**History**
- Past medical history
- Medications
- Recent blood glucose check
- Last meal

**Signs and Symptoms**
- Altered mental status
- Combative or irritable
- Diaphoresis
- Seizure
- Abdominal pain
- Nausea or vomiting
- Weakness
- Dehydration
- Deep or rapid breathing

**Differential**
- Alcohol or drug use
- Toxic ingestion
- Trauma or head injury
- Seizure
- Stroke
- Altered baseline mental status

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**Blood glucose analysis**

- Cardiac monitor
- 12-Lead ECG procedure *if indicated*
- Establish IV/IO

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**Blood glucose ≤ 60mg/dl**

- Able to follow commands but symptomatic
  - **E** Consider Oral Glucose 30g
  - **P** D-10 100ml IV
    - No venous access
    - Glucagon 1mg IM
    - Repeat in 15 minutes if needed
    - Consider IO access as a last resort
  - Improving?
    - Yes
      - Return to baseline mental status?
        - No
          - **P** If blood glucose ≤ 60mg/dl
            - D-10 150ml IV
              - Improving?
                - Yes
                  - Notify receiving facility. Contact Base Hospital for medical direction, as needed.
                - No
                  - **N** Base Hospital for additional order
    - No
      - **P** If blood glucose ≤ 60mg/dl
        - D-10 150ml IV
          - Improving?
            - Yes
              - Notify receiving facility. Contact Base Hospital for medical direction, as needed.
            - No
              - **N** Base Hospital for additional order

**Blood glucose ≥ 350mg/dl**

- If no evidence of CHF/fluid overload
  - Normal Saline bolus 500ml IV
  - Hypotension?
    - Yes
      - Return to baseline mental status?
        - No
          - **P** If adult present AND blood glucose > 100mg/dl AND patient eats meal now AND is complaint free, THEN transport need not be recommended
        - Yes
          - **N** D-10 Base Hospital for additional order
      - Improving?
        - Yes
          - Notify receiving facility. Contact Base Hospital for medical direction, as needed.
        - No
          - **N** Base Hospital for additional order
    - No
      - **P** If blood glucose ≥ 350mg/dl
        - D-10 150ml IV
          - Improving?
            - Yes
              - Notify receiving facility. Contact Base Hospital for medical direction, as needed.
            - No
              - **N** Base Hospital for additional order

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**Suspected Hypoglycemia or patient’s glucometer results read <60mg/dl**

- Blood glucose analysis
- Cardiac monitor
- Establish IV/IO

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**Suspected hypoglycemia or patient’s glucometer results read <60mg/dl**

- Blood glucose analysis
- Cardiac monitor
- Establish IV/IO
Pearls

- It is safer to assume hypoglycemia than hyperglycemia if doubt exists.
- Recheck BGL after each D-10 or Glucagon administration.
- Patients with prolonged hypoglycemia may not respond to Glucagon.
- Response to Glucagon can take 15-20 minutes. Consider the entire clinical picture when treating hypoglycemia, including a patient’s overall clinical condition and other vital signs. It may be safe to wait for some time for Glucagon to work instead of pursing the more aggressive course of performing IO access to give faster acting D-10 solution. Diabetics may have poor wound healing capabilities, and IO access may present a greater risk for infection or complicate the patient’s long-term condition due to poor wound healing. IO access may also present a greater risk for infection. On the other hand, consider IO access to give D-10 solution early in patients who are critically ill or peri-arrest and hypoglycemic.
- Do not administer oral glucose to patients that are not able to swallow or protect their airway.
- Quality control checks should be maintained per manufacturer’s recommendation for all glucometers.
- Patients refusing transport to a hospital after treatment of hypoglycemia:
  - **Oral agents**: Patients taking oral diabetic medications should be strongly encouraged to allow ambulance transportation to a hospital. They are at risk of recurrent hypoglycemia that can be delayed for hours and require close monitoring even after a prehospital blood glucose level of greater than 60mg/dl has been achieved. Patients who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal with complex carbohydrates and protein now.
  - **Insulin agents**: Many forms of Insulin now exist. Longer acting Insulin places the patient at risk of recurrent hypoglycemia even after a prehospital blood glucose level of greater than 60mg/dl has been achieved. Patient who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal with complex carbohydrates and protein now.