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AUTHORIZED BY: CPC Quality of Care Committee  
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CATEGORY: ACP/PCP Medications  
TITLE: **DEXTROSE IN WATER**

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- Other Names:**
- Dilution dependant (D50W, D25W, D10W, D5W)
- Classifications:**
- Carbohydrate substrate
- Pharmacodynamics:**
- Rapidly increases blood glucose levels
  - Transient osmotic diuretic
- Onset:**
- < 1 min.
- Peak:**
- Depends on degree of hypoglycemia
- Duration:**
- Depends on degree of hypoglycemia
- Indications:**
- Documented hypoglycemia (< 4 mmol/L where patient is  $\geq$  2 y/o)
  - Documented hypoglycemia (< 3 mmol/L where patient is < 2 y/o)
  - Suspected signs of hypoglycemia
  - Seizures or coma of unknown etiology
  - Cerebral/meningeal edema related to eclampsia
- Contraindications:**
- Pediatric patients on a therapeutic ketogenic diet (*See Special Considerations*)
- Precautions:**
- Extravasation of the tissue
  - Suspected intracranial hemorrhage, CVA
  - Wernicke's encephalopathy in the alcoholic patient due to thiamine deficiency
- Adverse Reactions:**
- Pain, phlebitis at injection site
  - Hyperglycemia, glycosuria, fluid overload
- Drug Interactions:**
- Dextrose 50% has an acidic pH (3.5-5) and therefore specific compatibility information should be consulted when dextrose 50% is injected into an IV line containing another drug
- Special Considerations:**
- Rapid rates of administration predisposes the patient to pain and may cause phlebitis if a peripheral vein is used; to minimize this effect administer slowly
  - Excessive IV administration may cause fluid overload, water intoxication, CHF
  - It is recommended that the max single dose of D10W OR D50W for your *hypoglycemic* patient be administered gradually over 3 minutes, with a discontinuation in the event your patient attains a level of consciousness where they can safely consume carbohydrates
  - Thiamine 100 g IV should be given together when alcoholism or malnutrition are suspected. As Thiamine is not carried in the field, it can be given later in the Emergency Department to prevent Wernicke's encephalopathy
- Preparations:**
- 25 gm/50 ml preload (D50%W)
  - 25 gm/250 ml IV bag (D10%W)

**References:**

- Compendium of Pharmaceuticals and Specialties 2013
- Ontario Provincial ALS Patient Care Standards, Version 4.9

**NOTE: *The information contained herein does not supersede or negate the MoHLTC Provincial Medical Directives and should only serve as general information about the medication itself. For medication dosages, please refer to the current version of the Ontario Provincial ALS Patient Care Standards.***