



# REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

**insulin**



**Effective Date:** Jan 14- 2015

**Revised Date:** June 2024

CLASSIFICATION

**Antidiabetic agent**

OTHER NAMES

**Humulin R, Novolin regular, Toronto**

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**ADMINISTRATION POLICY:**

- IV infusion - May be administered by a nurse
- IV Intermittent - May be administered by a nurse
- IM injection: - May be administered by a nurse
- Subcut: - May be administered by a nurse

**RECONSTITUTION/DILUTION/ADMINISTRATION:**

**Available as:** 100 units/mL – 10 mL vial (unopened vials should be refrigerated)  
*ONLY REGULAR INSULIN MAY BE ADMINISTERED INTRAVENOUSLY*

**IV Intermittent:** Administer diluted in convenient volume of compatible solution over 15 to 30 minutes

**IM injection:** Administer undiluted

**Subcut:** Administer undiluted

**IV Infusion: Pump Library:**

Drug Library	Dose Rate	Short Name	Care Unit
Yes	units/kg/h	insulinp	pediatric
Drug	Diluent	Final Volume (VTBI)	Final Concentration
100 Units	Premixed bag	100 mL	1 unit/mL
Clinical Advisory: High Alert			
Soft Low Dose Limit: 0.01 units/kg/h		Soft High Dose Limit: 0.1 units/kg/h	

*\*\*If NURSE PREPARED take 1 mL of 100 units/ml Insulin regular add to 100 mL Normal Saline bag.  
 Final concentration: 1 unit/mL (rounded)*

**DOSAGE:**

- Diabetic Ketoacidosis:
  - IV Infusion: 0.025 to 0.1 units/kg/hour
  - IM: 0.25 units/kg/dose followed by 0.1 units/kg/dose every 1 hour or as required
  - Subcut: 0.1 to 0.25 units/kg/dose every 1 to 2 hours
- Diabetes Mellitus:
  - Subcut: Usual starting dose: 0.3 to 0.5 units/kg/24 hours  
 Maintenance range: 0.5 to 1 unit/kg/24 hours
- Neonatal Hyperglycemia:
  - IV intermittent: 0.05 to 0.1 units/kg/dose
  - IV infusion: 0.01 to 0.05 units/kg/hour to a maximum of 0.1 units/kg/h

*(Dosage continued)*



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## DOSAGE (cont'd):

**Hyperkalemia:** No fixed dose for all situations exist. Monitor serum glucose for several hours following administration.

Initial dose: dextrose 0.5 to 1 gram/kg followed with regular insulin 0.1 to 0.25 units/kg IV over 5 to 30 minutes

Range: regular insulin 0.5 to 2 units/gram of dextrose

**Maximum concentration :** IV bolus, IM, Subcut: 100 units/mL  
 IV Infusion: 10 units/mL

## STABILITY/COMPATIBILITY:

**Stability:** Open vials stable for 28 days at room temperature or refrigerated. Place an expiry date on all open vials of insulin.

**Stability of Final Admixture:** 24 hours at room temperature

**Compatibility:** Compatible with normal saline, dextrose concentrations between D5W to D50W, dextrose-saline combinations, Lactated Ringer

## PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

**Most of the adverse effects of insulin are symptoms of hypoglycemia.**

Hypersensitivity: anaphylactic reactions

CNS: fatigue, mental confusion

Metab: hypoglycemia with blurred vision, sweating, tremor, hunger, sweaty palms, palpitations, cold sensation, hypokalemia

Local: local inflammatory reactions, atrophy of subcutaneous fat tissue at the site of injection, pain on injection, urticaria, redness

### CAUTION

- do not change brand or manufacturer of insulin product without plan to monitor blood glucose

### CONTRAINDICATIONS:

- allergic reaction to insulin or any component of the product

## ADDITIONAL NOTES AND NURSING CONSIDERATIONS: