

# M07: Neonatal Seizures

Wes Bihlmayr

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Reviewed:

## Introduction

- Identification of seizures in neonates and children can be difficult. Signs of seizures can include rhythmic lip smacking, blinking, or "bicycle" movement of the legs. Paramedics should treat ongoing seizures while considering reversible causes.
- The primary concern in neonatal seizures is hypoglycemia, which should be identified and corrected with a 2 mL/kg D10W bolus until the blood glucose is greater than 2.6 mmol/L. If IV access cannot be obtained, glucagon can be given intramuscularly (0.03 mg/kg).
- The preferred first line medication for control of a seizure lasting longer than 5 minutes, or multiple seizures without improving level of consciousness is a benzodiazepine. Midazolam can be administered via the intranasal (IN), intravenous (IV) or intramuscular (IM) route.
  - IN 0.2 mg/kg
  - IV 0.15 mg/kg
  - IM 0.2 mg/kg

## Additional Treatment Information

- If intractable seizure despite primary and secondary pharmacological treatment, critical care paramedics may consult with the transport advisor to consider:
  - a loading dose of midazolam 50 mcg/kg followed by an infusion beginning at 120 mcg/kg/hr and titrating to effect
  - a trial of Pyridoxine 50-100 mg over 1-2 minutes

## General Information

- Patients requiring multiple sedatives or anti-convulsants have a high probability of requiring an advanced airway intervention and/or hemodynamic instability

## Interventions

### First Responder

- Prevent heat loss

### Emergency Medical Responder – All FR interventions, plus:

- Provide on-going care as per neonatal resuscitation guidelines
  - [→ M09: Neonatal Resuscitation](#)
- Transport urgently to closest facility

### Primary Care Paramedic – All FR and EMR interventions, plus:

- Consider use of supraglottic airway if unable to oxygenate or ventilate with bag-valve mask
  - [→ PR08: Supraglottic Airway](#)
- Consider need for vascular access based on clinical scenario
  - [→ D03: Vascular Access](#)
  - **REQUIRES SPECIFIC TRAINING AND CLINICAL CONSULTATION (1-833-829-4099)**
- Correct hypoglycemia:
  - [→ E01: Hypoglycemia and Hyperglycemia](#)
  - [Glucagon](#)

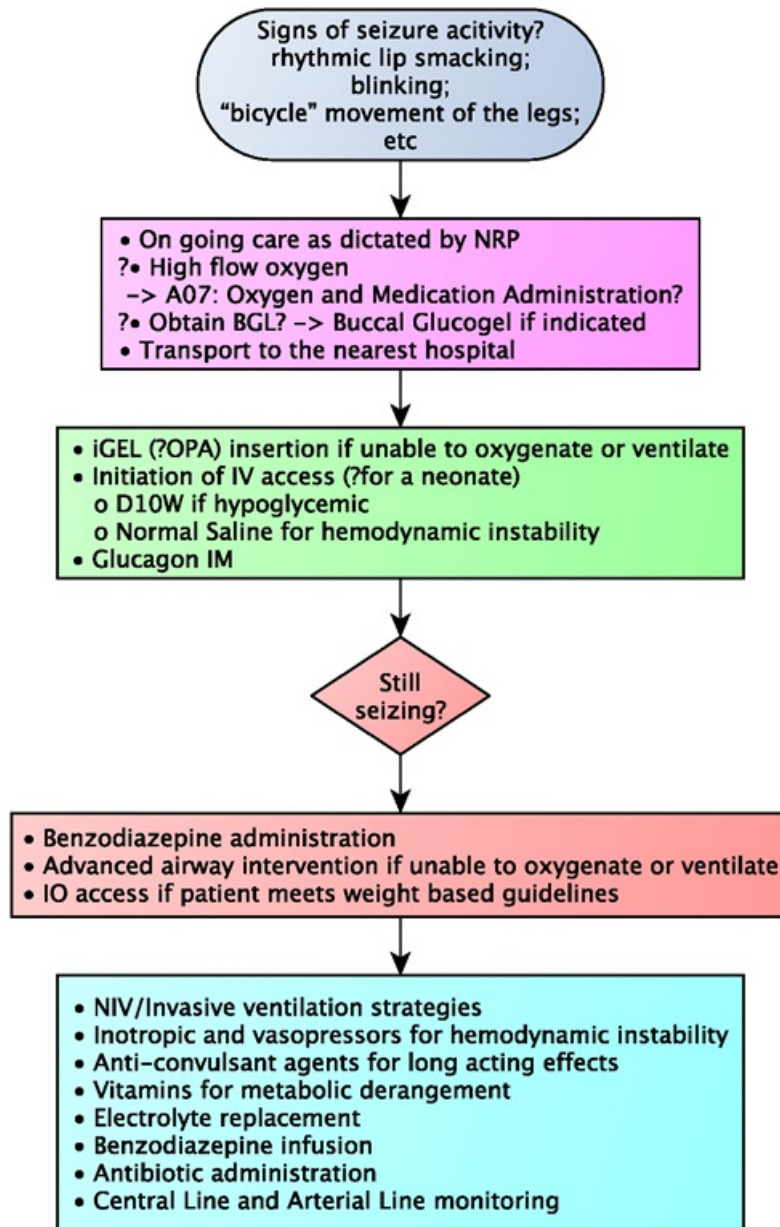
**Advanced Care Paramedic – All FR, EMR, and PCP interventions, plus:**

- Advanced airway intervention if unable to oxygenate or ventilate
- [MIDAZOLam](#) for seizure control
- Consider intraosseous access
  - → [PR12: Intraosseous Cannulation](#)

**Critical Care Paramedic – All FR, EMR, PCP, and ACP interventions, plus:**

- NIV/Invasive ventilation strategies
- Inotropic and vasopressors for hemodynamic instability
- Anti-convulsant agents for long acting effects
- Vitamins for metabolic derangement
- Electrolyte replacement
- Benzodiazepine infusion
- Antibiotic administration
- Central Line and Arterial Line monitoring

**Algorithm**



## Evidence Based Practice

[Pediatric Seizure](#)

