

NEURO MR ORDERING AND PROTOCOLING –HEAD/BRAIN

- *Altered mental status; congenital anomalies; develop. delay; headache; hydrocephalus; psychosis*
 - **Order name:** MRI BRAIN WO CONTRAST **IV contrast:** No
 - **EPIC:** [adult brain] [without contrast]
For short, fast evaluation of hydrocephalus/shunt (with T2 HASTE only) choose [Rapid hydro]

- *Cerebral aneurysm, nonruptured; AVM, AVF, HHT screening; intracerebral hemorrhage; vasculitis*
 - **Order name:** MRI HEAD W WO CONTRAST MRA HEAD WO CONTRAST **IV contrast:** Yes
 - **EPIC:** [adult brain] [with and without contrast] [MRA COW (TOF)]
AVMs and HHT: add [AVM/AVF/HHT]
Aneurysm f/u, CNS vasculitis: add [VWI (intracranial)]; temporal arteritis: [VWI (Temp. Art.)]

- *Brain infection (meningitis, abscess, empyema); phakomatoses; mitochondrial and metabolic disease*
 - **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - **EPIC:** [adult brain] [with and without contrast]

- *Cranial neuropathies: trigeminal neuralgia, oculomotor and abducens palsies, perineural spread*
 - **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - **EPIC:** [skull base (brain)] [with and without contrast]
For pulsatile tinnitus: add [pulsatile tinnitus]

- *CSF flow (aqueductal stenosis, Chiari malformations)*
 - **Order name:** MRI BRAIN WO CONTRAST
 - **IV contrast:** No (unless suspicion of obstructing mass/lesion)
 - **EPIC:** [adult brain] [CSF flow] [without contrast]

- *CSF leak*
 - **Order name:** MRI BRAIN WO CONTRAST **IV contrast:** No
 - **EPIC:** [adult brain] [CSF leak] [without contrast]

- *Demyelination (multiple sclerosis, NMO, ADEM)*
 - **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - **EPIC:** [MS] [with and without contrast]
Note: (1) use DOTAREM for MS; (2) clinicians may choose to do study *without* contrast.

- *Dementia; memory loss*
 - **Order name:** MRI BRAIN WO CONTRAST **IV contrast:** No
 - **EPIC:** [Dementia/NPH]

*****NOTE: DOTAREM is the preferred contrast agent in children.**

- *Orbital infection/inflammation (cellulitis, abscess, pseudotumor, thyroid ophthalmopathy) and tumors*
 - o **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - o **EPIC:** [CN2 (orbits)] [with and without contrast]

- *Pituitary: primarily for MICROadenomas, rest can have skull base/brain unless otherwise ordered*
 - o **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - o **EPIC:** [pituitary] [with and without contrast] **Note:** Use DOTAREM for pituitary tumor follow ups

- *Trauma (MVA, head injury, assault, diffuse axonal injury, non-accidental trauma)*
 - o **Order name:** MRI BRAIN WO CONTRAST **IV contrast:** No
 - o **EPIC:** [adult brain] *OR* [pediatric trauma] [without contrast]
 - o Pediatric trauma may be requested in lieu of CT for peds pts w near-normal neuro exam.

- *Tumor (malig neoplasm); tumor post op*
 - o **Order name:** MRI BRAIN W WO CONTRAST **IV contrast:** Yes
 - o **EPIC:** [tumor] [with and without contrast]
 - o **Note:** for r/o mets → routine brain; for treated mets → tumor protocol

- *Seizures/convulsions*
 - o **Order name:** MRI BRAIN WO CONTRAST or MRI BRAIN W WO CONTRAST
 - o **IV contrast:** Yes (adults, new onset) No (children)
 - o **EPIC:** [seizure] [without contrast] *OR* [with and without contrast]

- *Hearing loss; SNHL; vertigo; dizziness and giddiness; cholesteatoma*
 - o **Order name:** MRI BRAIN WO CONTRAST or MRI BRAIN W WO CONTRAST
 - o **IV contrast:** Yes (adults) No (children)
 - o **EPIC:** [CN 8] [without contrast] *OR* [with and without contrast]

- *Stroke; facial weakness; cerebral edema; speech disturbance; amaurosis fugax; transient cerebral ischemia*
 - o **Order name:** MRI HEAD W WO CONTRAST **IV contrast:** Yes
 - o **EPIC:** [stroke] [with and without contrast]
 - o **Note:** MRA only if ordered.

- *Venous thrombosis; pseudotumor cerebri*
 - o **Order name:** MRI BRAIN W WO CONTRAST, MRV HEAD W WO CONTRAST
 - o **EPIC:** [adult brain] [with and without contrast] [MRV] **IV contrast:** Yes

*substitute [adult brain] for [pediatric brain] when protocoling in Epic as needed.

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NEURO MR ORDERING AND PROTOCOLING –NECK/SPINE

NECK

- *Brachial plexus lesions: trauma, avulsion, inflammation (plexitis), metastases*
 - o **Order name:** MRI BRACHIAL PLEXUS [LEFT/RIGHT/BILATERAL] W WO CONTRAST
 - o **IV contrast:** Yes
 - o **EPIC:** [with and without contrast] [brachial plexus]
- *Dissection; arterial thrombosis; carotid stenosis; aneurysm; pseudoaneurysm; vascular injury*
 - o **Order name:** MRA NECK W WO CONTRAST
 - o **IV contrast:** Yes
 - o **EPIC:** [with and without contrast] [MRA carotid (dissection)]
- *Infection (abscess, swelling, suppurative adenitis, pharyngitis); fever; mass swelling or lump in neck; tumors; malignant neoplasm; enlargement of lymph nodes; branchial cleft lesions*
 - o **Order name:** MRI ORBIT FACE NECK W WO CONTRAST
 - o **IV contrast:** Yes
 - o **EPIC:** [with and without contrast] [soft tissue neck]
 - o ENT may order as skull base/neck for staging
- *Temporomandibular arthritis; TMJ; jaw pain*
 - o **Order name:** MRI TMJ WO CONTRAST
 - o **IV contrast:** No (unless suspected infection or inflammation)
 - o **EPIC:** [TMJ] [without contrast]

SPINE

- *Spondylosis; pain, lumbar spine-lumbago; sciatica; spinal stenosis; radiculopathy; HNP/disc displcmt); trauma; scoliosis, idiopathic*
 - o **Order name:** MRI [CERVICAL/THORACIC/LUMBAR] SPINE WO CONTRAST
 - o **IV contrast:** No
 - o **EPIC:** [cervical/thoracic/lumbosacral spine] [without contrast]
- *Infection; tumor (malig neoplasm, metastasis, multiple myeloma); demyelination (multiple sclerosis, NMO); cord ischemia; numbness/disturbance of skin sensation; pathologic fracture; syringomyelia and syringobulbia*
 - o **Order name:** MRI [CERVICAL/THORACIC/LUMBAR] SPINE W WO CONTRAST
 - o **IV contrast:** Yes **Note:** DOTAREM for all MS patients
 - o **EPIC:** [cervical/thoracic/lumbosacral spine] [with and without contrast]
 - o For MS, need cervical +/- thoracic spine (no lumbar). For infarct/ischemia, add DWI.
 - o Syringomyelia/syringobulbia may be done without contrast if there is a clear etiology (Chiari) or an underlying lesion has been ruled out.
- *Post surgery (e.g. fusion)*
 - o **Order name:** MRI [CERVICAL/THORACIC/LUMBAR] SPINE W WO CONTRAST
 - o **IV contrast:** Yes (usually)
 - o **EPIC:** [cervical/thoracic/lumbosacral spine] [with and without contrast]
 - o Follow up without contrast is okay unless there is a question of disc vs. scar or infection.

*****NOTE: DOTAREM is the preferred contrast agent in children.**