

RX

Drug Name: Dextrose 50% in Water
Trade Name: Dextrose, D50, D50W, Glucose
REVISED: 01MAY2018

Class:

Monosaccharide, principal form of carbohydrate used in the body

Mechanism of Action:

Increases serum blood glucose levels

Indications:

- Hypoglycemia confirmed by glucometer
- Coma or seizure of unknown etiology
- Refractory cardiac arrest (controversial)

Contraindications:

- Intracranial hemorrhage
- Closed head injury

Precautions:

- Can precipitate severe neurologic impairment in alcoholic patients (Wernicke-Korsakoff's syndrome)
 - This is related to thiamine deficiency and thiamine should be given before D50 in these cases
- If smaller veins are used, local venous irritation may occur
- Infiltration may cause necrosis

Dosage:

Adults

- **IV/IO:** 12.5-25 g slow IV push or infusion

Pediatrics

- **Birth to 3 months:** (D10) 10ml/kg slow IV/IO push
- **> 3 months:** (D10) 10 ml/kg or (D25) 4 ml/kg slow IV/IO push
- *Refer to PEARLS for D10 quick-mix directions*

Onset:

- Can be a minute or less to see immediate improvement; usually 5-20 minutes to see complete resolution of signs and symptoms

Duration:

- Depends on the degree of hypoglycemia. Sometimes long acting insulin may cause a recurrence of hypoglycemia after the initial glucose is metabolized

Side Effects:

- Pain, warmth, burning upon administration
- Phlebitis, sclerosis, and thrombosis of vein can occur
- Rhabdomyositis
- Infiltration can cause necrosis & extravasation

Interactions:

- No significant interactions

PEARLS:

- *It is permissible to mix D50% to a D10% solution for adult patient's. This is particularly preferred with small and fragile veins.*
- *Symptomatic hypoglycemia nearly always means an altered mental status. Altered mental status often means a scene safety issue. **Make sure you are aware of your environment**, have the assistance you need, and leave if you become uncomfortable.*
- *Check a glucometer reading before administering D50 if at all possible. Repeat at least 10 minutes after.*

DRUG: DEXTROSE 50%

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This document is for **reference only**. Please refer to SWO's for specific indications, dosages, and applications

DRUG: DEXTROSE 50%

- Use a reasonably large bore IV & and a reasonably large vein.
- Run fluid wide open while administering D50. Check venous patency often.
- Also, it is acceptable to revive a hypoglycemic patient without using the full dose. This is done based on the promptness of the patient response.
- If the patient refuses transport it is required to get them something substantive to eat, and that someone will be with them for a while after EMS departure.
- Commonly, there is an explanation for hypoglycemia if you look for it. Poor compliance, increased stress, decreased sleep, illness, change in insulin regiment, etc.
- If a patient becomes symptomatically hypoglycemic from oral hypoglycemics, they should generally be transported.
- The effects of long acting insulin are difficult to predict. Therefore, the effects of an intentional overdose on long acting insulin are prolonged and beyond the normal capability of the paramedic to treat and release.
- Also if a patient's family, friends, or relatives are present, they can be a good source of information about the patient's habits and their normal recovery from hypoglycemia.
- Follow the Diabetic Treat and Release protocol for diabetics who do not desire transport.
- **OPTIONAL QUICK REFERENCE FOR MIXING D10 SOLUTION:**

In a 250cc bag of NS: remove 50 cc of NS from a 250 cc bag, and replace with 50 cc (one ampule) of D50 (25 g of Dextrose)

In a buretrol chamber with 100cc of NS: add 80 cc of NS to a buretrol chamber with 20 cc (10 g of Dextrose) of D50.

Remember to mix your drug *prior* to attaching and flushing your drip set. There is approximately 20 cc of space in a drip line. Flushing your drip line first will affect the concentration of medication in the bag or buretrol chamber