

	COUNTY OF SACRAMENTO EMERGENCY MEDICAL SERVICES AGENCY	Document #	9007.02
	PROGRAM DOCUMENT:	Initial Date:	07/26/21
	Pediatric Diabetic Emergency (Hypoglycemia/Hyperglycemia)	Last Approved Date:	12/09/21
		Effective Date:	05/01/24
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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 \leq 60 mg/dl
- 2. History of Diabetes
- 3. Weakness
- 4. Confusion
- 5. Nausea/Vomiting
- 6. Coma

BLS

1. Supplemental O₂ as necessary to maintain SpO₂ \geq 94%. Use the lowest concentration and flow rate of O₂ 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 \leq 60 mg/dl:
 - If the patient is alert and oriented, consider orange juice sweetened with sugar, regular soft drinks, or oral glucose paste, ~~50% dextrose~~. Have the patient swallow a small amount of water, and if tolerated, EMT may give glucose **paste**.
6. Transport.

ALS

1. Initiate vascular access. Titrate to an appropriate Systolic Blood Pressure for the patient's age.
2. If blood glucose ≥ 60 mg/dl, consider other causes of decreased sensorium.
3. If blood glucose ≤ 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 1 ml/kg.
 - 14 plus years old: D50, 50 ml preload – full adult dose.

NOTE: if blood glucose remains < 60 mg/dl a repeat dose may be given.

4. If blood sugar remains ≤ 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 ≤ 60 mg/dl OR
 - Dextrose ~~0.5 gm/kg~~ IO as per dosages above.
 - If blood sugar remains ≤ 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 ≤ 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 or 0.5 mg of Glucagon IM based on clinical assessment.
 - Cardiac monitoring.

Hyperglycemia:

1. Blood Glucose Level ≥ 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 O₂ as necessary to maintain SpO₂ $\geq 94\%$. Use the lowest concentration and flow rate of O₂ 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 ≥ 350 mg/dl and there is no evidence of fluid overload, initiate vascular access and administer a Normal Saline bolus of 20 mg/kg.
2. Airway adjuncts as needed.

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| 3. Cardiac Monitoring. |
| 4. Ondansetron when indicated for Nausea/Vomiting per PD# 9020. |

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