

Insulin Drip Guidelines

Associated Order Sets: ED Diabetes: DKA EBP Pathway;
ED DKA EBP Pathway Initial Diagnosis Lab Panel;
Inpt: IP Diabetic Ketoacidosis EBP Pathway



Children's Mercy
KANSAS CITY

Evidence Based Practice



QR Code for
mobile view

Obtain the following labs if not obtained previously for new onset diabetes:

- HgbA1c
- Insulin antibodies
- GAD antibodies
- IA-2 antibodies
- Zinc transporter 8 antibodies
- C-peptide
- Anti-Transglutaminase IgA diagnostic algorithm
- TSH diagnostic algorithm

DKA Titration Schedule

	BAG 1	BAG 2	
Plasma glucose (mg/dL)	NS w/ additives	D ₁₀ NS w/ additives	Final dextrose concentration
≥ 250	100%	0%	0%
200-249	50%	50%	5%
150-199	25%	75%	7.5%
< 150	0%	100%	10%

Plasma Glucose Level or Trend	Action
< 80 mg/dL	Discontinue insulin drip and Call primary medical team Refer to Initiate Hypoglycemic Therapy
Falling by > 100 mg/dL/hr	Decrease insulin to 0.05 Units/kg/hr and Call primary medical team
80 - 99 mg/dL	Decrease insulin to 0.05 Units/kg/hr

Insulin Drip Discontinuation Criteria:

- Bicarbonate level is ≥ 20 mmol/L*
- AND**
- Anion gap is normalized and / or urine ketones are negative
- AND**
- Pt is awake and ready to eat

*If anion gap has normalized and chloride has been high for ≥ 4 hours **AND** urine ketones are negative, may discontinue insulin drip even if bicarbonate level is < 20 mmol/L

Abbreviations:

DKA = Diabetic ketoacidosis
LOC = Level of consciousness
NS = Normal saline
I&O = Input & Output
PICU = Pediatric intensive care unit

Insulin Drip Guidelines

Nursing action items:

- Obtain weight (kg)
- Place on CR and pulse oximetry monitors
- Assess neurologic status at least every 1 hour
- Assess pt POC glucose every hour
 - **POC blood ketones can no longer be obtained*
- Obtain urine ketones at least every 4 hours
- Assess vital signs every 2 hours
- NPO
- Measure I&O
- Obtain BMP every 4 hours
- Obtain other labs for new onset diabetes if not previously obtained

Initiate insulin drip

(100 units of regular insulin in 100 mL normal saline) at 0.1 Units/kg/hr

Administer IV fluids

- IV fluid rate is 1.5x maintenance
 - Dextrose concentration is determined by patient's glucose level using the **DKA Titration Schedule**
 - Potassium additives in IV fluids as below*
 - D₁₀NS with 20 mEq/L K Acetate and 20 mEq/L K Phosphate
 - Normal saline with 20 mEq/L K Acetate and 20 mEq/L K Phosphate
- *Use caution in replacing potassium in pts with hyperkalemia or renal failure by ensuring pts are able to void prior to initiation of therapy*

Is the pt's LOC deteriorating?

Yes

[Initiate Cerebral Edema Therapy](#)
and
Transfer to PICU

No

- Continue to monitor glucose level and trend
- Adjust plan as needed if glucose is < 100 mg/dL or falling by > 100 mg/dL

Does the pt have a non-anion gap hyperchloremic metabolic acidosis?

Yes

Change DKA IV fluids to 1/2 NS with the same dextrose content and additives

No

Does the pt meet insulin drip discontinuation criteria?

No

Yes

Discontinue insulin drip and D₁₀NS with additives, call Endocrine for further management questions

- [Link to table of basal insulin dosing and table of carb ratios](#)

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Last Updated: 04.20.2026

For additional information, [link to DKA synopsis](#)

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