## *Pediatric Seizures*

1. Follow **General Pre-Hospital Care – Treatment Protocol**
2. For focal seizures, contact Medical Control
3. **IF PATIENT IS ACTIVELY SEIZING (GENERALIZED TONIC-CLONIC):**
   - A. Protect patient from injury
   - B. Maintain airway and provide supplemental oxygen
   - C. Administer **midazolam** according to the **MI-MEDIC** Cards
     - i. If **MI-MEDIC** is unavailable, administer **midazolam** 0.1 mg/kg IM, maximum single dose 10 mg
     - ii. If IV established prior to seizure activity, administer midazolam 0.05 mg/kg IV/IO, maximum single dose of 5 mg
     - iii. Monitor Spo2, EKG, and waveform capnography (**per End Tidal Carbon Dioxide Monitoring – Procedure Protocol**) after midazolam administration
   - D. Consider trauma; If evidence or suspicion of trauma, treat according to applicable protocol in addition to treating seizures
   - E. Check blood glucose (may be MFR skill, see **Blood Glucose Testing – Procedure Protocol**)
     - i. Start IV/IO if needed
     - ii. Administer **dextrose** according to **MI-MEDIC** when blood glucose is <60 mg/dL
       1. If **MI-MEDIC** is unavailable, utilize the table below

| Color | Age | Weight | Dose | Concentration | Volume | | Concentration | Volume |
|---|---|---|---|---|---|---|---|---|
| Grey | 0-2 months | 3-5 kg (6-11 lbs.) | 2.5g | Dextrose 12.5% | 20 mL | **OR** | Dextrose 10% | 25 mL |
| Pink | 3-6 months | 6-7 kg (13-16 lbs.) | 3.25g | Dextrose 25% | 13 mL | **OR** | Dextrose 10% | 33 mL |
| Red | 7-10 months | 8-9 kg (17-20 lbs.) | 4.25g | Dextrose 25% | 17 mL | **OR** | Dextrose 10% | 43 mL |
| Purple | 11-18 months | 10-11 kg (21-25 lbs.) | 5g | Dextrose 25% | 20 mL | **OR** | Dextrose 10% | 50 mL |
| Yellow | 19-35 months | 12-14 kg (26-31 lbs.) | 6.25g | Dextrose 25% | 25 mL | **OR** | Dextrose 10% | 63 mL |
| White | 3-4 years | 15-18 kg (32-40 lbs.) | 8g | Dextrose 25% | 32 mL | **OR** | Dextrose 10% | 80 mL |
| Blue | 5-6 years | 19-23 kg (41-50 lbs.) | 10g | Dextrose 25% | 40 mL | **OR** | Dextrose 10% | 100 mL |
| Orange | 7-9 years | 24-29 kg (52-64 lbs.) | 12.5g | Dextrose 50% | 25 mL | **OR** | Dextrose 10% | 125 mL |
| Green | 10-14 Years | 30-36 kg (65-79 lbs.) | 15g | Dextrose 50% | 40 mL | **OR** | Dextrose 10% | 150 mL |

iii. If unable to start IV, administer **glucagon** IM/IN (if available per MCA selection), (may be EMT skill per MCA selection)

1. If **MI-MEDIC** is unavailable, utilize the table below

**Glucagon** administration per MCA Selection

☑ Not included

| | **Glucagon** IM<br>*Injectable formulation ONLY*<br><br>A. Patients < 5 years of age administer **glucagon** 0.5 mg IM<br>B. Patients ≥ 5 years of age administer **glucagon** 1 mg IM | **Glucagon** IN<br>*Intranasal formulation ONLY*<br><br>**A.** Patients < 5 years of age **Do NOT Administer**<br>B. Patients ≥ 5 years of age administer **glucagon** 3 mg IN |
|---|---|---|
| EMT | ☐ | ☐ |
| Specialist | ☐ | ☐ |
| Paramedic | ☐ | ☐ |

*INTRANASAL GLUCAGON ADMINISTRATION: Only glucagon that is FDA-approved for nasal administration (e.g., Baqsimi(R)) may be given by IN route. Injectable glucagon is not to be administered via IN route. EMS clinicians may assist family/patient care givers in administering glucagon that is FDA-approved for IN use, if prescribed for the patient (regardless of age).

F. If seizure persists 10 minutes after initial dose of **midazolam** and correction of low blood glucose, repeat **midazolam** one time (per MCA selection)

◉ Pre-radio **midazolam** administration (without Medical Control contact)

○ Post-radio **midazolam** administration (contact Medical Control prior to administration)

i. 0.1 mg/kg IM, maximum single dose of 10 mg
**OR**
ii. If IV available, 0.05 mg/kg IV/IO, maximum single dose of 5 mg

G. If seizures persist after second dose, consider underlying causes and contact Medical Control for further instructions

4. **IF PATIENT IS NOT ACTIVELY SEIZING**, monitor and treat known underlying causes, if possible

A. Check blood glucose (may be MFR skill, see **Blood Glucose Testing – Procedure Protocol**) and treat as outlined above (3. E.)

i. If blood glucose <60 mg/dL:

1. Altered, able to swallow, AND 3 months old or older – Administer oral glucose
2. Not Alert – administer dextrose according to **MI-MEDIC** or table above

B. Check temperature and refer to **Pediatric Fever – Treatment Protocol**, if applicable
C. Monitor oxygenation and mental status, administer oxygen to maintain 94% SpO2, including ventilatory support as needed according to the **Airway Management – Procedure Protocol**
    i. For patients with respiratory depression and high suspicion o opioid involvement, administer **naloxone** per **Opioid Overdose Treatment and Prevention – Treatment Protocol**
D. Consider trauma; if evidence or suspicion of trauma, treat according to applicable protocol
E. Keep environment safe for the patient, padding around the patient if possible

**NOTES:**

1. Instructions for diluting **dextrose**:
    A. To obtain **dextrose** 10%, discard 40 ml out of one p of D50, then draw up 40 ml of NS into the D50 ampule
    B. To obtain **dextrose** 12.5%, discard 37.5 ml out of one amp of D50, then draw 37.5 ml of NS into the D50 ampule
    C. To obtain **dextrose** 25%, discard 25 ml out of one amp of D50, then draw 25 ml of NS into the D50 ampule
    D. May utilize 10% for all ages 5 ml/kg (0.5 gm/kg) up to 250 ml, according to **Dextrose-Medication Protocol**
2. To avoid extravasation, a patent IV must be available for IV administration of **dextrose**. **Dextrose** should always be pushed slowly (e.g., over 1-2 minutes)

Medication Protocols
Dextrose
Glucagon
Midazolam
Naloxone