackey, M. L., Malekzadeh, S., Mener, D. J., Nnacheta, L. C., O'Connor, R., Russell, P. T., Sun, G. H., Tunkel, D. E., Walsh, S. A., Wareing, M. J., & Corrigan, M. D. (2019). Clinical practice guideline (update): Sudden hearing loss. *Otolaryngology–Head and Neck Surgery*, 161(1, Suppl), S1–S45. https://doi.org/10.1177/0194599819859885
3. Expert Panel on Neurologic Imaging, Jain, V., Policeni, B. A., Corey, A. S., Burns, J., Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2023). ACR Appropriateness Criteria® tinnitus. *American College of Radiology.* https://acsearch.acr.org/docs/3094199/Narrative/
4. Expert Panel on Neurologic Imaging, Sharma, A., Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Burns, J., Corey, A. S., Flanders, A. E., Hunt, C. H., Hudgins, P. A., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2018). ACR Appropriateness Criteria® hearing loss and/or vertigo. Journal of the American College of Radiology, 15(11, Suppl), S321–S331. https://doi.org/10.1016/j.jacr.2018.09.020
5. Isaacson, J., & Vora, N. M. (2003). Differential diagnosis and treatment of hearing loss. *American Family Physician,* 68(6), 1125–1132.
6. Tunkel, D. E., Bauer, C. A., Sun, G. H., Rosenfeld, R. M., Chandrasekhar, S. S., Cunningham, E. R., Archer, S. M., Blakley, B. W., Carter, J. M., Granieri, E. C., Henry, J. A., Hollingsworth, D. B., Khan, F. A., Mitchell, S., Monfared, A., Newman, C. W., Omole, F. S., Phillips, C. D., Robinson, S. K., … Whamond, E. J. (2014). Clinical practice guideline: Tinnitus executive summary. *Otolaryngology–Head and Neck Surgery*, 151(4), 533–541. https://doi.org/10.1177/0194599814547475
7. Zou, J., & Hirvonen, T. (2017). "Wait and scan" management of patients with vestibular schwannoma and the relevance of non-contrast MRI in the follow-up. *Journal of Otology*, 12(4), 174–184. https://doi.org/10.1016/j.joto.2017.08.002

Neurosurgical Imaging (HD-28)

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Neurosurgical Imaging (HD-28.1)

HD.NI.0028.1.A
v1.0.2027

Criteria

- Typically, advanced imaging for monitoring disease for mass lesions occurs after biopsy (histologic) confirmation. This ensures appropriate determination related to phase of oncology imaging and alignment to appropriate diagnosis-specified guideline section.
  - However, repeat imaging by neurosurgeons or others of the management team for areas of the central nervous system (CNS) where permanent neurologic damage would be excessive with even a limited biopsy attempt is considered medically necessary.
  - Examples would include, but are not exclusive to: medically fragile individual, and tumors of the brainstem, eloquent areas of the brain, deep gray matter areas of the brain (ex. thalamus), and cavernous sinus.
- Repeat diagnostic head imaging is considered medically necessary when:
  - previous diagnostic head imaging is determined to be inadequate or additional imaging sequences/protocols are required by the neurosurgeon or the treatment team
  - prior imaging is greater than 6 months old

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Neuronavigation (HD-28.2)

HD.NI.0028.2.A
v1.0.2027

Criteria

- Neurosurgical navigation is “image-based” meaning that the necessary pre-operative CT and MRI images are used for navigation in the operating room (image acquisition). Accurate registration (a process to match the pre-operative images to the individual position) of pre-operative images is necessary to guide surgery regardless of the navigation system that is used. Registration can be point-based or surface matched routines to allow the surgeon to view the overlapping data sets and the current situation to allow navigation.
- The process of registration for neuronavigation via the acquisition of pre-operative CT and MRI images does not require a radiologist interpretation.
  - Diagnostic imaging codes are considered not medically necessary for the purpose of registration for neuronavigation.
  - Can be referenced by proprietary brand systems such as Brainlab or Stealth imaging procedures
  - See **Unlisted Procedures/Therapy Treatment Planning (Preface-4.3)** in the Preface Imaging Guidelines and **Unlisted Procedure Codes (ONC-1.5)** in Oncology in the Oncology Imaging Guidelines
- Advanced imaging for neuronavigation (image acquisition for registration for surgery) is considered medically necessary with one of each of the following as unlisted codes apply:
  - Unlisted MRI procedure code (CPT® 76498)
  - Unlisted CT procedure code (CPT® 76497)
  - Due to variances with techniques currently available for neuronavigation, the following are considered medically necessary:
    - CTA or MRA Head and Neck vessels for surgical planning and neuronavigation, see **General Guidelines – CT and MR Angiography (HD 1.5)**.
    - 3D (CPT® 76377 or CPT® 76376) (see **General Guidelines – Other Imaging Situations (HD-1.7)**)
  - Diagnostic imaging codes are only considered medically necessary if radiological supervision and interpretation of imaging is necessary with supporting documentation
    - MRI Brain without contrast (CPT® 70551) **OR** MRI Brain with contrast (CPT® 70552) **OR** MRI Brain without and with contrast (CPT® 70553) (contrast as requested) **AND/OR** CT Head without contrast (CPT® 70450) **OR** CT Head with

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contrast (CPT® 70460) **OR** CT Head without and with contrast (CPT® 70470) (contrast as requested)

- AI-powered connectomic analysis of the brain may be ordered as CPT® 1039T.
  - These studies lack sufficient specificity and sensitivity to be clinically useful. Their use is limited to research studies and are considered experimental and investigational.

Head Imaging Guidelines

Post-Operative Imaging (HD-28.3)

HD.NI.0028.3.A
v1.0.2027

Criteria

- Post-operative imaging including MRI Brain without contrast (CPT® 70551), or MRI Brain with contrast (CPT® 70552), or MRI Brain without and with contrast (CPT® 70553) (contrast as requested) or CT Head without contrast (CPT® 70450), or CT Head with contrast (CPT® 70460), or CT Head without and with contrast (CPT® 70470) (contrast as request) is considered medically necessary per neurosurgeon's or in concert with management team's request that includes, but not exclusive to the following indications:
  - Within 24-72 hours following brain surgery including to document the need for repeat surgery or if adjuvant intervention is necessary, concern or rule out for complication(s), evaluation if incomplete resection vs. consideration for plan for gross resection
  - Signs or symptoms indicating concern of clinical deterioration
  - Development of new neurological signs or symptoms
  - Follow-up on blood products, edema, and/or concern of cerebrospinal fluid leak
  - Follow- up imaging per condition-based guideline
- See additional condition-based guidelines:
  - Pediatric Neurosurgeries
    - See **Special Imaging Studies in Evaluation for Epilepsy Surgery (PEDHD-6.3)** in the Pediatric Head Imaging Guidelines
    - See **Modality General Considerations (PEDONC-1.3)** and **Pediatric CNS Tumors (PEDONC-4)** in the Pediatric and Special Populations Oncology Guidelines
  - Epilepsy
    - See **Perioperative Evaluations for Drug-Resistant Epilepsy (HD-9.2)**
  - Movement Disorders
    - See **Movement Disorders (HD-15.1)**
  - Pituitary or Sella Surgery
    - See **Pituitary (HD-19.1)**
  - Acoustic Neuroma and Other Cerebellopontine Angle Tumors
    - See **Acoustic Neuroma and Other Cerebellopontine Angle Tumors (HD-33.1)**
  - Central Nervous System Tumors

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- See **Primary Central Nervous System Tumors (ONC-2)** and **Brain Metastases (ONC-31.3)** in the Oncology Imaging Guidelines

Head Imaging Guidelines

Evidence Discussion (HD-28)

v1.0.2027

- Imaging modalities for neurosurgical planning include MRI Brain and CT Head, along with vascular imaging.
- MRI Brain is the preferred modality for the evaluation of intracranial neoplasms and other conditions affecting the brain parenchyma, meninges or cranium, due to its superior soft tissue resolution when compared to CT Head (ACR, 2024).
- CT Head is the preferred modality for evaluation of bony structures in the pre-operative setting (ACR, 2020c).
- For localization of relevant vascular anatomy prior to surgery, MRI Angiography (MRA) head and neck or CT Angiography (CTA) head and neck, may be appropriate (ACR 2024, ACR 2020b).
- Pre-surgical navigational imaging, whether by CT or MRI, allows a spatially accurate anatomical individual model for use in the treatment-planning process (Orringer et al., 2012; ACR, 2021b).
- The requirements for surgical planning images differ from the requirements for diagnostic images, especially regarding the spatial accuracy of the images in the stereotactic coordinates used for localization and targeting (Orringer et al., 2012; ACR, 2021b).
- Navigation based on an immediate pre-operative scan optimizes the accuracy of data used for initial surgical planning (Orringer et al., 2021). Navigation systems reduce length of surgery, lower incidence of wound infection and shorten length of post-operative hospital stay (Khoshnevisan & Allahabadi, 2012).
- For post-operative imaging, CT Head is also useful for follow-up of intracranial hemorrhage, edema, hydrocephalus, shunts, and general post-operative follow-up. CT Head has the benefit of providing rapid evaluation if a post-operative complication is suspected (ACR, 2024). Post-operative MRI Brain provides superior soft tissue resolution in less urgent scenarios (ACR, 2020c).

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References (HD-28)

v1.0.2027

1. American College of Radiology. (2020a). ACR–ASNR–SNIS–SPR practice parameter for the performance of cervicocerebral magnetic resonance angiography (MRA). https://gravitas.acr.org/PPTS/
2. American College of Radiology. (2020b). ACR–ASNR–SPR practice parameter for the performance and interpretation of cervicocerebral computed tomography angiography (CTA). https://gravitas.acr.org/PPTS/
3. American College of Radiology. (2020c). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the head. https://gravitas.acr.org/
4. American College of Radiology. (2021b). ACR–ARS practice parameter for the performance of brain stereotactic radiosurgery. https://gravitas.acr.org/PPTS/
5. American College of Radiology. (2021a). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
6. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
7. Delev, D., Quesada, C. M., Grote, A., Urbach, H., Wolff, S., Roland, J., Schaller, K., Zentner, J., Schulze-Bonhage, A., & Weckesser, M. (2018). A multimodal concept for invasive diagnostics and surgery based on neuronavigated voxel-based morphometric MRI postprocessing data in previously nonlesional epilepsy. *Journal of Neurosurgery*, 128(4), 1178–1186. https://doi.org/10.3171/2016.12.JNS161676
8. Fitzpatrick, J. M. (2010). The role of registration in accurate surgical guidance. Proceedings of the Institution of Mechanical Engineers, Part H: *Journal of Engineering in Medicine*, 224(5), 607–622. https://doi.org/10.1243/09544119JEIM589
9. Grunert, P., Darabi, K., Espinosa, J., & Filippi, R. (2003). Computer-aided navigation in neurosurgery. *Neurosurgical Review,* 26(2), 73–99. https://doi.org/10.1007/s10143-003-0262-0
10. Gumprecht, H. K., Widenka, D. C., & Lumenta, C. B. (1999). Brain Lab VectorVision neuronavigation system: Technology and clinical experiences in 131 cases. *Neurosurgery*, 44(1), 97–104. https://doi.org/10.1097/00006123-199901000-00056
11. Kelly, P. J., Kall, B. A., & Goerss, S. J. (1988). Results of computed tomography–based computer-assisted stereotactic resection of metastatic intracranial tumors. *Neurosurgery,* 22(1), 7–17. https://doi.org/10.1227/00006123-198801000-00002
12. Khoshnevisan, A., & Allahabadi, N. S. (2012). Neuronavigation: Principles, clinical applications and potential pitfalls. *Iranian Journal of Psychiatry*, 7(2), 97–103.
13. Kotecha, R., Sahgal, A., Rubens, M., Brada, M., Leng, L., Lee, C. C., Mathieu, D., Paddick, I., Pollock, B. E., Sahgal, A., Schröttner, O., Sheehan, J. P., Tischler, V., Xu, Z., & Zadeh, G. (2019). Stereotactic radiosurgery for non-functioning pituitary adenomas: A meta-analysis and International Stereotactic Radiosurgery Society practice opinion. *Neuro#Oncology*, 22(3), 318–332. https://doi.org/10.1093/neuonc/noz225
14. Maciunas, R. J. (2006). Computer-assisted neurosurgery. *Clinical Neurosurgery,* 53, 267–271.
15. Magnani, M., Rustici, A., Zoli, M., Tuleasca, C., Chaurasia, B., Franceschi, E., Tonon, C., Lodi, R., & Conti, A. (2024). Connectome-Based Neurosurgery in Primary Intra-Axial Neoplasms: Beyond the Traditional Modular Conception of Brain Architecture for the Preservation of Major Neurological Domains and Higher-Order Cognitive Functions. *Life (Basel, Switzerland)*, 14(1), 136. https://doi.org/10.3390/life14010136
16. Maurer, C. R., Jr., Fitzpatrick, J. M., Wang, M. Y., Galloway, R. L., Jr., Maciunas, R. J., & Allen, G. S. (1997). Registration of head volume images using implantable fiducial markers. *IEEE Transactions on Medical Imaging*, 16(4), 447–462. https://doi.org/10.1109/42.611354
17. Mezger, U., Jendrewski, C., & Bartels, M. (2013). Navigation in surgery. *Langenbeck's Archives of Surgery*, 398(4), 501–514. https://doi.org/10.1007/s00423-013-1059-4
18. Omay, S. B., & Barnett, G. H. (2010). Surgical navigation for meningioma surgery. Journal of Neuro-Oncology, 99(3), 357–364. https://doi.org/10.1007/s11060-010-0359-6 Orringer, D. A., Golby, A., & Jolesz, F. (2012). Neuronavigation in the surgical management of brain tumors: Current and future trends. *Expert Review of Medical Devices,* 9(5), 491–500. https://doi.org/10.1586/erd.12.42

19. Pfisterer, W. K., Papadopoulos, S. M., Drumm, D. A., Smith, K., & Preul, M. C. (2008). Fiducial versus nonfiducial neuronavigation registration: Assessment and considerations of accuracy. *Operative Neurosurgery*, 62(Suppl 1), ONS201–ONS208. https://doi.org/10.1227/01.neu.0000317394.14303.99
20. Rughani, A., Schwalb, J. M., Sidiropoulos, C., Pilitsis, J. G., Ramirez-Zamora, A., Okun, M. S., Foote, K. D., & Turner, D. A. (2018). Congress of Neurological Surgeons systematic review and evidence-based guideline on subthalamic nucleus and globus pallidus internus deep brain stimulation for Parkinson's disease: Executive summary. *Neurosurgery,* 82(6), 753–756. https://doi.org/10.1093/neuros/nyy037
21. Wang, M. Y., Maurer, C. R., Jr., Fitzpatrick, J. M., & Maciunas, R. J. (1996). An automatic technique for finding and localizing externally attached markers in CT and MR volume images of the head. *IEEE Transactions on Biomedical Engineering,* 43(6), 627–637. https://doi.org/10.1109/10.495282
22. Xiao, Y., Lau, J. C., Hemachandra, D., Gilmore, G., Khan, A. R., & Peters, T. M. (2021). Image guidance in deep brain stimulation surgery to treat Parkinson's disease: A comprehensive review. *IEEE Transactions on Biomedical Engineering, 6*8(3), 1024–1033. https://doi.org/10.1109/TBME.2020.3006765
23. Yang, I., Udawatta, M., Prashant, G. N., Whyte, J., & Berger, M. S. (2019). Stereotactic radiosurgery for neurosurgical patients: A historical review and current perspectives. *World Neurosurgery*, 122, 522–531. https://doi.org/10.1016/j.wneu.2018.10.193

Head Imaging Guidelines

Sinus and Facial Imaging (HD-29)

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Sinus and Facial Imaging (HD-29.1)

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- CT Maxillofacial without contrast (CPT® 70486) or limited CT Sinus without contrast (CPT® 76380) is medically necessary for ANY of the following:
  - Acute sinusitis without resolution of symptoms after a minimum of 4 weeks of treatment (treatment can include an appropriate course and duration of empiric oral antibiotic, topical intranasal steroid, and/or nasal saline rinses.)
  - Concern for potential or suspected complicated sinusitis, which is sinusitis with actual or threatened orbital or intracranial extension
  - Recurrent sinusitis (4 or more episodes of acute bacterial rhinosinusitis within the past 12 months without symptoms or signs between episodes)
    - In practice, recurrent acute exacerbations of chronic rhinosinusitis are seen as well as recurrent acute rhinosinusitis with disease free intervals between the acute episodes. CT Maxillofacial without contrast (CPT® 70486) may still be medically necessary under chronic sinusitis definitions.
  - Suspicion of chronic sinusitis (**Note:** A trial of antibiotic therapy is not required prior to imaging if individual meets criteria for chronic sinusitis)
    - Chronic sinusitis is suspected when **BOTH** of the following are met:
      - At least two of the following on history and physical exam:
        - Mucopurulent drainage
        - Nasal obstruction or congestion
        - Facial pain, pressure, and/or fullness (may involve the anterior face, periorbital region, or manifest with headache that is localized or diffuse)
        - Decreased sense of smell (see **Taste and Smell Disorders (HD-2.1)** if anosmia, hyposmia, or dysosmia is an isolated symptom)

        AND
      - The aforementioned findings on history and physical exam have been present for at least 12 weeks
  - Follow-up on incidentally noted sinus pathology (i.e., mucosal thickening, partial opacification of a sinus, or other indeterminate finding in incompletely visualized sinuses) on other imaging studies not performed for the purpose of evaluating sinus pathology, such as MRI Brain for headache, when requested by ENT for clinical correlation.
- Studies requested for the sole purpose of navigation for sinus surgery should be coded CPT® 77011 (CT guidance for stereotactic localization).
  - It is not appropriate to report both CPT® 70486 and CPT® 77011 for the same CT stereotactic localization imaging session.

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- For unexplained cough as the main symptom, and suspected Upper Airway Cough Syndrome (UACS) as the etiology, see **Cough (CH-3.1)** in the Chest Imaging Guidelines.
- For the immunocompromised individual with symptoms of sinusitis, the following are medically necessary:
  - CT Maxillofacial (contrast level as requested) when ordered by the surgeon or in consultation with the surgeon (i.e., ENT or ophthalmologist)
  - CT Maxillofacial with contrast (CPT® 70487) when there is suspicion for ANY of the following:
    - Orbital or facial cellulitis
    - Proptosis
    - Abnormal visual examination
    - Ophthalmoplegia
    - Fungal or vascular lesions visualized in nasal cavity
- CT Maxillofacial without contrast (CPT® 70486) **OR** CT Maxillofacial with contrast (CPT® 70487) **OR** MRI Orbits/Face/Neck without and with contrast (CPT® 70543) is medically necessary for the conditions below. However, CT Maxillofacial without contrast (CPT® 70486) may also be requested with MRI Orbits/Face/Neck without and with contrast (CPT® 70543) for surgical planning or osseous involvement).
  - Sinonasal obstruction, polyp, or suspected mass
  - Suspected orbital complication
  - Suspected invasive fungal sinusitis
  - Cystic fibrosis
  - Osteomyelitis and odontogenic infections, see **Skull Base Osteomyelitis (SBO) (HD-20.2)** and **Dental/Periodontal/Maxillofacial Imaging (HD-30.2)** for additional imaging modalities
- CT Maxillofacial without contrast (CPT® 70486) **AND** MRI Orbits/Face/Neck without and with contrast (CPT® 70543) are medically necessary when ordered by the ENT/specialist prior to planned biopsy of an intranasal mass — the extent and origin of which could not be determined by complete rhinologic exam alone
- MRI Brain without and with contrast (CPT® 70553) is medically necessary for suspected intracranial complication
- CT Orbits/Temporal bone without contrast (CPT® 70480) or CT Orbits/Temporal bone with contrast (CPT® 70481) is medically necessary performed alone or added to CT Maxillofacial for:
  - suspected orbital complications
- For skull base osteomyelitis (SBO), see **Skull Base Osteomyelitis (SBO) (HD-20.2)**
- Repeat imaging is medically necessary for ANY of the following scenarios:
  - An ENT specialist or any provider in consultation with an ENT specialist requests the imaging **and** ONE or more of the following:

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  - There has been a follow-up visit since the previous imaging and there is no improvement after an additional 3 weeks of conservative treatment after initial imaging was completed:
    - The following imaging is medically necessary: CT Maxillofacial without contrast (CPT® 70486) **OR** limited CT Sinus without contrast (CPT® 76380)
  - There is a new abnormality on exam such as obstructing mass
    - The following imaging is medically necessary: CT Maxillofacial without contrast (CPT® 70486) **OR** CT Maxillofacial with contrast (CPT® 70487)
  - If sinus surgery is planned (including but not limited to Balloon Sinus Ostial Dilation or Functional Endoscopic Sinus Surgery) **AND** the most recent diagnostic CT Maxillofacial without contrast (CPT® 70486) is greater than 6 months old **OR** there is a change in clinical status as described above (i.e interval completion of provider-prescribed medical management after the last CT was performed), a repeat diagnostic CT Maxillofacial without contrast (CPT® 70486) is supported for surgical planning.
    - Repeat CT Maxillofacial solely for the use of navigation during the sinus surgery (i.e., the most recent diagnostic CT Maxillofacial performed within the prior six months was only inadequate due to lacking anatomic landmarks or insufficient thinness of cuts) should be requested with CPT® 77011, not the diagnostic CPT® 70486.
    - 3D Rendering (CPT® 76376 or CPT® 76377) should not be reported in conjunction with CPT® 77011 (or CPT® 70486 if used). The procedure inherently generates a 3D dataset.
- Complications of ABRS (acute bacterial rhinosinusitis) are suspected based on:
  - Any constellation of symptoms worrisome for intracranial extension of infection or meningitis (i.e., severe headache, photophobia, fever, neck stiffness)
  - Severe headache
  - Facial Swelling
  - Cranial nerve palsies
  - Orbital signs (cellulitis, impaired extraocular motility, decrease in vision or proptosis)
- Complications of ABRS are best assessed using iodine contrast-enhanced CT Maxillofacial with contrast (CPT® 70487) **OR** gadolinium-based MR imaging (MRI Orbits/Face/Neck without and with contrast (CPT® 70543) to identify extra-sinus extension or involvement; thus, this imaging is medically necessary.
  - CT Maxillofacial without contrast (CPT® 70486) may also be requested with MRI Orbits/Face/Neck without and with contrast (CPT® 70543) for surgical planning or osseous involvement.

- Suspected complications are the only medically necessary indication for MR imaging of the paranasal sinuses in the setting of ABRS.

For additional medical necessity criteria for CT Maxillofacial, see Cone Beam Imaging, see **Cone Beam Computed Tomography (CBCT) (HD-24.7)** and **Dental/Peridontal/ Maxillofacial Imaging (HD-30.2)**)

Evaluation of potential candidates for Eustachian Tube balloon dilation procedure is with a one-time CT of the temporal bone without contrast (CPT® 70480). See medical necessity discussion in **Mastoid Diseae or Ear Pain (HD-26.1)**. CT Sinus/Maxillofacial irrespective of contrast level is not supported if the sole indication for medical necessity is to evaluate a potential candidate for Eustachian Tube balloon dilation procedure, without meeting other HD-29.1 medical necessity criteria.

Background and Supporting Information

- Rhinosinusitis is defined as inflammation of the nasal cavity and adjacent paranasal sinuses. Acute sinusitis refers to symptom duration <4 weeks, subacute 4 to 12 weeks, and chronic >12 weeks. Complicated sinusitis refers to symptoms suggesting spread of disease into adjacent structures, including orbital or intracranial complications.
- There is no evidence to support advanced imaging of acute (<4 weeks) and subacute (4 to 12 weeks) uncomplicated rhinosinusitis.
- There is no evidence to support routine follow-up advanced imaging after treatment with clinical improvement of sinusitis.

Evidence Discussion (HD-29.1)

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- The American Academy of Otolaryngology – Head & Neck Surgery (AAO-HNS) recommended that clinicians should not obtain radiographic imaging for individuals with suspected uncomplicated Acute Rhinosinusitis (ARS), with imaging reserved for cases with clinically suspected complication. ARS refers to inflammation of the nasal cavity and paranasal sinuses lasting less than 4 weeks' duration (Rosenfeld et al., 2015).
- Contrasted CT Maxillofacial is first line imaging for rhinosinusitis with suspected complications (orbital or intracranial). There is up to 91% accuracy with CT to detect orbital complications vs clinical exam alone. CT also is preferred for surgical planning. However, CT is often more useful for surgical planning and easier to perform. Non-contrasted CT Sinus is not preferred but may be useful for surgical navigation. There is no relevant literature to support pre- and post-contrast CT imaging. MRI Head or orbits/face/neck can be complementary with CT. MRI is more accurate than CT in the evaluation of soft tissues regarding intra-orbital and intracranial complications (Expert Panel on Neurological Imaging et al., 2022, ACR 2021).
- Chronic rhinosinusitis, acute recurrent bacterial sinusitis, non-invasive fungal sinusitis, and/or sinonasal polyposis are best evaluated initially with non-contrast CT Maxillofacial. CT is critical for surgical planning. Contrast is not necessary unless complications are suspected. MRI is not useful as the first-line study because of the lack of bony detail. In select cases, evaluation with MRI without and with IV contrast may be helpful to differentiate fluid secretions from inflamed mucosa and exclude an underlying obstructing mass (Expert Panel on Neurological Imaging et al., 2022; ACR 2021).
- Urgent CT Maxillofacial, either without or with IV contrast is first line imaging for any suspected invasive fungal sinusitis, as delay in diagnosis and surgical debridement could increase the already high risk of mortality. In cases of invasive fungal sinusitis, MRI without and with IV contrast of the head and/or orbits/face/neck is adjunctive to look for invasion into surrounding soft tissues as well as vascular complications (Expert Panel on Neurological Imaging et al., 2022; ACR, 2021).
- CT and MRI are considered complimentary imaging modalities in the evaluation of a sinonasal mass—localizing and characterizing the lesions to determine their extent for treatment planning. If an MRI is planned, the CT may be performed without IV contrast since the main purpose of the CT is to evaluate osseous involvement (Expert Panel on Neurological Imaging et al., 2022; ACR 2021).

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References (HD-29)

v1.0.2027

1. Abdalkader, M., Xie, J., Cervantes-Arslanian, A., Takahashi, C., & Mian, A. Z. (2019). Imaging of intracranial infections. *Seminars in Neurology,* 39(3), 322–333. https://doi.org/10.1055/s-0039-1693161
2. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
3. Desrosiers, M., Evans, G. A., Keith, P. K., Wright, E. D., Kaplan, A., Bouchard, J., Ciavarella, A., Doyle, P. W., Javer, A. R., Leith, E. S., Mukherji, A., Shargill, N. S., Small, P., Witterick, I., & Canadian Rhinosinusitis Working Group. (2011). Canadian clinical practice guidelines for acute and chronic rhinosinusitis. *Allergy, Asthma & Clinical Immunology,* 7(1), Article 2. https://doi.org/10.1186/1710-1492-7-2
4. Expert Panel on Neurological Imaging, Hagiwara, M., Policeni, B. A., Juliano, A. F., Corey, A. S., Burns, J., Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2022). ACR Appropriateness Criteria® sinonasal disease: 2021 update. *Journal of the American College of Radiology,* 19(5, Suppl), S175–S193. https://doi.org/10.1016/j.jacr.2022.02.011
5. Kuan, E. C., Wang, E. W., Adappa, N. D., Palmer, J. N., Chiu, A. G., Lee, J. T., Sargi, Z., Eloy, J. A., Oyesiku, N. M., Snyderman, C. H., Hanna, E. Y., Rinaldo, A., Ferlito, A., & International Consensus Statement Working Group. (2024). International consensus statement on allergy and rhinology: Sinonasal tumors. *International Forum of Allergy & Rhinology,* 14(2), 149–608. https://doi.org/10.1002/alr.23262
6. Micucci, S., Keschner, D. B., & Liang, J. (2018). Eustachian tube balloon dilation: Emerging practice patterns for a novel procedure. *Annals of Otology, Rhinology & Laryngology*, 127(11), 848–855. https://doi.org/10.1177/0003489418798858
7. Rosenfeld, R. M., Piccirillo, J. F., Chandrasekhar, S. S., Brook, I., Ashok Kumar, K., Kramper, M., Orlandi, R. R., Palmer, J. N., Patel, Z. M., Peters, A., Walsh, S. A., Corrigan, M. D., & Robertson, P. J. (2015). Clinical practice guideline (update): Adult sinusitis. *Otolaryngology–Head and Neck Surgery*, 152(2, Suppl), S1–S39. https://doi.org/10.1177/0194599815572097
8. Tucci, D. L., McCoul, E. D., Rosenfeld, R. M., Tunkel, D. E., Batra, P. S., Chandrasekhar, S. S., Cordes, S. R., Eshraghi, A. A., Kaylie, D., Lal, D., Lee, J. T., Setzen, M., Sindwani, R., Syms, C. A., III, Bishop, C., Poe, D. S., Corrigan, M. D., & Lambie, E. (2019). Clinical consensus statement: Balloon dilation of the Eustachian tube. *Otolaryngology–Head and Neck Surgery,* 161(1), 6–17. https://doi.org/10.1177/0194599819848423
9. Wu, D., Bleier, B. S., & Wei, Y. (2020). Definition and characteristics of acute exacerbation in adult patients with chronic rhinosinusitis: A systematic review. *Journal of Otolaryngology – Head & Neck Surgery*, 49(1), Article 62. https://doi.org/10.1186/s40463-020-00459-w

Temporomandibular Joint Disease (TMJ) and Dental/ Periodontal/Maxillofacial Imaging (HD-30)

Guideline Page

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Temporomandibular Joint Disease (TMJ) (HD-30.1)

HD.TJ.0030.1.A
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Criteria

- MRI TMJ (CPT® 70336) is the diagnostic study of choice and is considered medically necessary for those who fail a minimum of 6 weeks of non-surgical treatment **AND** who are actively being considered for TMJ surgery.
  - The exception to the conservative management and surgical consideration requirement above includes the need to evaluate a recent trauma, dislocation, severe malocclusion, dental infection, or abscess.
- CT Maxillofacial without contrast (CPT® 70486) or without and with contrast (CPT® 70488) when there is suspicion of bony involvement based on prior x-ray or MRI
- Ultrasound (CPT® 76536) is considered medically necessary to look for the presence of a joint effusion and to evaluate cartilage and disk displacement with open and closed mouth imaging and to guide injections
- For TMJ imaging in individuals with Juvenile Idiopathic Arthritis (see **Temporomandibular Joint (TMJ) Imaging in Children (PEDHD-25)** in the Pediatric Head Imaging Guidelines)
  - MRI TMJ (CPT® 70336) is medically necessary annually for detecting silent TMJ arthritis in children and young adults with juvenile idiopathic arthritis as requested by a rheumatologist and/or oral/maxillofacial surgeon (OMS) and/or any provider in consultation with a rheumatologist or OMS.
  - Repeat imaging with MRI TMJ (CPT® 70336) in individuals with JIA is considered medically necessary for any of the following:
    - Change in signs or symptoms suggesting progression of disease
    - To monitor the effects of treatment[11]
  - Bone Scintigraphy/Bone Scan 3 Phase Study (CPT® 78315) in individuals over 12 years of age is considered medically necessary in anticipation or consideration of surgery.
- Jaw Asymmetry - Unilateral condylar hyperplasia is manifested by slow growth in areas of the mandible causing facial asymmetry. It is usually a self-limiting condition seen predominantly in individuals 12 to 30 years of age.
  - CPT® 78315 Bone Scan 3 Phase Study is considered medically necessary in anticipation or consideration of surgery.

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Evidence Discussion (HD-30.1)

- MRI is preferred for evaluation of the temporomandibular joint (TMJ) due to its superior contrast resolution and its ability to acquire dynamic imaging for demonstration of the functionality of the joint (Bag, 2014; Whyte et al., 2021).
- MRI is the imaging modality of choice for the diagnosis of internal derangement with an accuracy of 95% in assessing the disc position and form and 93% accuracy in assessing the osseous changes (Bag, 2014).
- MRI is reserved for individuals with persistent symptoms in whom conservative measures have been ineffective, or in those with suspected internal joint derangement (Scrivani et al., 2008; Gauer & Semidey, 2015; National Academies of Sciences, Engineering and Medicine, 2020). Imaging the TMJ prematurely may lead to harms including unnecessary surgery (Mercuri, 2012).
- CT is the alternative modality for evaluating bony anatomy of the TMJ, fractures, degenerative changes, erosions, infections, congenital anomalies, acute and chronic inflammatory conditions, pre-operative evaluation and follow- up after surgery (Bag, 2014; ACR, 2021; Whyte et al. 2021).
- For pre-operative planning of unilateral condylar hyperplasia, bone scintigraphy is useful to predict ongoing condylar growth (Liu & Shi, 2021).
- The diagnosis of chronic rheumatoid arthritis of the TMJ is established with contrast-enhanced MRI (Schmidt et al., 2022). It is the preferred imaging study for diagnosis, disease progression, treatment monitoring and annual surveillance of TMJ arthritis in juvenile idiopathic arthritis (JIA) (Schmidt et al., 2022).

Dental/Periodontal/Maxillofacial Imaging (HD-30.2)

HD.TJ.0030.2.A
v1.0.2027

Criteria

- Initial imaging with plain x-rays/dental x-rays is required.
- Cone beam CT is required for surgical planning and is, therefore, considered medically necessary for the potential indications listed below.
- Potential indications include but are not limited to:
  - Osteomyelitis and odontogenic infections (x-ray **NOT** required)
  - Bisphosphonate-related osteonecrosis of the jaw (x-ray **NOT** required)
  - Impacted teeth
  - Supernumerary teeth
  - Dentoalveolar trauma
  - Root resorption
  - Foreign body
  - Odontogenic cysts, tumors, or other jaw pathology
  - Orthognathic surgery for dentofacial anomalies
  - Maxillofacial bone graft planning
  - Dental implants related to tooth loss from injury, trauma, or jaw pathology such as cysts, tumors, or cancer
  - Post-operative imaging, including dental implants
- Cone Beam CT: Report with CPT® Codes: CPT® 70486, CPT® 70487, CPT® 70488, CPT® 70480, CPT® 70482 (see **Cone Beam Computed Tomography (CBCT) (HD-24.7)**)
- 3D rendering (CPT® 76376 or CPT® 76377) should **NOT** be reported separately
- Cone beam CT (CBCT) may also be called i-CAT scanner or mini-CAT scanner
- For cleft palate indications (see **Other Indications for Sinus Imaging (PEDHD-5.6)**)
- For salivary gland indications (see **Salivary Gland Disorders (Neck-11.1)**)

Background and Supporting Information

Dental x-rays include panoramic, periapical, and/or occlusal x-rays.

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Evidence Discussion (HD-30.2)

- CT is the radiologic modality for evaluating the bony anatomy of the head, acute and chronic inflammatory conditions, paranasal sinuses, pre-operative evaluation and follow-up after surgery (De Vos et al., 2009; ACR, 2021).
- Recommendations by the American Association of Endodontists and the American Academy of Oral and Maxillofacial Radiology supported the use of cone beam CT (CBCT) as a supplemental imaging technique when conventional radiography fails to answer the clinical question and for surgical planning (De Vos et al., 2009; Horner et al., 2015; Kim et al. 2019).

Head Imaging Guidelines

References (HD-30)

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1. Almeida, F. T., Pacheco-Pereira, C., Flores-Mir, C., Le, L. H., Jaremko, J. L., & Major, P. W. (2019). Diagnostic ultrasound assessment of temporomandibular joints: A systematic review and meta-analysis. *Dentomaxillofacial Radiology,* 48(2), 20180144. https://doi.org/10.1259/dmfr.20180144
2. American Academy of Orofacial Pain. (2003). Guidelines for diagnosis and management of disorders involving the temporomandibular joint and related musculoskeletal structures. *Cranio,* 21(1), 68–76. https://doi.org/10.1080/08869634.2003.11746234
3. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
4. Bag, A. K. (2014). Imaging of the temporomandibular joint: An update. *World Journal of Radiology*, 6(8), 567–582. https://doi.org/10.4329/wjr.v6.i8.567
5. De#Vos, W., Casselman, J., & Swennen, G. R. J. (2009). Cone-beam computerized tomography (CBCT) imaging of the oral and maxillofacial region: A systematic review of the literature. *International Journal of Oral and Maxillofacial Surgery,* 38(6), 609–625. https://doi.org/10.1016/j.ijom.2009.02.028
6. Gauer, R. L., & Semidey, M. J. (2015). Diagnosis and treatment of temporomandibular disorders. *American Family Physician,* 91(6), 378–386.
7. Horner, K., O'Malley, L., Taylor, K., & Glenny, A.-M. (2015). Guidelines for clinical use of CBCT: A review. *Dentomaxillofacial Radiology*, 44(1), 20140225. https://doi.org/10.1259/dmfr.20140225
8. Jacobs, R., Salmon, B., Codari, M., Hassan, B., & Bornstein, M. M. (2018). Cone beam computed tomography in implant dentistry: Recommendations for clinical use. *BMC Oral Health,* 18(1), Article 88. https://doi.org/10.1186/s12903-018-0523-5
9. Kim, I. H., Singer, S. R., & Mupparapu, M. (2019). Review of cone beam computed tomography guidelines in North America. *Quintessence International*, 50(2), 136–145. https://doi.org/10.3290/j.qi.a41332
10. Liu, P., & Shi, J. (2021). Growth trends analysis of unilateral condylar hyperplasia followed up with planar scintigraphy: Retrospective overview of 249 cases. *Medicine (Baltimore)*, 100(51), e28226. https://doi.org/10.1097/MD.0000000000028226
11. Mercuri, L. G. (2012). Management of temporomandibular joint disorders. *Journal of Oral Biology and Craniofacial Research*, 2(3), 141–142. https://doi.org/10.1016/j.jobcr.2012.10.010
12. National Academies of Sciences, Engineering, and Medicine. (2020). Temporomandibular disorders: Priorities for research and care. National Academies Press. https://doi.org/10.17226/25652
13. Schmidt, C., Ertel, T., Arbogast, M., Henschel, V., Gellrich, N. C., & Schliephake, H. (2022). The diagnosis and treatment of rheumatoid and juvenile idiopathic arthritis of the temporomandibular joint. *Deutsches Ärzteblatt International*, 119(4), 47–54. https://doi.org/10.3238/arztebl.m2021.0388
14. Schulze, R. K. W., & Drage, N. A. (2020). Cone-beam computed tomography and its applications in dental and maxillofacial radiology. *Clinical Radiology*, 75(9), 647–657. https://doi.org/10.1016/j.crad.2020.04.006
15. Scrivani, S. J., Keith, D. A., & Kaban, L. B. (2008). Temporomandibular disorders. *New England Journal of Medicine*, 359(25), 2693–2705. https://doi.org/10.1056/NEJMra0802472
16. Tyndall, D. A., Price, J. B., Tetradis, S., Ganz, S. D., Hildebolt, C., Scarfe, W. C., & American Academy of Oral and Maxillofacial Radiology. (2012). Position statement of the American Academy of Oral and Maxillofacial Radiology on selection criteria for the use of radiology in dental implantology with emphasis on cone beam computed tomography. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, 113(6), 817–826. https://doi.org/10.1016/j.oooo.2012.03.005
17. Weiss, R., II, & Read-Fuller, A. (2019). Cone beam computed tomography in oral and maxillofacial surgery: An evidence-based review. *Dentistry Journa*l, 7(2), Article 52. https://doi.org/10.3390/dj7020052
18. Whyte, A., Boeddinghaus, R., Bartley, A., & Vijeyaendra, R. (2021). Imaging of the temporomandibular joint. *Clinical Radiology*, 76(1), 76.e21–76.e35. https://doi.org/10.1016/j.crad.2020.06.020

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Cranial Neuropathies (HD-31)

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Cranial Neuropathies (HD-31.1)

HD.CN.0031.1.A
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Cranial Neuropathies Imaging Indications

Criteria

- MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for all individuals with new or worsening specific cranial nerve abnormalities.
- MRI Orbit/Face/Neck without contrast (CPT® 70540) **OR** MRI Orbit/Face/Neck without and with contrast (CPT® 70543) is also considered medically necessary for individuals with abnormalities in cranial nerves I, II, III, IV, V, VI, VII, IX, X, XI, or XII.
- CT Neck with contrast (CPT® 70491) is considered medically necessary for evaluation of abnormalities involving cranial nerves IX, X, XI, or XII.
- Imaging of the Brain and Orbit, Face and/or Neck is considered medically necessary concurrently when requested.
- For specific cranial neuropathies, see the corresponding guideline section listed below:
  - CN I: Olfactory nerve (see **Taste and Smell Disorders (HD-2.1)**)
  - CN II, III, IV, VI: Optic, Oculomotor, Trochlear and Abducens (see **Eye Disorders and Visual Loss (HD-32.1)**)
  - CN V: Trigeminal nerve (see **Trigeminal Neuralgia and other Centrally Mediated Facial Pain Syndromes (HD-10.1)**)
  - CN VII: Facial nerve (see **Facial Palsy (HD-6.1)**)
  - CN VIII: Vestibulocochlear nerve (see **Dizziness/Vertigo (HD-23.1)**, **Hearing Loss (HD-27.1)**, **Tinnitus (HD-27.2)**, **Acoustic Neuroma and Other Cerebellopontine Angle Tumors (HD-33.1)**. For isolated nystagmus (see **Eye Disorders and Visual Loss (HD-32.1)**)
  - CN IX: Glossopharyngeal nerve (see **Glossopharyngeal Neuralgia/ Glossopharyngeal Neuropathy HD-10.2)**)
  - CN X: Vagal nerve, imaging as detailed above (see also **Recurrent Laryngeal Palsy/Vocal Cord Palsy (Neck-7.1)**)
  - CN XI: Spinal accessory nerve, imaging as indicated above
  - CN XII: Hypoglossal nerve, imaging as indicated above
- For cranial neuropathies, whether isolated or multiple, due to clinically suspected stroke and/or vascular dissection (see **General Guidelines - CT and MR**

Angiography (CTA/CTV and MRA/MRV) (HD-1.5), **Headache and Suspected Vascular Dissection (HD-11.1)** and **Stroke/TIA (HD-21.1)**

Background and Supporting Information

If a detailed clinical evaluation is unable to localize the site of the lesion, imaging of the entire course of the relevant cranial nerve is required, as cranial neuropathy can result from pathology affecting the nerve fibers at any point along the course of the nerve, from the cranial nerve origin in the brainstem to the end organ supplied by the nerve, requiring multiple imaging modalities.

The spinal trigeminal tract and nucleus extend from the midpons caudally into the upper cervical cord at the C2-4 levels. For suspected lesions of the spinal trigeminal tract and nucleus, imaging the brain stem and cervical spinal cord is supported. See **Trigeminal Neuralgia and other Centrally Mediated Facial Pain Syndromes (HD-10.1)**.

Number	Cranial Nerve Name	Nerve dysfunction on exam	Guideline Section in HD
I	Olfactory (smell)	Anosmia, hyposmia, parosmia, phatosmia	2
II	Optic (vision)	Optic neuritis, disc edema, papilledema, afferent pupillary defect APD)	16, 17, 32
III	Oculomotor (eye and pupil movement)	Eye "down and out", +/- dilated pupil, ptosis, diplopia	32
IV	Trochlear (depresses the eye)	Inability to depress the eye, diplopia	32
V	Trigeminal (sensation, mastication, taste)	Pain, numbness, corneal reflex loss, jaw deviation, trigeminal neuralgia, loss of taste	10
VI	Abducens (lateral movement of the eye)	Eye turns medially, inability to abduct, lateral rectus palsy, diplopia	32

Number	Cranial Nerve Name	Nerve dysfunction on exam	Guideline Section in HD
VII	Facial (movement facial muscles, taste at 2/3, salivation/ lacrimation)	Inability to close eyelid, smile, nasolabial fold flattening, hyperacusis, impaired taste, salivation, lacrimation	6
VIII	Auditory, Vestibular, Vestibulochochlear (hearing and balance)	Hearing loss, tinnitus, vertigo, nystagmus, abnormal gait/ balance, sway on Romberg	23, 27, 33
IX	Glossopharyngeal (swallow, sensation, pharynx, posterior 1/3 tongue, parotid salivary gland)	Depressed gag reflex and palate, dysphagia, uvula deviation, throat pain	10, 2
X	Vagus (swallow, speech, parasympathetic to heart, lungs, GI tract)	Vocal cord paralysis, recurrent laryngeal nerve palsy, spasmodic dysphonia	7.1, 1.1
XI	Spinal Accessory (motor function neck/shoulder)	Sternocleidomastoid (SCM) weakness when turning head opposite, shoulder elevation, winging scapula	1.1
XII	Hypoglossal (tongue movement)	Tongue deviation, atrophy, fasciculation	1.1

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Number	Cranial Nerve Name	Nerve dysfunction on exam	Guideline Section in HD
INO	Internuclear Opthalmoplegia (lesion of medial longitudinal fasciculus, CN III, CN VI)	Impaired adduction of ipsilateral eye with nystagmus of abducting eye	16, 21, 22
Horner Syndrome	Disruption of sympathetic innervation to eye and face	Ptosis, miosis (constricted pupil), facial anhidrosis (absence of sweating)	32.2, 11.3

Evidence Discussion (HD-31.1)

- Imaging of each body section along the entire course of the relevant cranial nerve may be considered medically necessary if detailed clinical evaluation is unable to localize the site of the lesion. Cranial neuropathy can result from pathology affecting the nerve fibers at any point along the course of the nerve, from the cranial nerve origin in the brainstem to the end organ supplied by the nerve, indicating need to image multiple body sections (Expert Panel on Neurologic Imaging et al., 2018; Expert Panel on Neurologic Imaging, et al. 2022). MRI Brain, Orbits, Face, Neck, or any combination may be necessary depending on the clinical need (Expert Panel on Neurologic Imaging et al., 2018; Expert Panel on Neurologic Imaging, et al. 2022).
- MRI is the standard modality for imaging the cranial nerves (Expert Panel on Neurologic Imaging et al., 2022; ACR 2024).
- CT Neck is useful to exclude neck masses when evaluating either isolated or multiple lower cranial neuropathies (Expert Panel on Neuroloigcal Imaging et al., 2022). CT may be complementary to MRI in characterizing skull base erosions, calcifications, and skull base foramina (Expert Panel on Neurologic Imaging, et al. 2022).

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References (HD-31)

v1.0.2027

1. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
2. Expert Panel on Neurologic Imaging, Kennedy, T. A., Corey, A. S., Policeni, B. A., Burns, J., Aulino, J. M., Berger, K. L., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2018). ACR Appropriateness Criteria® orbits, vision, and visual loss. *Journal of the American College of Radiology,* 15(5 Suppl), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
3. Expert Panel on Neurologic Imaging, Rath, T. J., Policeni, B. A., Corey, A. S., Burns, J., Aulino, J. M., Berger, K. L., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2022). ACR Appropriateness Criteria® cranial neuropathy: 2022 update. *Journal of the American College of Radiology,* 19(11 Suppl), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021

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Eye Disorders and Visual Loss (HD-32)

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Eye Disorders and Visual Loss (HD-32.1)

HD.VL.0032.1.A
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Criteria

- For specific conditions - See *Background and Supporting Information* that include table of abbreviations
- For eye pain, also refer to **Trigeminal Neuralgia/Trigeminal Neuropathy (HD-10.1)** and/or **Multiple Sclerosis and Related Conditions (HD-16)**
- Examination of ocular complaints and visual loss may include evaluation of pupillary responses, extraocular motility, visual acuity, visual field testing, intraocular pressures, external examination, slit lamp examination, and/or fundoscopic exam of retinae. An exam performed by a neuro-ophthalmologist, ophthalmologist, neurologist, or an optometrist meets this requirement.
- MRI Orbits/Face/Neck without contrast (CPT® 70540) **OR** MRI Orbits/Face/Neck without and with contrast (CPT® 70543) **OR** CT Orbits/Temporal bone with contrast (CPT® 70481) **OR** CT Orbits/Temporal bone without contrast (CPT® 70480) **AND/OR** MRI Brain without contrast (CPT® 70551) **OR** MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for:
  - unexplained vision loss
  - optic atrophy (cranial nerve II)
  - optic neuropathy (cranial nerve II)
  - papilledema/optic disc swelling (cranial nerve II) (see **Cranial Neuropathies (HD-31.1)** and **Papilledema/Pseudotumor Cerebri (HD-17.1)**)
  - Afferent Pupillary Defect (APD) or Relative Afferent Pupillary Defect (RAPD)
  - chiasmal symptoms/signs (including bitemporal field deficit)
  - ophthalmoplegia, diplopia, and/or cranial nerve palsy (specifically CN III, IV, and VI, see **Cranial Neuropathies (HD-31.1)**)
  - nystagmus
- For acute vision loss with infection or inflammatory disorder suspected, CT Maxillofacial with contrast (CPT® 70487) is considered medically necessary, in addition to the imaging studies indicated for unexplained vision loss
- For optic disc edema/papilledema, CT Head without contrast (CPT® 70450) is considered medically necessary to assess for space-occupying processes such as intracranial hemorrhage, mass effect and hydrocephalus.
- For suspected optic neuritis, MRI is the preferred modality (see **Multiple Sclerosis (MS) (HD-16.1)** and **Neuromyelitis Optica Spectrum Disorders (HD-16.2)**)
- Visual field defects are associated with retrochiasmal pathology (see **Stroke/TIA (HD-21.1)** or **Primary Central Nervous System Tumors (ONC-2)** in the Oncology

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Imaging Guidelines or **Brain Metastasis (ONC- 31.3)** in the Oncology Imaging Guidelines)

- MRI Orbits/Face/Neck without contrast (CPT® 70540) or MRI Orbits/Face/Neck without and with contrast (CPT® 70543) or CT Orbits/Temporal bone with contrast (CPT® 70481) is considered medically necessary for:
  - exophthalmos (including thyroid eye disease), enophthalmos or non-traumatic orbital asymmetry
  - suspected orbital cellulitis or atypical pre-septal cellulitis, uveitis, or scleritis
  - orbital mass or metastasis
  - orbital inflammatory syndrome (orbital pseudotumor) and dacryocystitis or dacryoadenitis
- CT Orbits/Temporal bone without contrast (CPT® 70480), OR CT Maxillofacial without contrast (CPT® 70486) and/or CT Head without contrast (CPT® 70450) is/are considered medically necessary for:
  - orbital trauma with visual defect see also **Facial Trauma (HD-13.2)**
  - exophthalmos (including thyroid eye disease)
- CT Orbits/Temporal bone without contrast (CPT® 70480) or CT Orbits/Temporal bone with contrast (CPT® 70481) or CT Orbits/Temporal bone without and with contrast (CPT® 70482) or CT Maxillofacial without contrast (CPT® 70486) or CT Maxillofacial with contrast (CPT® 70487) or CT Maxillofacial without and with contrast (CPT® 70488) is considered medically necessary for:
  - pre-operative planning for procedures including dacryocystorhinostomy (DCR) to correct nasolacrimal duct obstruction (NLDO)
- When requested by the surgeon or in consultation with surgeon, contrast level as requested is considered medically necessary. This includes requests from ophthalmologists and oculoplastic surgeons. Contrast level preference may vary per institutional protocol.
- MRA Head (CPT® 70544, CPT® 70545, or CPT® 70546) or CTA Head (CPT® 70496) is medically necessary for suspicion of intracranial aneurysm, including third nerve palsy with pupillary involvement (see **Cerebral Aneurysms (HD-12.1)**
- MRA Head (CPT®70544, CPT®70545, or CPT®70546) or CTA Head (CPT®70496) **AND/OR** MRA Neck (CPT®70547, CPT®70548, or CPT®70549) or CTA Neck (CPT® 70498) is considered medically necessary for evaluation of diplopia due to suspected stroke or TIA (see **Cerebral Aneurysms (HD-12.1)**)
  - CTA Head and Neck (CPT® 70471) must be substituted for CTA Head (CPT®70496) and CTA Neck (CPT® 70498) if performed during the same session.
- Amaurosis Fugax (see **Stroke/TIA (HD-21.1)**)
  - Individuals describe a transient darkening or loss of vision, typically monocular
- Central Retinal Artery Occlusion, Branch Retinal Artery Occlusion, and Ophthalmic Artery Occlusion (see **Stroke/TIA (HD-21.1)**)

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- Individuals describe a sudden monocular loss of vision or visual field. Etiology is usually embolic and is considered a stroke to the retina
- There is currently no data to support advanced imaging while on Tepezza® (teprotumumab). However, advanced imaging is considered medically necessary for any of the following concerns:
  - Neurologic symptoms or ophthalmologic symptoms
  - To reassess compressive optic neuropathy (symptoms/signs of compressive optic neuropathy include APD, decreased visual acuity, and/ or visual field defects)
  - For non-response to Tepezza® (teprotumumab) or relapses, worsening proptosis, diplopia, lid retraction, or optic neuropathy
  - For surgical planning for orbital decompression, strabismus surgery, or lid surgery
    - When any of the above concerns are present, **ONE** of the following modalities is considered medically necessary:
      - MRI Orbits/Face/Neck without contrast (CPT® 70540)
      - MRI Orbits/Face/Neck without and with contrast (CPT® 70543)
      - CT Orbits/Temporal bone with contrast (CPT® 70481)
      - CT Orbits/Temporal bone without contrast (CPT® 70480)
      - CT head without contrast (CPT® 70450)
- Autoimmune Retinopathy
  - Suspicion for CAR (Cancer associated retinopathy) or MAR (melanoma associated retinopathy) syndromes (see **Paraneoplastic Syndromes (ONC-30.3)** in the Oncology Imaging Guidelines)
- Oncologic conditions
  - Retinoblastoma (see **Retinoblastoma (PEDONC-12)** in the Pediatric and Special Populations Oncology Imaging Guidelines)
  - Uveal (choroidal) melanoma (see **Ocular Melanoma (ONC-5.9)** in the Oncology Imaging Guidelines)
  - Biopsy results are not required before initial staging
- Vasculitis including Temporal Arteritis (Giant Cell Arteritis) (see **Cerebral Vasculitis (HD-22.1)**)

Background and Supporting Information

- Imaging Non-Indications
  - Imaging is not necessary if visual loss or ocular symptom/sign is due to known intrinsic eye disease, such as refractive errors, amblyopia, pterygium, subconjunctival hemorrhage, conjunctivitis, cataracts, macular degeneration, central serous retinopathy, retinal vein occlusion, retinal detachment, etc. Monocular diplopia is not an indication for imaging. Physiologic anisocoria and surgically distorted pupils are not indications for imaging. Anisocoria may be

physiologic or non-physiologic when the difference in pupil diameter between the two eyes is up to 2 mm.
    - Imaging is not typically necessary in cases of ptosis without concern for Horner's or 3rd nerve palsy
- Advanced imaging of the brain and orbit are not routinely paired.
    - Suspicion for disorders involving both regions is needed to image both regions.
    - Orbital imaging alone may be sufficient unless other signs or symptoms suggest brain involvement.
- Thyroid function and iodine contrast: thyroid dysfunction can occur in susceptible individuals after iodine exposure.

List of Abbreviations and Meanings:

Abbreviation	Meaning
AC	anterior chamber
APD	afferent pupillary defect (see RAPD)
BCVA	best-corrected visual acuity
C3F8	gas bubble injected into vitreous cavity during retina surgery
cc	with correction (current new or old glasses or contact lenses)
CP	color plates
C/S	conjunctiva/sclera
CSME	clinically significant macular edema
CVF	confrontation visual field (testing of gross field of view)
D	disc, optic nerve head
DBH	dot blot hemorrhages
DCR	dacryocystorhinostomy
DFE	dilated fundus exam
E	esophoria at distance
E'	esophoria at near

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Abbreviation	Meaning
EOM	extraocular movements
ERM	epiretinal membrane
ET	esotropia at distance
E(T)	inIntermittent esotropia at distance
ET'	esotropia at near
E(T)'	intermittent esotropia at near
GVF	Goldmann visual field test
HT	hypertropia
HVF	Humphrey visual field test (automated perimetry)
I	iris
Ishihara	commonly used color plates
IOP	intraocular pressure
K	cornea
LF	levator function
LFH	lid fissure height
LLL	lids, lashes, lacrimal gland
M	macula
ME	macular edema
MH	macular hole
MP	membrane peel
MRD1	margin-reflex distance from upper lid margin to pupillary light reflex
MRx	manifest refraction
NI	no improvement
NLDO	nasolacrimal duct obstruction

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Abbreviation	Meaning
NSC or NS	nuclear sclerotic cataract
OD	right eye
OS	left eye
ortho	eyes are aligned on the same target
OCT	optical coherence tomography
P	periphery
PD	prism diopter
ph or PH	pinhole (crude assessment of best-corrected visual acuity)
PPV or PPVx	pars plana vitrectomy
PVD	posterior vitreous detachment
RAPD	relative afferent pupillary defect (see APD)
RD	retinal detachment
RT	retinal tear
SB	scleral buckle
sc	without correction
SF6	gas bubble injected into vitreous cavity during retina surgery
SLE	slit lamp examination
SO	silicone oil
SRF	subretinal fluid
Ta	applanation tonometry (intraocular pressure measurement)
Tp	tonopen tonometry (intraocular pressure measurement)
V	vessels

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Abbreviation	Meaning
Va	visual acuity
VF	visual field testing (formal automated perimetry versus confrontation visual field testing)
X	exophoria at distance
X'	exophoria at near
XT	exotropia
X(T)	intermittent exotropia at distance
XT'	exotropia at near
X(T)'	intermittent exotropia at near

Evidence Discussion (HD-32.1)

- When evaluating suspected or known issues involving the eye, orbit, and/or brain, consideration must be given to:
  - whether or not imaging is required,
  - which body area should be imaged, i.e., brain, orbits, or both, and
  - which modality, MRI or CT, would best provide the information needed while exposing an individual to the least risk.
- The body area imaged should be reasonably expected to be potentially involved in the suspected condition. The angles of and distance between each view differ between brain imaging and orbital imaging. There are circumstances in which imaging of both the brain and orbits may be useful, as in conditions that can affect both locations or for which evaluation by the different techniques provides useful information.
- Soft tissue detail such as neural tissue is well-visualized by MRI.
- Calcification, bone, and hemorrhages are well-visualized by CT.
- MRI carries no risk of radiation exposure but is sensitive to motion, takes longer, and may require sedation or anesthesia for a longer duration than would be required for CT. Certain populations may have psychological or physical difficulty undergoing MRI scans, including children, those with obesity, movement disorders, anxiety, or claustrophobia.
- CT carries risk of radiation exposure but is less sensitive to motion and has a shorter duration than MRI. Imaging more than one body area increases the exposure dose.

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Certain populations may carry higher risk of detrimental effects from exposure, including children.

- Radiation exposure of the ocular lens contributes to cataract formation. Radiation doses vary between CT scans due to differences in scanning technique, number of images taken per CT, body area scanned, CT machines used, and facility protocols. The cancer risk of radiation exposure in diagnostic CT is considered extremely low, and the benefit of an appropriately indicated CT examination far outweighs the potential risk.(Watson 2023) Cataract formation is among the earliest radiation associated pathologies in the eye. The Beaver Dam Eye Study, a population-based study of common age-related eye diseases, found that nuclear sclerosis and posterior subcapsular opacity were significantly associated with CAT scans (Watson & Yu, 2023).

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Pupillary Abnormalities Including Horner Syndrome (HD-32.2)

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v1.0.2027

Criteria

- Examination of ocular complaints may include evaluation of pupillary responses, extraocular motility, visual acuity, visual field testing, intraocular pressures, external examination, slit lamp examination and/or funduscopic exam of the retinae. An exam performed by a neuro-ophthalmologist, ophthalmologist, neurologist, or an optometrist meets this requirement.
- Anisocoria and Other Pupillary Disorders
  - Physiologic anisocoria (difference in pupil diameter between the two eyes of typically 2 mm or less) and surgically distorted pupils are not indications for advanced imaging.
  - Dilated pupil from suspected Third nerve palsy (see **Eye Disorders and Visual Loss (HD-32.1)**)
  - Horner Syndrome (See below)
- Horner Syndrome (anisocoria, ptosis, and ipsilateral anhidrosis) is caused by disruption of sympathetic innervation to the eye and face. Definitive diagnosis may be established by pharmacologic testing of the pupillary response with eye drops. Evaluation and imaging depends on determining whether the cause is a central lesion (brainstem or cervical spinal cord), pre-ganglionic lesion (spinal cord or sympathetic chain in the chest), or post-ganglionic lesion (neck or carotid artery).
- Medically necessary imaging in the evaluation of Horner syndrome:
  - CT Head without contract (CPT® 70450) and/or CTA Head (CPT ® 70496) and/or CTA Neck (CPT® 70498)
    - CTA Head and Neck (CPT® 70471) if performed in the same session
  - MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for suspected intracranial or brainstem lesions and/or MRA Head without contrast (CPT® 70544), with contrast (CPT® 70545), or without and with contrast (CPT® 70546) and or MRA Neck without contrast (CPT® 70547), with contrast (CPT® 70548), or without and with contrast (CPT® 70549.
  - MRI Cervical Spine without contrast (CPT® 72141) or MRI Cervical Spine without and with contrast (CPT® 72156) and/or MRI Thoracic spine without contrast (CPT® 72146) or MRI Thoracic spine without and with contrast (CPT® 72157) is considered medically necessary for suspected spinal cord abnormality

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- MRI Brachial plexus for Horner syndrome with traction or trauma to the brachial plexus
  - Any ONE of the following are considered medically necessary:
    - MRI Upper Extremity other than joint without contrast (CPT® 73218)
    - MRI Upper Extremity other than joint without and with contrast (CPT® 73220)
    - MRI Chest without contrast (CPT® 71550)
    - MRI Neck without contrast (CPT® 70540)
    - MRI Chest without and with contrast (CPT® 71552)
    - MRI Neck without and with contrast (CPT® 70543)
- CT Chest with contrast (CPT® 71260) or MRI Chest without and with contrast (CPT® 71552) is considered medically necessary for suspected chest mass
- CT Neck with contrast (CPT® 70491) or MRI Face/Neck/Orbits without and with contrast (CPT® 70543) is considered medically necessary for suspected neck mass
- MRI Orbits/Face/Neck without contrast (CPT® 70540), MRI Orbits/Face/Neck without and with contrast (CPT® 70543) or CT Orbits/Temporal bone with contrast (CPT® 70481) is considered medically necessary for suspected orbital lesion or mass
- For additional CT head without contrast (CPT® 70450) indications, see **General Guidelines - CT Head (HD-1.4)**, **Head Trauma (HD-13.1)**, **Facial Trauma (HD-13.2)**
- For Horner syndrome suspected due to an underlying occult malignancy or paraneoplastic syndrome, see **Paraneoplastic Syndrome (ONC-30.3)**.
- For Congenital Horner Syndrome see **Eye Disorders (PEDHD-31.1**) and **Neuroblastoma – Initial Staging (PEDONC 6.3).**

Evidence Discussion (HD-32.2)

- In the evaluation of Horner Syndrome, if a detailed clinical evaluation is unable to localize the site of the lesion, imaging of the entire course of the relevant oculosympathetic pathway is required, as symptoms may result from pathology affecting the nerve fibers at any point along the course of the pathway, requiring multiple imaging modalities (Expert Panel on Neurologic Imaging et al., 2022). MRI Brain, MRI Orbits/Face/Neck, MRI Cervical Spine and/or MRI Brachial plexus studies may be necessary, depending on the clinical presentation (Expert Panel on Neurologic Imaging et al., 2018; Lee & Brazis, 2007; Kawasaki 2014; Expert Panel on Neurologic Imaging et al., 2022).
- CT Neck is useful to exclude neck masses (Lee & Brazis, 2007; Expert Panel on Neurologic Imaging et al., 2022). CT may be complementary to MRI in characterizing skull base erosions, calcifications, and skull base foramina (Expert Panel on Neurologic Imaging et al., 2022).

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- For suspected lung masses associated with Horner syndrome, such as for evaluation of Pancoast tumors, chest imaging is recommended. A mass may be diagnosed on a CT Chest or an MRI Chest (Lee & Brazis, 2007; Kawasaki, 2014; Panagopoulos et al., 2014). CT scans provide 60% sensitivity, 65% specificity, and 63% accuracy in defining the local extent of tumor, in contrast to MRI with a sensitivity of 88%, a specificity of 100%, and an accuracy of 94% (Panagopoulos et al., 2014). MRI of the chest is a more accurate pre-operative examination in identifying the local extent of a Pancoast tumor (Panagopoulos et al., 2014).
- Causes of Horner syndrome include carotid dissection, brain stem infarction or ischemia, suprasellar tumors, lesions within the cavernous sinus, and demyelinating lesions. Of these, carotid dissection is the most catastrophic acute etiology. The initial workup is focused on first excluding this diagnosis and its associated complications. Carotid dissection is a common etiology of acute onset Horner syndrome, particularly in the setting of recent trauma or in association with pain (Dubey et al., 2025).

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References (HD-32)

v1.0.2027

1. American College of Radiology. (2021). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck. https://gravitas.acr.org/PPTS/
2. American College of Radiology. (n.d.). ACR Appropriateness Criteria® radiation dose assessment introduction. https://www.acr.org/Clinical-Resources/Clinical-Tools-and-Reference/Appropriateness-Criteria
3. Bednarczuk, Z., & Pearce, S. H. (2021). The knowns and unknowns of teprotumumab for thyroid eye disease. *The Lancet Diabetes & Endocrinology*, 9(5), 323–325. https://doi.org/10.1016/S2213-8587(21)00076-0
4. Choi, S. C., Lee, S., Choi, H. S., Jang, J. W., Kim, S. J., & Lee, J. H. (2016). Preoperative computed tomography findings for patients with nasolacrimal duct obstruction or stenosis. *Korean Journal of Ophthalmology,* 30(4), 243–250. https://doi.org/10.3341/kjo.2016.30.4.243
5. Costello, F., & Scott, J. N. (2019). Imaging in neuro-ophthalmology. *Continuum: Lifelong Learning in Neurology,* 25(5), 1438–1490. https://doi.org/10.1212/CON.0000000000000783
6. Dagi, L. R., Velez, F. G., Archer, S. M., Rosenbaum, A. L., & American Academy of Ophthalmology. (2020). Adult strabismus preferred practice pattern®. *Ophthalmology*, 127(1), P182–P298. https://doi.org/10.1016/j.ophtha.2019.09.023
7. Expert Panel on Neurological Imaging, Dubey, P., Shekhrajka, N., Juliano, A. F., Agarwal, M., Antonio, A. A., Auron, M., Bunch, P. M., Burns, J., Compton, G., Friedman, E. R., Gule-Monroe, M. K., Hagiwara, M., Jain, V., Meltzer, D. E., Nadgir, R. N., Rizzo, J. F., 3rd, Shy, B. D., Trout, A. T., & Policeni, B. (2025). ACR Appropriateness Criteria® Horner Syndrome. *Journal of the American College of Radiology : JACR*, 22(11S), S550–S577. https://doi.org/10.1016/j.jacr.2025.08.041
8. Expert Panel on Neurologic Imaging, Kennedy, T. A., Corey, A. S., Policeni, B. A., Burns, J., Aulino, J. M., Berger, K. L., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2018). ACR Appropriateness Criteria® orbits, vision, and visual loss. *Journal of the American College of Radiology,* 15(5 Suppl), S116–S131. https://doi.org/10.1016/j.jacr.2018.03.023
9. Expert Panel on Neurologic Imaging, Whitehead, M. T., Cardenas, A. M., Corey, A. S., Burns, J., Aulino, J. M., Berger, K. L., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2019). ACR Appropriateness Criteria® headache. *Journal of the American College of Radiology,* 16(11 Suppl), S364–S377. https://doi.org/10.1016/j.jacr.2019.05.030
10. Expert Panel on Neurologic Imaging, Rath, T. J., Policeni, B. A., Corey, A. S., Burns, J., Aulino, J. M., Berger, K. L., Bykowski, J., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2022). ACR Appropriateness Criteria® cranial neuropathy: 2022 update. *Journal of the American College of Radiology*, 19(11 Suppl), S266–S303. https://doi.org/10.1016/j.jacr.2022.09.021
11. Expert Panel on Neurological Imaging, Friedman, E. R., Juliano, A. F., Hagiwara, M., Agarwal, M., Bunch, P. M., Burns, J., Dubey, P., Gule-Monroe, M. K., Hanna, T. N., Hunt, C. H., Jain, V., Lee, A. G., Meltzer, D. E., Nadgir, R. N., Rasool, N., Rizzo, J. F., 3rd, Situ-LaCasse, E., & Shih, R. Y. (2025). ACR Appropriateness Criteria® Vision Loss. *Journal of the American College of Radiology* : JACR, 22(11S), S738–S765. https://doi.org/10.1016/j.jacr.2025.08.030
12. Flaxel, C. J., Adelman, R. A., Bailey, S. T., Fawzi, A., Lim, J. I., Vemulakonda, G. A., Ying, G.-S., & *American Academy of Ophthalmology*. (2020). Retinal and ophthalmic artery occlusions preferred practice pattern®. Ophthalmology, 127(2), P259–P287. https://doi.org/10.1016/j.ophtha.2019.09.028
13. Freitag, S. K., & Roos, J. C. (2017). Preoperative imaging should be performed prior to surgery in all cases of acquired nasolacrimal obstruction—Yes. *Eye*, 31(3), 351–352. https://doi.org/10.1038/eye.2016.237
14. Glisson, C. C. (2019). Approach to diplopia. *Continuum: Lifelong Learning in Neurology*, 25(5), 1362–1375. https://doi.org/10.1212/CON.0000000000000786
15. Gross, J. R., McClelland, C. M., & Lee, M. S. (2016). An approach to anisocoria. *Current Opinion in Ophthalmology*, 27(6), 486–492. https://doi.org/10.1097/ICU.0000000000000316
16. Hamada, N., & Fujimichi, Y. (2015). Role of carcinogenesis-related mechanisms in cataractogenesis and its implications for ionizing radiation cataractogenesis. *Cancer Letters*, 368(2), 262–274. https://doi.org/10.1016/j.canlet.2015.08.009

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17. Hopper, K. D., Neuman, J. D., King, S. H., & Kunselman, A. R. (2001). Radioprotection to the eye during CT scanning. *American Journal of Neuroradiology*, 22(6), 1194–1198.
18. Kawasaki, A. K. (2014). Diagnostic approach to pupillary abnormalities. *Continuum: Lifelong Learning in Neurology,* 20, 1008–1022. https://doi.org/10.1212/01.CON.0000453306.42981.94
19. Klein, B. E. K., Klein, R., Linton, K. L. P., & Franke, T. (1993). Diagnostic x-ray exposure and lens opacities: The Beaver Dam Eye Study. *American Journal of Public Health,* 83(4), 588–590. https://doi.org/10.2105/AJPH.83.4.588
20. Lee, A. G., & Brazis, P. W. (2006). Localizing forms of nystagmus: Symptoms, diagnosis, and treatment. *Current Neurology and Neuroscience Reports*, 6(5), 414–420. https://doi.org/10.1007/s11910-996-0022-y
21. Lee, A. G., Brazis, P. W., Garrity, J. A., & White, M. (2004). Imaging for neuro-ophthalmic and orbital disease. *American Journal of Ophthalmology*, 138(5), 852–862.
22. Lee, A. G., Hayman, L. A., & Brazis, P. W. (2002). The evaluation of isolated third nerve palsy revisited: An update on the evolving role of magnetic resonance, computed tomography, and catheter angiography. *Survey of Ophthalmology*, 47(2), 137–157
23. Lee, A. G., Johnson, M. C., Policeni, B. A., & Smoker, W. R. K. (2009). Imaging for neuro-ophthalmic and orbital disease: A review. *Clinical & Experimental Ophthalmology*, 37(1), 30–53.
24. Lee, J. H., Lee, H. K., Lee, D. H., Choi, C. G., Kim, S. J., & Suh, D. C. (2007). Neuroimaging strategies for three types of Horner syndrome with emphasis on anatomic location. *American Journal of Roentgenology*, 188(1), W74–W81. https://doi.org/10.2214/AJR.05.1588
25. Lee, S. Y., Rhee, C. M., Leung, A. M., Braverman, L. E., Brent, G. A., & Pearce, E. N. (2015). Radiographic iodinated contrast media–induced thyroid dysfunction: A review. *Journal of Clinical Endocrinology & Metabolism*, 100(2), 376–383. https://doi.org/10.1210/jc.2014-3292
26. Panagopoulos, N., Leivaditis, V., Koletsis, E., Prokakis, C., Alexopoulos, P., Apostolakis, E., & Dougenis, D. (2014). Pancoast tumors: Characteristics and preoperative assessment. *Journal of Thoracic Disease*, 6(Suppl 1), S108–S115. https://doi.org/10.3978/j.issn.2072-1439.2013.12.29
27. Pineles, S. L., & Velez, F. G. (2018). Isolated ocular motor nerve palsies. *Journal of Binocular Vision and Ocular Motility,* 68(3), 70–77. https://doi.org/10.1080/2576117X.2018.1481266
28. Poon, R., & Badawy, M. K. (2019). Radiation dose and risk to the lens of the eye during CT examinations of the brain. *Journal of Medical Imaging and Radiation Oncology,* 63(6), 786–794. https://doi.org/10.1111/1754-9485.12950
29. Prasad, S. (2014). Diagnostic neuroimaging in neuro-ophthalmic disorders. *Continuum: Lifelong Learning in Neurology*, 20, 1023–1062. https://doi.org/10.1212/01.CON.0000453305.65851.1C
30. Sadaka, A., Schockman, S. L., & Golnik, K. C. (2017). Evaluation of Horner syndrome in the MRI era. *Journal of Neuro#Ophthalmology*, 37(3), 268–272. https://doi.org/10.1097/WNO.0000000000000503
31. Stewart, F. A., Akleyev, A. V., Hauer-Jensen, M., Hendry, J. H., Kleiman, N. J., Macvittie, T. J., Aleman, B. M. P., Edgar, A. B., Mabuchi, K., Muirhead, C. R., Shore, R. E., & Wallace, W. H. B. (2012). ICRP publication 118: ICRP statement on tissue reactions and early and late effects of radiation in normal tissues and organs. *Annals of the ICRP*, 41(1–2), 1–322.
32. Szatmáry, G. (2016). Imaging in patients with visual symptoms. *Continuum: Lifelong Learning in Neurology,* 22(5), 1499–1528. https://doi.org/10.1212/CON.0000000000000375
33. Tamhankar, M. A., & Volpe, N. J. (2015). Management of acute cranial nerve III, IV, and VI palsies: Role of neuroimaging. *Current Opinion in Ophthalmology*, 26(6), 464–468. https://doi.org/10.1097/ICU.0000000000000200
34. Tamhankar, M. A., Biousse, V., Ying, G.-S., & The CN Study Group. (2013). Isolated third, fourth, and sixth cranial nerve palsies: A prospective study. *Ophthalmology*, 120(11), 2264–2269. https://doi.org/10.1016/j.ophtha.2013.04.009
35. Teo, H. M., Smith, T. J., & Joseph, S. S. (2021). Efficacy and safety of teprotumumab in thyroid eye disease. *Therapeutics and Clinical Risk Management*, 17, 1219–1230. https://doi.org/10.2147/TCRM.S303057
36. van der Molen, A. J., Thomsen, H. S., Morcos, S. K., & Contrast Media Safety Committee of the European Society of Urogenital Radiology (ESUR). (2004). Effect of iodinated contrast media on thyroid function in adults. *European Radiology*, 14(5), 902–907. https://doi.org/10.1007/s00330-004-2238-z
37. Watson, R. E., & Yu, L. (2023). Safety considerations in MRI and CT. *Continuum: Lifelong Learning in Neurology*, 29(1), 27–53. https://doi.org/10.1212/CON.0000000000001213

Acoustic Neuroma and Other Cerebellopontine Angle Tumors (HD-33)

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Acoustic Neuroma and Other Cerebellopontine Angle Tumors (HD-33.1)

HD.AC.0033.1.A
v1.0.2027

Criteria

- Acoustic neuroma and vestibular schwannoma may be used interchangeably
- Initial diagnosis is usually made during evaluation for asymmetric hearing loss and/or vertigo (see **Dizziness, Vertigo and Syncope (HD-23)** and **Hearing Loss and Tinnitus (HD-27)**) for evaluation of those problems)
- MRI Brain without and with contrast (CPT® 70553), which should be done with attention to the internal auditory canals, is considered medically necessary for initial diagnosis.
- MRI Brain without contrast (CPT® 70551) is considered medically necessary if performed with FIESTA protocol
- MRI Orbits/Face/Neck without and with contrast (CPT® 70543) with audiologic or clinical features of retrocochlear hearing loss and a negative MRI Brain and in the rare individual in whom a detailed search is considered medically necessary for both a lesion of the cerebellopontine angle **and** lesions of the cerebral hemispheres
- Repeat MRI Brain (contrast as requested) is considered medically necessary 6 months after diagnosis, then annually for 5 years and thereafter per neurologist, neurosurgeon, or otolaryngologist, or any provider in consultation with a neurologist, neurosurgeon, or otolaryngologist.
- MRI Brain without and with contrast with attention to the internal auditory canals (CPT® 70553) is considered medically necessary after surgical resection and following stereotactic radiation therapy at 6 to 12 months to document the completeness of tumor removal and to serve as a baseline for further follow-up. Additional follow-up is done annually for 5 years and every 2 years thereafter.
- Limited MRI of the internal auditory canals (CPT® 70540, CPT® 70542, or CPT® 70543) is considered medically necessary when requested by the provider in place of a complete MRI Brain. Note: Limited MRI codes should not be used in addition to MRI Brain codes; IAC views are performed as additional sequences as part of the brain study. (See **General Guidelines – Anatomic Issues (HD-1.1)**)
- See **Primary Central Nervous System Tumors- General Considerations (ONC-2.1)** in the Oncology Imaging Guidelines for additional imaging requests for surgery

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Evidence Discussion (HD-33)

- MRI Brain is the preferred initial imaging modality for evaluation of persistent vertigo, vertigo associated with an abnormal neurologic exam, vertigo due to a suspected central cause, pulsatile or asymmetric tinnitus, and/or hearing loss (Wang et al., 2023; ACR 2024).
- CT Head is not recommended for the initial evaluation of suspected acoustic neuroma due to inferior soft tissue resolution when compared to MRI Brain. In addition, MRI Brain provides better visualization of the cerebellum, posterior fossa, and cranial nerves (Wang et al., 2023).
- MRI Brain, in this clinical scenario, is performed using specialized internal auditory canal (IAC) protocols, which include thin-section sequences to evaluate for vascular loops and small vestibular schwannomas (Expert Panel on Neurological Imaging et al., 2023).
- MRI Brain can diagnose lesions in the cerebellopontine angle including schwannoma, meningioma, and other posterior fossa tumors (Expert Panel on Neurological Imaging et al., 2023).
- 3D-Fast imaging employing steady state acquisition (3D-FIESTA) demonstrates significantly higher spatial resolution with superior imaging contrast between cranial nerves and CSF with a shorter acquisition time than conventional MRI scan (Zou & Hirvonen, 2017).
- Follow-up imaging is recommended 6 months after diagnosis to evaluate for rapid growth, then annually for 5 years (Olson et al., 2017; Goldbrunner et al., 2019; Somers et al., 2018). After 5 years, tumor growth that has remained stable is unlikely but may still occur, therefore, lifelong surveillance is advised with longer imaging intervals (Somers et al., 2018).
- Follow-up imaging after surgical resection and/or stereotactic radiosurgery to assess residual tumor and treatment response is performed at 6-12 months with additional follow-up annually for 5 years and every 2 years thereafter (Lin & Crane, 2017; Goldbrunner et al., 2019).

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References (HD-33)

v1.0.2027

1. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
2. Camelio, S., Schmid, U. D., Horsfield, M. A., Weller, M., Baertschi, A. J., & Krueger, G. (2000). Visualization of cranial nerves I–XII: Value of 3D CISS and T2-weighted fast spin-echo sequences. *European Radiology*, 10(7), 1061–1067. https://doi.org/10.1007/s003300000452
3. Expert Panel on Neurological Imaging, Jain, V., Policeni, B. A., Corey, A. S., Burns, J., Kirsch, C. F. E., Bykowski, J., Aulino, J. M., Berger, K. L., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2023). ACR Appropriateness Criteria® tinnitus: 2023 update. *Journal of the American College of Radiology*, 20(11 Suppl), S574–S591. https://doi.org/10.1016/j.jacr.2023.08.017
4. Goldbrunner, R., Weller, M., Régis, J., Lund-Johansen, M., Stavrinou, P., Reuss, D., Evans, D. G., Lefranc, F., Uhl, E., & Samii, M. (2019). EANO guideline on the diagnosis and treatment of vestibular schwannoma. *Neuro#Oncology*, 22(1), 31–45. https://doi.org/10.1093/neuonc/noz153
5. Kesavadas, C., Thomas, B., Kapilamoorthy, T., Hingwala, D., & Chatterjee, S. (2011). Applications of 3D CISS sequence for problem solving in neuroimaging. *Indian Journal of Radiology and Imaging,* 21(2), 90–97. https://doi.org/10.4103/0971-3026.82283
6. Lin, E. P., & Crane, B. T. (2017). The management and imaging of vestibular schwannomas. American Journal of Neuroradiology, 38(11), 2034–2043. https://doi.org/10.3174/ajnr.A5213
7. Olson, J. J., Kalkanis, S. N., & Ryken, T. C. (2017). Congress of Neurological Surgeons systematic review and evidence-based guidelines on the treatment of adults with vestibular schwannomas: Executive summary. *Neurosurgery*, 82(2), 129–134. https://doi.org/10.1093/neuros/nyx586
8. Somers, T., Kania, R., Waterval, J., & Van Havenbergh, T. (2018). What is the required frequency of MRI scanning in the wait-and-scan management? *Journal of International Advanced Otology*, 14(1), 85–89. https://doi.org/10.5152/iao.2018.5348
9. Wang, L. L., Thompson, T. A., Shih, R. Y., Ledbetter, L. N., Burns, J., Corey, A. S., Policeni, B. A., Kirsch, C. F. E., Aulino, J. M., Berger, K. L., Flanders, A. E., Hudgins, P. A., Hunt, C. H., Kotsenas, A. L., Phillips, C. D., & Shah, L. M. (2023). ACR Appropriateness Criteria® dizziness and ataxia. *American College of Radiology*. https://acsearch.acr.org/docs/69477/Narrative/
10. Zou, J., & Hirvonen, T. (2017). "Wait and scan" management of patients with vestibular schwannoma and the relevance of non-contrast MRI in the follow-up. *Journal of Otology*, 12(4), 174–184. https://doi.org/10.1016/j.joto.2017.08.002

Pineal/Colloid Cysts (HD-34)

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Pineal/Colloid Cysts (HD-34.1)

HD.PT.0034.1.A
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Criteria

Pineal Cysts

Pineal cysts are generally discovered incidentally and do not require surgical intervention.

- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for initial evaluation of pineal cysts if not already completed.
- Repeat MRI Brain is considered not medically necessary for most individuals with pineal cysts, but MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for the following:
  - New or worsening headache or focal neurologic deficits suggesting progression of cyst
  - Pre-operative planning

Colloid Cysts

- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for the initial evaluation of colloid cysts if not already completed.
- Repeat MRI Brain without contrast (CPT® 70551) or without and with contrast (CPT® 70553) is considered medically necessary for colloid cysts for the following:
  - In the presence of symptoms including syncope
  - Evaluation of CSF flow (CPT® 70551)
  - When requested by a neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon

Evidence Discussion (HD-34)

- MRI Brain is the preferred modality for the evaluation of intracranial cysts, due to its superior soft tissue resolution when compared to CT Head (Ajtai & Bertelson 2016, ACR 2024)
- Follow-up imaging of pineal cysts is supported for new or worsening headaches, focal neurologic deficits, and/or for surgical planning, otherwise, routine follow up is not supported (Tanaka et al., 2021; Jussila et al., 2017).
- In contrast to pineal cysts, colloid cysts may lead to sudden obstruction of cerebrospinal fluid flow at the foramen of Monro, resulting in neurologic symptoms,

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including syncope. Other than this scenario, follow-up imaging indications are similar to pineal cysts (Ajtai & Bertelson, 2016; Velicu et al. 2023).

Head Imaging Guidelines

References (HD-34)

v1.0.2027

1. Ajtai, B., & Bertelson, J. A. (2016). Imaging of intracranial cysts. *Continuum: Lifelong Learning in Neurology*, 22(5), 1553–1573. https://doi.org/10.1212/CON.0000000000000372
2. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
3. Jussila, M.-P., Olsén, P., Salokorpi, N., & Suo-Palosaari, M. (2017). Follow-up of pineal cysts in children: Is it necessary? *Neuroradiology*, 59(12), 1265–1273. https://doi.org/10.1007/s00234-017-1926-8
4. Tanaka, T., Arnold, L., Mazuru, D. G., Golzy, M., Carr, S. B., & Litofsky, N. S. (2021). Pineal cysts: Does anyone need long-term follow up? *Journal of Clinical Neuroscience*, 83, 146–151. https://doi.org/10.1016/j.jocn.2020.10.051
5. Velicu, M. A., Rossmann, K., Vahedi, A., Lavrador, J. P., Vergani, F., Bhangoo, R., Gullan, R., Booth, T., & Ashkan, K. (2023). On natural history and management of colloid cysts: Time to rethink? *World Neurosurgery*, 170, e188–e199. https://doi.org/10.1016/j.wneu.2022.10.094

Arachnoid Cysts (HD-35)

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Arachnoid Cysts (HD-35.1)

HD.AR.0035.1.A
v1.0.2027

Criteria

Arachnoid cysts arise in the middle or posterior fossa, and the majority of lesions are discovered incidentally and do not require surgical intervention.

- MRI Brain without contrast (CPT® 70551) or MRI Brain without and with contrast (CPT® 70553) is considered medically necessary for initial evaluation of arachnoid cysts if not already completed.
- Repeat MRI Brain is considered not medically necessary for most individuals with arachnoid cysts, except in the following scenarios:
  - New or worsening headache or focal neurologic deficits suggesting progression of cyst
  - Pre-operative planning
  - When requested by a neurologist or neurosurgeon or any provider in consultation with a neurologist or neurosurgeon

Evidence Discussion (HD-35)

- MRI Brain is the preferred modality for evaluation and follow up of intracranial arachnoid cysts, due to its superior soft tissue resolution when compared to CT Head (Ajtai & Bertelson, 2016; ACR, 2024).
- Most intracranial arachnoid cysts remain asymptomatic and follow up imaging is not routinely supported. Surgical intervention is reserved for those with symptoms (Ajtai & Bertelson, 2016; Hall et al., 2019).

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References (HD-35)

v1.0.2027

1. Ajtai, B., & Bertelson, J. A. (2016). Imaging of intracranial cysts. *Continuum: Lifelong Learning in Neurology,* 22(5), 1553–1573. https://doi.org/10.1212/CON.0000000000000372
2. American College of Radiology. (2024). ACR–ASNR–SPR practice parameter for the performance and interpretation of magnetic resonance imaging (MRI) of the brain. https://gravitas.acr.org/PPTS/
3. Hall, S., Smedley, A., Sparrow, O., Mathad, N., Waters, R., Chakraborty, A., & Tsitouras, V. (2019). Natural history of intracranial arachnoid cysts. *World Neurosurgery*, 126, e1315–e1320. https://doi.org/10.1016/j.wneu.2019.03.087

Sleep-Related Imaging (HD-37)

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General Guidelines Sleep-Related Imaging (HD-37.1)

HD.SL.0037.1.A
v1.0.2027

Criteria

- Hypersomnolence:
  - When there are focal neurologic signs or suspicion for an inflammatory neurologic process as the etiology. Recognition and treatment of a comorbid sleep disorders is paramount, and a complete neurologic history and examination should precede any request for advanced imaging.
    - MRI Brain without and with contrast (CPT® 70553) **OR**
    - MRI Brain without contrast (CPT® 70551)
- Central Sleep Apnea:
  - For unexplained central sleep apnea syndrome when a primary CNS etiology is suspected, i.e., unassociated with CHF, COPD, or other potential etiology. Specific etiologies should be stated for imaging requests, including but not limited to, suspected Chiari malformation, stroke, CNS demyelinating disease, posterior fossa lesion, anoxia, or infection.
    - MRI Brain without and with contrast (CPT® 70553) **OR**
    - MRI Brain without contrast (CPT® 70551)
- Obstructive Sleep Apnea (OSA):
  - Advanced imaging is considered not medically necessary in the evaluation and management of obstructive sleep apnea.
  - The gold standard for OSA diagnosis, evaluation and management is a sleep study.
  - See **Initial Sleep Diagnostic and Treatment Testing (SL-2.1)**
- Oral Appliance:
  - There is a lack of published case-controlled clinical studies in Sleep literature validating the use of advanced imaging with respect to oral appliance therapy (pre-treatment assessment).
  - Previous literature has demonstrated support for cephalometric studies (x-ray) in predicting treatment success.
  - Nasoendoscopy (sedated and non-sedated with provocative maneuvers such as Mueller maneuver) has been helpful as well in this regard.
  - Routine use of advanced imaging is considered not medically necessary at this time.

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- Upper Airway Surgery:
  - There is a lack of published case-controlled clinical studies in sleep literature validating the use of advanced imaging for upper airway surgery (pre-treatment assessment).
    - Examples of upper airway surgery include, but are not limited to, hypoglossal nerve stimulation, uvulopalatopharyngoplasty (UPPP), turbinate reduction, and nasal septoplasty
  - For congenital anomalies, see **Craniosynostosis Imaging (PEDHD-8.1)** and **Facial Anomalies (PEDHD-8.2)**
  - For dentofacial abnormalities, see **Dental/Periodontal/Maxillofacial Imaging (HD-30.2)**
  - Routine use of advanced imaging is considered not medically necessary at this time.
- For suspected sleep-related seizure imaging (see **Epilepsy and Other Seizure Disorders (HD-9)**)

Evidence Discussion (HD-37.1)

- An individual's management is rarely impacted by structural brain imaging in the evaluation of unexplained hypersomnolence. Instead, a thorough evaluation can result in an accurate diagnosis while safeguarding individuals from unnecessary exposure to radiation and over-reliance on incidental imaging findings as potential contributors to the symptom(s).
- Literature supports use of drug-induced sleep endoscopy (DISE) to predict effectiveness of upper airway surgery, particularly in individuals seeking upper airway stimulation or maxillomandibular advancement (Chang et al., 2023; Liu et al., 2020).
- Studies have demonstrated how upper airway MRI and CT can be used to determine sites of collapse in OSA patients (Volner et al., 2022; Li et al., 2016). Information from imaging could assist with determining which surgical interventions should be considered. Additionally, imaging may be helpful to determine why upper airway surgery is ineffective post-surgically (Volner et al., 2022). However, there are no large clinical trials that have shown improved surgical outcomes utilizing data from pre-treatment advanced imaging for OSA.
- The appropriate step in care for individuals with disordered sleep is to evaluate their breathing with polysomnography. Advanced imaging can lead to gaps in care and ineffective treatment of disordered sleep patterns. Instead, emphasis should be placed on holistic evaluation, including sleep history and sleep testing. Radiography (x-rays), 3D Advanced Imaging, or dynamic nasopharyngoscopy are not supported by evidence to being superior over polysomnography at this time.

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References (HD-37)

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1. Chang, J. L., Goldberg, A. N., Alt, J. A., Wu, A. W., Smith, T. L., Batra, P. S., Chandra, R. K., Setzen, M., Cunningham, T., de Almeida, J. R., Gouveia, C. J., Thomson, S., Musa, S. H., Camacho, M., & International Consensus Statement Working Group. (2023). International consensus statement on obstructive sleep apnea. *International Forum of Allergy & Rhinology*, 13(7), 1061–1482. https://doi.org/10.1002/alr.23079
2. Chen, H., Eckert, D. J., van der Stelt, P. F., Guo, J., Ge, S., Emami, E., Almeida, F. R., & Huynh, N. T. (2020). Phenotypes of responders to mandibular advancement device therapy in obstructive sleep apnea patients: A systematic review and meta-analysis. *Sleep Medicine Reviews*, 49, 101229. https://doi.org/10.1016/j.smrv.2019.101229
3. Deak, M. C., & Kirsch, D. B. (2014). Sleep-disordered breathing in neurologic conditions. *Clinics in Chest Medicine*, 35(3), 547–556. https://doi.org/10.1016/j.ccm.2014.06.009
4. Dunietz, G. L., Chervin, R. D., Burke, J. F., & Braley, T. J. (2020). Obstructive sleep apnea treatment disparities among older adults with neurological disorders. *Sleep Health*, 6(4), 534–540. https://doi.org/10.1016/j.sleh.2020.01.009
5. Guarda-Nardini, L., Manfredini, D., Mion, M., Heir, G., & Marchese-Ragona, R. (2015). Anatomically based outcome predictors of treatment for obstructive sleep apnea with intraoral splint devices: A systematic review of cephalometric studies. *Journal of Clinical Sleep Medicine*, 11(11), 1327–1334. https://doi.org/10.5664/jcsm.5198
6. Inspire Medical Systems, Inc. (2023). Inspire upper airway stimulation (UAS): FDA label.
7. Kapur, V. K., Auckley, D. H., Chowdhuri, S., Kuhlmann, D. C., Mehra, R., Ramar, K., & Harrod, C. G. (2017). Clinical practice guideline for diagnostic testing for adult obstructive sleep apnea. *Journal of Clinical Sleep Medicine,* 13(3), 479–504. https://doi.org/10.5664/jcsm.6506
8. Kotuła, J., Kuc, A. E., Lis, J., Kawala, B., & Sarul, M. (2022). New sagittal and vertical cephalometric analysis methods: A systematic review. *Diagnostics*, 12(7), 1723. https://doi.org/10.3390/diagnostics12071723
9. Lee, C. H., Ng, W. Y., Hau, W., Ho, H. H., Tai, B. C., Chan, M. Y., Richards, A. M., & Tan, H. C. (2013). Excessive daytime sleepiness is associated with longer culprit lesion and adverse outcomes in patients with coronary artery disease. *Journal of Clinical Sleep Medicine*, 9(12), 1267–1272. https://doi.org/10.5664/jcsm.3266
10. Li, H.-Y., Lo, Y.-L., Wang, C.-J., Chen, N.-H., Lin, Y., & Fang, T.-J. (2016). Dynamic drug-induced sleep computed tomography in adults with obstructive sleep apnea. *Scientific Reports*, 6, 35849. https://doi.org/10.1038/srep35849
11. Liu, S. Y., Riley, R. W., & Yu, M. S. (2020). Surgical algorithm for obstructive sleep apnea: An update. *Clinical and Experimental Otorhinolaryngology*, 13(3), 215–224. https://doi.org/10.21053/ceo.2020.01053
12. Murray, B. J. (2016). A practical approach to excessive daytime sleepiness: A focused review. *Canadian Respiratory Journal*, 2016, 4215938. https://doi.org/10.1155/2016/4215938
13. Patil, S. P., Ayappa, I. A., Caples, S. M., Kimoff, R. J., Patel, S. R., & Harrod, C. G. (2019). Treatment of adult obstructive sleep apnea with positive airway pressure. *Journal of Clinical Sleep Medicine*, 15(2), 335–343. https://doi.org/10.5664/jcsm.7640
14. Ramar, K., Dort, L. C., Katz, S. G., Lettieri, C. J., Harrod, C. G., Thomas, S. M., & Chervin, R. D. (2015). Clinical practice guideline for the treatment of obstructive sleep apnea and snoring with oral appliance therapy. *Journal of Clinical Sleep Medicine*, 11(7), 773–827. https://doi.org/10.5664/jcsm.4858
15. Sahlin, C., Sandberg, O., Gustafson, Y., Bucht, G., Carlberg, B., Stenlund, H., & Franklin, K. A. (2008). Obstructive sleep apnea is a risk factor for death in patients with stroke: A 10-year follow-up. *Archives of Internal Medicine,* 168(3), 297–301. https://doi.org/10.1001/archinternmed.2007.70
16. Sutherland, K., Vanderveken, O. M., Tsuda, H., Marklund, M., Gagnadoux, F., Kushida, C. A., Lowe, A. A., & Cistulli, P. A. (2014). Oral appliance treatment for obstructive sleep apnea: An update. *Journal of Clinical Sleep Medicine*, 10(2), 215–227. https://doi.org/10.5664/jcsm.3460
17. Trotti, L. M., & Bliwise, D. L. (2017). Brain MRI findings in patients with idiopathic hypersomnia. *Clinical Neurology and Neurosurgery*, 157, 19–21. https://doi.org/10.1016/j.clineuro.2017.03.010

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18. Volner, K., Chao, S., & Camacho, M. (2022). Dynamic sleep MRI in obstructive sleep apnea: A systematic review and meta-analysis. *European Archives of Oto#Rhino#Laryngology*, 279(2), 595–607. https://doi.org/10.1007/s00405-021-06942-y
19. Yaggi, H. K., Concato, J., Kernan, W. N., Lichtman, J. H., Brass, L. M., & Mohsenin, V. (2005). Obstructive sleep apnea as a risk factor for stroke and death. *New England Journal of Medicine*, 353(19), 2034–2041. https://doi.org/10.1056/NEJMoa043104

Head Imaging Guidelines