# Pediatric Status Epilepticus Algorithm*

**Adapted with permission from TREKK for EMS for Children Innovation and Improvement Center*

## Recognition of Status Epilepticus

An unresponsive patient with either one of the following has convulsive status epilepticus:

- Seizure >5 min and/or ongoing seizure on arrival to ED
- 2 or more seizures without full recovery of consciousness between seizures

## Pre-Hospital Care

- Ensure scene safety
- If Basic Life Support (BLS) Provider, follow Initial Management within scope
- If Advanced Life Support (ALS) Provider, follow Initial Management and GIVE first line agent

## Initial Management

[ ] Initiate Airway, Breathing and Circulation (ABCs), cardiorespiratory and BP monitoring

- $O_2$ 10-15 L/min non-rebreather mask and place end tidal waveform capnography if available
- Monitor for respiratory depression, hypotension, arrhythmias

[ ] Give first line agent: Benzodiazepine (refer to box below)

- Establish IV line (NS) if needed for agent administration

[ ] Rapid bedside glucose

- If less than 60 mg/dL, give 5 mL/kg D10W IV push, then start D10W infusion @ 5 mL/kg/hr (MAX 250 mL/hr). Recheck glucose in 5 min.

- Give acetaminophen 15 mg/kg (MAX 650 mg) PR if febrile
- Consider other labs with IV access if appropriate:
  - Electrolytes, blood gas, calcium, CBC, serum glucose
  - Other: anticonvulsant drug levels, LFTs, blood culture

## Ongoing seizure

**5 min**

**[ ] First Line Agents: Benzodiazepines**

If no IV access, give 1st dose of:

- **Midazolam 0.2 mg/kg IM or intranasal (MAX 10 mg** 1 mL/nostril of 5mg/mL solution) **OR** one of:
  - Midazolam buccal 0.5 mg/kg (MAX 10 mg)
  - Diazepam rectal 0.5 mg/kg (MAX 20 mg)

If IV access, give 1st dose of:

- **Lorazepam 0.1 mg/kg (MAX 4 mg) IV over 2 min OR**:
- Midazolam IV 0.1 mg/kg (MAX 10 mg) IV over 2 min

! Reassess ABCs, monitor for respiratory depression
**If still seizing:**

**10 min**

**[ ] Repeat dose of First Line Agent (as above)**

- Obtain intraosseous (IO) access if failed IV attempts x 2 and persistent seizure
- Prepare second line agent

! Reassess ABCs, monitor for respiratory depression
**If still seizing:**

**15 min**

**[ ] Second Line Agents:**

Give one of:

- **Levetiracetam 60 mg/kg/dose (MAX 4500 mg) IV/IO over 10 min OR**
- **Fosphenytoin (20 mg PE*/kg in NS, MAX 1500 mg PE*) IV/IO over 10 min OR**
- **Valproate 40 mg/kg (MAX 3000 mg) over 10 min OR**
- Phenytoin (20 mg/kg in NS, MAX 1000 mg) IV/IO over 20 min OR
- Phenobarbital (20 mg/kg in NS, MAX 1000 mg) IV/IO over 20 min
- Prepare third line agent

*PE = Phenytoin Equivalents

**Alert pediatric referral center**

! Reassess ABCs, monitor for respiratory depression.
**If still seizing:**

**30 min**

**Third Line Agents:**

Administer alternative anticonvulsant from second line agent used. (Eg. if fosphenytoin/phenytoin given, use levetiracetam, phenobarbital or valproate)

### CAUTION!

- Do not give more than 2 doses of benzodiazepines
- Benzodiazepines and phenobarbital may cause respiratory depression, especially if given rapidly

### TO CONSIDER:

- For infants less than or equal to 6 months, phenobarbital or levetiracetam are more effective anticonvulsants
- Avoid phenytoin/ fosphenytoin in intoxicated patients and those with Dravet syndrome
- If patient is currently on phenytoin give partial loading dose of phenytoin (10 mg/kg) or fosphenytoin (10 mg PE*/kg)

## Transfer to Higher Level of Care

**Discuss further management:**

- Need for intubation vs. bag-mask ventilation; hypercapnia is common, will resolve with seizure cessation and non-invasive respiratory support
- Additional workup including full septic workup, use of antibiotics/ antivirals, brain imaging
- Persistent altered level of consciousness possibly related to non-convulsive status epilepticus or severe underlying brain disorder
- Other anticonvulsants (eg. midazolam infusion, barbiturates, ketamine, pyridoxine)

PedsPacs
*Point-of-Care Tools by TREKK*

trekk *Translating Emergency Knowledge for Kids*

Innovation and Improvement Center EIIC Emergency Medical Services for Children

*A PedsPac resource from TREKK.*
*For more tools in the series, call 204-975-7744 or visit **trekk.ca***

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**TREKK PedsPacs contain point-of-care tools and resources to assist with pediatric emergency care, and are to be used in conjunction with TREKK education outreach and simulation skills days.**

**The purpose of these documents is to provide health care professionals with cognitive aids to deliver best-evidence management of specific acute care conditions in children. These tools were produced by the TREKK PedsPac group led by Dr. Mona Jabbour of the Children's Hospital of Eastern Ontario Research Institute, and use the best available knowledge at the time of publication. However, health care professionals should continue to use their own judgment and take into consideration context, resources and other relevant factors.**

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