A. Hypoglycemia

Signs and symptoms of acute hypoglycemia (insulin shock) include, but are not limited to: altered mental status up to and including unresponsiveness, weakness, dizziness, irritability, nausea, sweating, and combative behavior. Hypoglycemia can also precipitate seizures and display signs and symptoms of a stroke.

If the blood glucose level is <70mg/dL with signs/symptoms of hypoglycemia OR <50mg/dL without signs/symptoms of hypoglycemia:

BLS

1. Administer **oral glucose (Glutose) 15 grams** PO if the patient is conscious and able to swallow.

2. Reassess blood glucose level. If patient is still symptomatic and blood glucose level is <70mg/dL proceed to ALS care.

ALS

3. Administer **Dextrose 50% 25 grams** IV VERY SLOWLY*

*NOTE: The recommended administration of IV Dextrose 50% is over 3 minutes.

a) If unable to establish IV access, administer **Glucagon 1 mg** IM.

b) If the patient regains consciousness and can maintain his/her airway, and an IV still cannot be established, administer **oral glucose (Glutose) 15 grams** PO

4. Reassess blood glucose level+.

+NOTE: After administering oral glucose and/or Glucagon, blood glucose levels should be reassessed after 15 minutes. After administering D50% IV, blood glucose levels should be reassessed after 5 minutes.

5. If the patient remains symptomatic and the blood glucose level is <70mg/dL, administer **Dextrose 50% 12.5 grams** IV

a) If unable to establish IV access, administer an additional **Glucagon 1mg** IM.

b) If the patient regains consciousness and can maintain his/her airway, and an IV still cannot be established, administer **oral glucose (Glutose) 15 grams** PO

NOTE: Diabetic patients that take oral medication found to be hypoglycemic are at an elevated risk of recurrent hypoglycemia. Every effort should be made to encourage these patients to be transported to the hospital ALS by Fire Rescue. If signs or symptoms of stroke are present, refer to **(Protocol 13 Stroke Alert**).

B. Hyperglycemia

The signs and symptoms of hyperglycemia have an onset that can range from days to weeks. Hyperglycemia can be divided into two types: **Diabetic Ketoacidosis (DKA)** and **Hyperosmolar Hyperglycemic Non-Ketotic Coma (HHNK).**

Signs and symptoms can include, but are not limited to: lethargy, dizziness, seizure, nausea, vomiting, "fruity or acetone" breath (DKA), tachypnea or Kussmaul's respirations (DKA), polyuria (frequent urination), polydipsia (thirst)

1. If blood glucose level is **≥300mg/dL,** assess ETCO2

   a) If ETCO2 is ≤29mmHg, suspect DKA.

   b) Initiate IV access.

   c) Administer a **normal saline bolus of up to1L (1,000mL)** in the absence of CHF.

   d) **Transport ALS** to the closest appropriate hospital.

$ETCO_2$ may be assessed via the "Smart CapnoLine"

2. If blood glucose level is **between 300mg/dL and 500mg/dL without signs/symptoms**, assess ETCO2.

   a) If ETCO2 is ≥30mmHg, patient may be transported BLS to the hospital by the most appropriate means.

3. If the blood glucose level is **≥500mg/dL:**

   a) Initiate IV access.

   b) Administer a **Normal Saline bolus of 1L (1,000 mL)** in the absence of CHF.

   c) Transport ALS to the closest appropriate hospital.

NOTE: Care should be taken to look for underlying conditions when assessing patients with both DKA and HHNK as triggers can include myocardial infarction, stroke, infection, sepsis, and drug / alcohol abuse.