



**GENERIC NAME: DEXTROSE 50%**

**BRAND NAME:** Dextrose 50%, D<sub>50</sub>

**CLASS:** carbohydrate, hyperglycemic

### **Mechanism of Action:**

**Pharmacological:** Aerobic metabolic substrate (ATP production). **Clinical effects:** Reverses CNS effects of hypoglycemia by rapidly increasing serum glucose levels. Provides short-term osmotic diuresis.

### **Indications and Field Use:**

Known hypoglycemia  
Altered level of consciousness of unknown etiology  
Seizures of unknown etiology  
Hyperkalemia

### **Contraindications:**

Hypersensitivity  
Known thiamine deficiency (relative, if suspected give thiamine close to same time). Delirium tremens; use with caution in patients with acute alcoholism, may be ineffective without thiamine. Head injury (unless

documented hypoglycemia). Intra cranial hemorrhage (relative). Severe pain (paradoxical excitement may occur). Diabetic coma with hyperglycemia Glucose-galactose malabsorption syndrome Anuria and hepatic coma

## **Adverse Reactions:**

Cerebral edema in children when given IV undiluted. Worsening elevated ICP or cerebral edema from trauma or cerebral vascular accident. Extravasation leads to severe tissue necrosis. Sclerosing effect on peripheral veins. Tachypnea Pulmonary edema

## **NOTES ON ADMINISTRATION**

Incompatibilities/Drug Interactions:

Sodium bicarbonate Diazepam will precipitate if given concurrently without flushing

## **Adult Dosage:**

**Hypoglycemia, altered level of consciousness or seizures of unknown etiology: 25-**

100 ml of D<sub>50</sub> (12.5-50 Gm, 1/2 to 2 amps) IV.

**Hyperkalemia:** 50 Gm of Dextrose IV total may be given over 1 hour. This is part of a combination drug therapy. See: profiles for calcium chloride and sodium bicarbonate. Insulin may be given upon arrival to ED.

## **Pediatric Dosage:**

(14 yrs and below includes infant)

Administer 0.5 - 1 Gm/kg of a dextrose 10% solution; recommended to give slowly over a 20 minute period. Dilute

D<sub>50</sub> (dextrose 50% containing 25 Gm of dextrose) to a 1:4 solution. To prepare, obtain a 250 ml container of normal saline for IV use; waste 50 ml and add 50 ml of dextrose 50%. The resulting solution is dextrose 10% in normal saline or 10 grams/100ml.

## **Routes of Administration:**

IV bolus (rapid)

## **Onset of Action:**

Seconds

## **Peak Effects:**

Variable

## **Duration of Action:**

Variable

## **Dosage Forms/Packaging:**

25 Gms/50 ml prefilled syringe

## **Arizona Drug Box Supply:**

PARAMEDIC: 50 g

## **Special Notes:**

> Determine a blood glucose level before initiating administration of dextrose. Inducing an unnecessary hyperosmolar state during certain illness/injury states (i.e. head injuries, cerebral edema, Intra cranial bleeds, etc.) may worsen neurological outcome. Additionally dextrose is very necrosing to the vascular system, will cause necrosis if

infiltrated and should not be administered through small veins (all drugs may do harm, so

does D<sub>50</sub>). > Emergency treatment of hyperkalemia (clinical presentation, PMH and ECG changes)

includes CaCl (or gluconate), sodium bicarbonate, and insulin and dextrose. Insulin may be given upon arrival to ED.