## Prolonged seizures

**Generalised seizure for ≥ 5 mins**

**Status epilepticus**

Generalised seizure lasting for ≥ 30 mins OR Two or more seizures over a 30 min period without full recovery between them

### Causes
- Cerebro-vascular event (infarct or bleed)
- Space occupying lesion/blocked VP shunt
- Venous sinus thrombosis
- Overdose (accidental or self harm)
- Hypoxia
- Metabolic problem (HYPERAMMONAEMIA)
- Fever
- Known epilepsy
- CNS infection
- Hyponatraemia, hypoglycaemia
- Head injury (acute or previous)

### Issues
- Hypoventilation post benzodiazepines
- Failure to recognise on-going seizures
- Failure to identify and treat cause
- Refractory status epilepticus

### Management principles
- Maintain ABCD
- Administer high flow oxygen
- Stop seizures as soon as possible
- Find and treat cause

### Urgent interventions
- **Glucose** aim for 4-6 mmols/L
- **Hyponatraemia**
  - If Na < 125 mmols/L
  - Give bolus 3 mls/kg 2.7% or 3% sodium chloride
  - **Keep temp <37°C**
- **Bacterial Meningitis**
  - Appropriate antibiotic cover
- **Encephalitis** add Aciclovir
- **Check ammonia**

### Indications for CT scan
- Refractory seizures
- Focal signs
- New focal seizure
- Trauma / NAI
- Suspect space occupying lesion
- VP shunt in-situ
- Suspected raised ICP

Remember to request a contrast enhanced scan if suspicion of venous sinus thrombosis

### Management of refractory seizures: Discuss urgently with SORT
- Commence Midazolam infusion: 100 mcg/kg bolus and start at 100 mcg/kg/hr
- Repeat 100 mcg/kg bolus every 5 minutes and increase infusion rate by 100 mcg/kg/hr until seizures controlled
- Consider Levetiracetam loading 20mg/kg
- Consider further half load of phenytoin or loading with phenobarbitone
- Consider Thiopentone infusion
- Obtain central access as hypotension will develop and vasopressors may be required
- Find and treat cause

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**Treatment of prolonged seizures**

**WARNING: IN CHILDREN WITH**

Profound respiratory depression
Signs of raised intracranial pressure
OR severe sepsis

These guidelines ARE NOT APPLICABLE AND these children need immediate intubation and ventilation

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**0 – 10 min from onset of seizure**

**Intravenous access: YES**

- Lorazepam IV 0.1mg/kg (MAX 4mg)

**Intravenous access: NO**

- Diazepam PR ac[Midazolam buccal](SEE DRUG CALCULATOR)

### 10 – 20 Min

- Lorazepam IV 0.1mg/kg (MAX 4mg)

### Is the child normally on phenytoin?

- **NO**
  - Phenytoin IV 20mg/kg
    - Give over 20 mins
    - Extravasation risk
    - Consider PR Paraldehyde if not already given

- **YES**
  - Phenobarbitone IV 20mg/kg
    - Give over 20 mins
    - Watch for hypotension
    - Consider PR Paraldehyde if not already given

### 20 – 40 Min

- Paraldehyde PR 0.8ml/kg (ready diluted – MAX 20mls)

### IO if still no IVI access

### 40 – 60 Min

- ANAESTHETISE TO TERMINATE SEIZURE: INTUBATE/VENTILATE
  - Ketamine or Thiopentone and muscle relaxant

### 60 Min

- REASSESSMENT
  - If seizures persist see management of refractory seizures
  - Remember if muscle relaxed will need to assess HR, BP and pupillary reactions to determine if seizures controlled
  - If seizures controlled, wake up and consider extubation