

Table 11: Evidence Regarding Overuse of Imaging for the Evaluation of Children with Simple Febrile Seizure

Type of Evidence	Key Findings	Level of Evidence (USPSTF Ranking*)	Citations
Clinical guidelines	The American Academy of Pediatrics assembled a Subcommittee on Febrile Seizures for neurodiagnostic evaluation of the child with a simple febrile seizure. Findings are summarized as follows: Routine laboratory tests, electroencephalography, and neuroimaging are not recommended in patients with simple febrile seizures.	III	American Academy of Pediatrics Subcommittee on Febrile Seizures. Clinical Practice Guideline—Febrile Seizures: Guideline for the neurodiagnostic evaluation of the child with a simple febrile seizure. <i>Pediatrics</i> 2011; 127(2): 389-394.
Clinical guideline	The American Academy of Pediatrics convened a Steering Committee on Quality Improvement and Management of Febrile Seizures in 2008. Their conclusion: Parents should be reassured after a simple febrile seizure that there is no negative impact on intellect or behavior, and no increased risk of death.	III	American Academy of Pediatrics Steering Committee on Quality Improvement and Management, Subcommittee on Febrile Seizures. Febrile seizures: clinical practice guideline for the long-term management of the child with simple febrile seizures. <i>Pediatrics</i> 2008;121(6):1281–1286.
Appropriateness criteria	The ACR has completed multiple comprehensive, evidence-based reviews of radiologic literature, clinical practice literature, and expert consultation. In summary, the ACR has advised that simple febrile seizures do not require imaging evaluation.	III	American College of Radiology (ACR) Expert Panel on Pediatric Imaging: Dory CE, Coley BD, Karmazyn B, et al. ACR Appropriateness Criteria: Seizures—Child. American College of Radiology, revised 2012. Available at: http://www.acr.org/Quality-Safety/Appropriateness-Criteria/Diagnostic/~media/ACR/Documents/AppCriteria/Diagnostic/SeizuresChild.pdf . Accessed May 15, 2015.

Note: USPSTF criteria for assessing evidence at the individual study level are as follows: I) Properly powered and conducted randomized controlled trial (RCT); well-conducted systematic review or meta-analysis of homogeneous RCTs. II) Well-designed cohort or case-control analytic study. III) Opinions of respected authorities, based on clinical experience; descriptive studies or case reports; reports of expert committees.

Figure 1

Date of origin: 1995
Last review date: 2012

**American College of Radiology
ACR Appropriateness Criteria®**

Clinical Condition: Seizures — Child

Variant 2: Simple febrile seizures.

Radiologic Procedure	Rating	Comments	RRL*
MRI head without contrast	2		O
MRI head without and with contrast	2		O
CT head without contrast	2		☼☼☼
CT head without and with contrast	2		☼☼☼☼
CT head with contrast	2		☼☼☼
SPECT head	1		☼☼☼
FDG-PET/CT head	1		☼☼☼☼
US head	1		O
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

Figure 2

Relative Radiation Level Designations		
Relative Radiation Level*	Adult Effective Dose Estimate Range	Pediatric Effective Dose Estimate Range
O	0 mSv	0 mSv
☼	<0.1 mSv	<0.03 mSv
☼☼	0.1-1 mSv	0.03-0.3 mSv
☼☼☼	1-10 mSv	0.3-3 mSv
☼☼☼☼	10-30 mSv	3-10 mSv
☼☼☼☼☼	30-100 mSv	10-30 mSv
*RRL assignments for some of the examinations cannot be made, because the actual patient doses in these procedures vary as a function of a number of factors (eg, region of the body exposed to ionizing radiation, the imaging guidance that is used). The RRLs for these examinations are designated as "Varies".		

From: American College of Radiology (ACR) Expert Panel on Pediatric Imaging: Dory CE, Coley BD, Karmazyn B, et al. ACR Appropriateness Criteria: Seizures—Child. American College of Radiology, revised 2012. Available at: <http://www.acr.org/Quality-Safety/Appropriateness-Criteria/Diagnostic/~media/ACR/Documents/AppCriteria/Diagnostic/SeizuresChild.pdf>. Accessed May 15, 2015. Reprinted with permission of the American College of Radiology. No other representation of this material is authorized without expressed, written permission from the American College of Radiology. Refer to the ACR website at [ACR Appropriateness Criteria® - American College of Radiology](http://www.acr.org/Quality-Safety/Appropriateness-Criteria) for the most current and complete version of the ACR Appropriateness Criteria®.