

	<b>COUNTY OF SACRAMENTO</b> EMERGENCY MEDICAL SERVICES AGENCY	Document #	9007.02
	PROGRAM DOCUMENT:  <b>Pediatric Diabetic Emergency          (Hypoglycemia/Hyperglycemia)</b>	Initial Date:	07/26/21
		Last Approved Date:	09/14/23
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Signature on File

EMS Medical Director

Signature on File

EMS Administrator

**Purpose:**

- A. To establish treatment standards for patients exhibiting signs and symptoms of a diabetic emergency.

**Authority:**

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

**Protocol:**

- A. The ability to maintain temperature in prehospital settings in pediatric patients is a significant problem with a dose-dependent increase in mortality for temperatures below 37°C or 98.6°F. Simple interventions to prevent hypothermia can reduce mortality. During transport, warm and maintain normal temperature, being careful to avoid hyperthermia.
- B. Perform blood glucose determination.

**Hypoglycemia:**

- 1. Blood Glucose Level ≤ 60 mg/dl
- 2. History of Diabetes
- 3. Weakness
- 4. Confusion
- 5. Nausea/Vomiting
- 6. Coma

<b>BLS</b>
1. Supplemental O <sub>2</sub> as necessary to maintain SpO <sub>2</sub> ≥ 94%. Use the lowest concentration and flow rate of O <sub>2</sub> as possible. 2. Airway adjuncts as needed. 3. If trauma is suspected, assess for traumatic injury and/or need for Spinal Motion Restriction (SMR) when indicated per PD# 8044. 4. If the patient is seizing, protect the patient from further injury. 5. If Blood Glucose is ≤ 60 mg/dl: <ul style="list-style-type: none"> <li>• If the patient is alert and oriented, consider orange juice sweetened with sugar, regular soft drinks, or oral glucose paste, <del>50% dextrose</del>. Have the patient swallow a small amount of water, and if tolerated, EMT may give glucose <b>paste</b>.</li> </ul> 6. Transport.

### ALS

1. Initiate vascular access. Titrate to an appropriate Systolic Blood Pressure for the patient's age.
2. If blood glucose  $\geq 60$  mg/dl, consider other causes of decreased sensorium.
3. If blood glucose  $\leq 60$  mg/dl and the patient doesn't tolerate oral glucose, treat as follows:
  - ~~Dextrose 0.5 gm/kg IV/IO up to 12.5 gm.~~
  - Under 2 years old: D10, 5 ml/kg.
  - 2-14 years old: D25, 2 ml/kg or D50 1 ml/kg.
  - ~~14 plus years old: D50, 50 ml preload—full adult dose.~~

**NOTE:** if blood glucose remains  $\leq 60$  mg/dl a repeat dose may be given.

4. If blood sugar remains  $\leq 60$  mg/dl, give additional Dextrose 0.5 gm/kg up to 12.5 gm.
5. If IV access is unavailable or delay is anticipated, treatment options are:
  - Glucagon 0.5 mg Intramuscular (IM) if blood sugar  $\leq 60$  mg/dl OR
  - Dextrose 0.5 gm/kg IO as per dosages above.
  - If blood sugar remains  $\leq 60$  mg/dl, give additional Dextrose as per the doses above. ~~0.5 gm/kg for a maximum dose of 1 gm/kg.~~
6. Airway management as needed per PD# 8020.

**NOTE:** Concentrations of 10% Dextrose (D10), 25% (D25), or 50% Dextrose (D50) may be used.

  - If IV access is unavailable and the blood sugar  $\leq 60$  mg/dl or decreased responsiveness continues for more than fifteen (15) minutes after administration of Glucagon, IO access should be established.
  - ~~In the event of a glucometer failure, administer 0.5 gm/kg for a maximum dose of 1 gm/kg of Dextrose based on age above or 0.5 mg of Glucagon IM based on clinical assessment.~~
  - Cardiac monitoring.

### Hyperglycemia:

1. Blood Glucose Level  $\geq 350$ mg/dl
2. History of Diabetes
3. Weakness
4. Confusion
5. Nausea/Vomiting
6. Fruity smelling breath
7. Shortness of Breath
8. Coma

### BLS

1. Supplemental O<sub>2</sub> as necessary to maintain SpO<sub>2</sub>  $\geq 94\%$ . Use the lowest concentration and flow rate of O<sub>2</sub> as possible.
2. Pediatric Airway Management as needed per PD# 8837.
3. Spinal motion restriction when indicated per PD# 8044.
4. Perform blood glucose determination.
5. If the patient is seizing, protect the patient from further injury.
6. Transport.

### ALS

1. Perform blood glucose determination. If blood glucose  $\geq 350$  mg/dl and there is no evidence of fluid overload, initiate vascular access and administer a Normal Saline bolus of 20 mg/kg.

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| <ol style="list-style-type: none"><li>2. Airway adjuncts as needed.</li><li>3. Cardiac Monitoring.</li><li>4. Ondansetron when indicated for Nausea/Vomiting per PD# 9020.</li></ol> |
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**Consider AEIOUTIPS:**

Alcohol	Trauma
Epilepsy	Infection
Insulin	Psychiatric
Overdose	Stroke or Cardiovascular
Uremia	

**Cross Reference:** PD# 8044 – Spinal Motion Restriction  
PD# 9020 – Nausea and Vomiting  
PD# 8015 – Trauma  
PD# 9016 – Pediatric Parameters  
PD# 8837 - Pediatric Airway Management