

# 50% Dextrose in Water (D<sub>50</sub>W)



**Class:** Nutritive agent/Carbohydrate

**Mechanism of Action:** 50% dextrose in water supplies supplemental glucose in cases of significant hypoglycemia. Parenterally administered glucose is eventually broken down into carbon dioxide and water which provides 3.4 calories per gram of glucose for use by the body's cellular components.

**FDA Indications:** Hypoglycemia

Coma of unknown origin

**Contraindications:** Increased intracranial or intraspinal hemorrhage

Delirium tremens in dehydrated patients

Glucose-galactose malabsorption syndrome

Diabetic coma and hyperglycemia

Anuria

Allergy to corn or corn products

**Precautions:** Localized venous irritation may occur when smaller veins are used

Infiltration of dextrose may result in tissue necrosis

Patients with diabetes mellitus or carbohydrate intolerance

**Side Effects:** **Cardiovascular:** *tissue necrosis, thrombophlebitis*; **Endocrine:** *hyperglycemia, aluminum toxicity, rebound hypoglycemia, hypokalemia, hypomagnesemia, hypophosphatemia*; **Immunologic:** *anaphylaxis*; **Gastrointestinal:** *nausea*; **Neurological:** *cerebral ischemia, intracerebral hemorrhage*; **Renal:** *glycosuria*; **Respiratory:** *pulmonary edema*.

**How Supplied:** Injection Solution: 25 grams/50ml of water

**Adult Dosage:** If blood sugar <60mg/dL and the patient has signs and symptoms of hypoglycemia, administer 50% Dextrose in Water (50ml) slow intravenous push (IVP).

**Routes of Administration:** Intravenous (IV)

**IV Compatability:** NS (Normal Saline-Sodium Chloride 0.9%)

D5W (D5W-Dextrose 5%)

**Pregnancy Category:** C – Drugs for which there are no adequate studies, either animal or human, or drugs for which there are adverse fetal effects in animal studies but no available human data.

**Pediatric Dosage:** If blood sugar <60mg/dL and the patient has signs and symptoms of hypoglycemia, administer dextrose as follows:

Neonates (Birth to 30 days): 2.5-5ml/kg of 12.5% Dextrose

Infants (30 days to 1 year): 1-2ml/kg of 25% Dextrose in Water

Children (>1 year): 0.5-1ml/kg of 50% Dextrose in Water

**References:** Bledsoe, B., Clayden, D., & Papa, F. (1996). *Prehospital emergency pharmacology* (4<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.

Micromedex Healthcare Series @ Community Healthcare System Intranet

St. Mary Medical Center EMS System. *Advanced Life Support 911 Treatment Protocol* (Rev. 5/1/08).

St. Mary Medical Center EMS System. *Pediatric Advanced Life Support Treatment Protocol* (Rev. 10/04).