


**Pediatric **  
**Brain MRI and Brain CT**  
**Test Request Tip Sheet**

- MRI is almost always preferred over CT scan; if ordering a CT, CLEARLY document why an MRI isn't appropriate. CT imaging can be appropriate for evaluation of select cases of skull deformities.
- Chronic headache (including chronic migraine) is an indication for advanced imaging ONLY if the headaches are increasing in frequency or have changed in severity or new neurological deficits are present.


**Radiation Exposure**

Brain MRI: 0 mSv

Brain CT: 4 mSv

***Radiation exposure should be limited whenever possible.***

***With and without contrast doubles the radiation dose.***



We follow Choosing Wisely recommendations for headache and syncope (loss of consciousness) as shown below.

**Pediatric Considerations from Choosing Wisely **

*As part of Choosing Wisely, each participating specialty society has created lists of "Things Physicians and Patients Should Question" that provide specific, evidence-based recommendations that physicians and patients should discuss to help make wise decisions about the most appropriate care based on their individual situations. The items below represent the recommendations associated with brain CT and MRI.*

- **Neuroimaging (CT, MRI) isn't necessary in a child with simple febrile seizure.** *(American Academy of Pediatrics)*
- **CT scans aren't necessary in the immediate evaluation of minor head injuries;** clinical observation/Pediatric Emergency Care Applied Research Network (PECARN) criteria should be used to determine whether imaging is indicated. *(American Academy of Pediatrics)*
- **Avoid CT scans of the head in emergency department patients with minor head injury who are at low risk based on validated decision rules.** *(American College of Emergency Physicians)*

**Other Imaging Considerations from Choosing Wisely**

- **Don't perform neuro-imaging studies in patients with stable headaches that meet criteria for migraine.** *(American Headache Society)*
- **Don't perform CT imaging for headache when MRI is available, except in emergency settings.** *(American Headache Society)*
- **In the evaluation of simple syncope and a normal neurological examination, don't obtain brain imaging studies (CT or MRI).** *(American College of Physicians)*
- **Don't do imaging for uncomplicated headache.** *(American College of Radiology)*
- **Don't order a CT scan of the head/brain for sudden hearing loss.** *(American Academy of Otolaryngology —Head and Neck Surgery Foundation)*

Choosing Wisely® is an initiative of the ABIM Foundation to help physicians and patients engage in conversations about the overuse of tests and procedures and support physician efforts to help patients make smart and effective care choices. Recognizing the importance of physicians and patients working together, leading specialty societies, along with *Consumer Reports*, have joined Choosing Wisely to help improve the quality and safety of health care in America.