



# DIAGNOSTIC ASSESSMENT OF THE CHILD WITH STATUS EPILEPTICUS

This is a summary of the American Academy of Neurology (AAN) and Child Neurology Society (CNS) evidence-based guideline reviewing all available evidence on the assessment of the child with status epilepticus (SE).

Status epilepticus (SE) in children, as in adults, is a life-threatening emergency that requires prompt recognition and immediate treatment. In the United States, SE occurs in more than 30,000 children annually. This guideline aims to help physicians determine the causes of SE.

Please refer to the full guideline for detailed findings and supporting evidence at [www.aan.com](http://www.aan.com).

## RECOMMENDATIONS FOR THE ASSESSMENT OF LABORATORY STUDIES

<b>Good (Level B) evidence</b>	Anti-epileptic drug (AED) levels	AED levels should be considered when a child with epilepsy on AED prophylaxis develops SE ( <b>Level B</b> ).
<b>Weak (Level C) evidence</b>	Toxicology testing	Toxicology testing may be considered in children with SE, when no apparent etiology is immediately identified, as the frequency of ingestion as a diagnosis was at least 3.6% ( <b>Level C</b> ). To detect a specific ingestion, suspected because of the clinical history, it should be noted that a specific serum toxicology level is required, rather than simply urine toxicology screening.
<b>Insufficient (Level U) evidence</b>	Blood cultures	There are insufficient data to support or refute whether blood cultures should be done on a routine basis in children in whom there is no clinical suspicion of infection ( <b>Level U</b> ).
<b>Insufficient (Level U) evidence</b>	Lumbar puncture (LP)	There are insufficient data to support or refute whether LP should be done on a routine basis in children in whom there is no clinical suspicion of a CNS infection ( <b>Level U</b> ).

## RECOMMENDATIONS FOR THE ASSESSMENT OF METABOLIC AND GENETIC TESTING

<b>Weak (Level C) evidence</b>	Inborn errors of metabolism	Studies for inborn errors of metabolism may be considered when the initial evaluation reveals no etiology, especially if there is a preceding history suggestive of a metabolic disorder ( <b>Level C</b> ).
<b>Insufficient (Level U) evidence</b>		The specific studies obtained are dependent on the history and the clinical examination. There is insufficient evidence to support or refute whether such studies should be done routinely ( <b>Level U</b> ).
<b>Insufficient (Level U) evidence</b>	Genetic testing	There are insufficient data to support or refute whether genetic testing (chromosomal or molecular studies) should be done routinely in children with SE ( <b>Level U</b> ).

## RECOMMENDATIONS FOR THE ASSESSMENT OF ELECTROENCEPHALOGRAPHY

<b>Weak (Level C) evidence</b>	Generalized or focal convulsive SE	An EEG may be considered in a child presenting with new onset SE as it may determine whether there are focal or generalized abnormalities that may influence diagnostic and treatment decisions ( <b>Level C</b> ).
<b>Weak (Level C) evidence</b>	Pseudostatus epilepticus	An EEG may be considered in a child presenting with SE if the diagnosis of pseudostatus epilepticus is suspected ( <b>Level C</b> ).
<b>Insufficient (Level U) evidence</b>	Nonconvulsive SE (NCSE)	Although NCSE occurs in children who present with SE, there are insufficient data to support or refute recommendations regarding whether an EEG should be obtained to establish this diagnosis ( <b>Level U</b> ).

## RECOMMENDATIONS FOR THE ASSESSMENT OF NEUROIMAGING

<b>Weak (Level C) evidence</b>	Neuroimaging studies <ul style="list-style-type: none"> <li>• CT</li> <li>• MRI</li> </ul>	Neuroimaging may be considered for the evaluation of the child with SE if there are clinical indications or if the etiology is unknown ( <b>Level C</b> ). If neuroimaging is done, it should only be done after the child is appropriately stabilized and the seizure activity controlled.
<b>Insufficient (Level U) evidence</b>		There is insufficient evidence to support or refute recommending routine neuroimaging ( <b>Level U</b> ).

### Recommendations for Future Research

1. Prospective studies are needed to define what factors, or combination of factors, may precipitate SE in children.
2. Controlled prospective studies should be conducted to define the role for routine or selective laboratory investigations in the evaluation of children with SE. This should include studies of inborn errors of metabolism, and specific serum toxicology levels, as a cause of SE in children with the diagnostic tests now available.
3. Controlled prospective blinded studies should be conducted to define the setting and timing for EEG done in the evaluation of children with SE, and to determine if postictal and unexpected ictal EEG findings have prognostic and treatment significance.
4. Controlled prospective studies with blinded assessments should examine the yield of neuroimaging, either routine or selective, in children with SE.
5. Prospective studies are needed to determine the frequency of NCSE after the control of convulsive SE in children, its etiology, and prognostic significance.

This is an educational service of the American Academy of Neurology. It is designed to provide members with evidence-based guideline recommendations to assist with decision-making in patient care. It is based on an assessment of current scientific and clinical information, and is not intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on the circumstances involved. Physicians are encouraged to carefully review the full AAN guidelines so they understand all recommendations associated with care of these patients.

This guideline summary is evidence-based. The AAN uses the following definitions for the level of recommendation and classification of evidence.

**Class of Evidence:** "Class" refers to the quality of research methods employed in the reviewed literature; **Class I:** A statistical, population-based sample of patients studied at a uniform point in time (usually early) during the course of the condition. All patients undergo the intervention of interest. The outcome, if not objective, is determined in an evaluation that is masked to the patients' clinical presentations; **Class II:** A statistical, non-referral-clinic-based sample of patients studied at a uniform point in time (usually early) during the course of the condition. Most (>80%) patients undergo the intervention of interest. The outcome, if not objective, is determined in an evaluation that is masked to the patients' clinical presentations; **Class III:** A selected, referral-clinic-based sample of patients studied during the course of the condition. Some patients undergo the intervention of interest. The outcome, if not objective, is determined in an evaluation by someone other than the treating physician; **Class IV:** Expert opinion, case reports, or any study not meeting criteria for Class I to III. This is a new Classification scheme developed by the Quality Standards Subcommittee (QSS) for studies related to determining the yield of established diagnostic and screening tests or interventions and is appropriate only when the diagnostic accuracy of the test or intervention is known to be good. Additionally, the abnormality potentially identified by the screening intervention should be treatable or should have important prognostic implications. This Classification is different than others currently recommended by the QSS that have been published in recent parameters that relate to diagnostic, prognostic, or therapeutic studies.

**\*Recommendation Level:** "Level" refers to the strength of the practice recommendation based on the reviewed literature. **Level A**=Established as effective, ineffective, or harmful for the given condition in the specified population. (Level A rating requires at least two consistent Class I studies.) **Level B**=Probably effective, ineffective, or harmful for the given condition in the specified population. (Level B rating requires at least one Class I study or at least two consistent Class II studies.) **Level C**=Possibly effective, ineffective, or harmful for the given condition in the specified population. (Level C rating requires at least one Class II study or two consistent Class III studies.) **Level U**=Data inadequate or conflicting; given current knowledge, treatment is unproven.



CHILD NEUROLOGY SOCIETY

1000 West County Road E • Suite 290 • St. Paul, MN 55126  
[www.childneurologysociety.org](http://www.childneurologysociety.org)  
 (651) 486-9447



1080 Montreal Avenue • St. Paul, MN 55116  
[www.aan.com](http://www.aan.com) • [www.thebrainmatters.org](http://www.thebrainmatters.org)  
 (651) 695-1940