

I. General Considerations

- A. Diabetics are not the only persons who become hypoglycemic. Alcoholics, some poisoned patients, and others may develop problems of glucose metabolism.
 - B. Diabetics have problems with both too much and too little glucose. In general, if in doubt, give glucose.
 - C. The brain requires a constant and uninterrupted supply of glucose. Without glucose, it is unable to function properly and signs and symptoms of hypoglycemia may appear (e.g., bizarre behavior, altered neurological signs which may appear stroke-like and coma.) Therefore, any patient with altered level of consciousness should be assessed for the possible need for glucose administration.
 - D. Insulin is required for sugar to enter cells. When insulin is low, the body makes more glucose to drive sugar into the cells.
 - E. The treatment of ketoacidosis in the field depends upon making the correct assessment. It is generally safer to assume that the patient in a coma is hypoglycemic, rather than hyperglycemic. If the history, physical exam or known glucose levels are consistent with ketoacidosis, then the treatment is aimed at hydration.
 - F. The patient in ketoacidosis is generally dehydrated, perhaps even to the point of shock and will require fluid volume.
 - G. Acidosis causes shifts in serum potassium which may lead to electrocardiographic changes.
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II. History

Perform a focused history and physical exam with particular attention to:

- A. When was the patient last completely well?
 - B. Determine the onset, progression and duration of the illness.
 - C. Obtain a past medical history including alcohol use, diabetes, epilepsy, hypertension, cardiac disease, lung disease, strokes?
 - D. Has the patient been experiencing increased or frequent urination, increased thirst or increased appetite?
 - E. What medications has the patient been taking or is the patient supposed to be taking, including over the counter medications?
 - F. Has the patient eaten recently?
 - G. Has the patient been exercising recently or decreased food intake?
 - H. Has the patient experienced shortness of breath, chest or abdominal pain?
 - I. Has the patient noted fever, nausea, vomiting, diarrhea, cough or sputum production?
 - J. Has the patient noted any signs of infection?
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III. Physical Exam

- A. Perform an initial assessment.
- B. Perform a focused history and physical exam.
- C. Assess the breath sounds if you are trained to do so.
 - 1. Are there rales, rhonchi (crackles), or wheezes?
- D. Assess the skin.
 - 1. Is it warm, hot or cold?
 - 2. Is it dry or moist?
 - 3. Note any color changes (e.g., pale, cyanotic, red).
 - 4. Is there bruising or evidence of injury?
- E. Is there any recognizable breath odor?
- F. Is there a recognizable breathing pattern?
- G. Assess the patient's level of consciousness.

- H. Assess the patient's neurological condition.
 - 1. Check the pupils for size, symmetry, reactivity.
 - 2. Assess motor function. Is the patient moving all four extremities? Is there equal grip strength? Is there posturing?
 - 3. Is sensation to touch intact in all four extremities?
- I. Inspect the surroundings.
 - 1. Check for pill bottles, syringes, etc.
 - 2. Is there evidence the patient has/has not been eating?

Paramedic

- J. Assess the cardiac rhythm.
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IV. Treatment**Basic**

- A. Establish an airway, maintain as indicated, suction as needed.
- B. Administer high concentration oxygen
- C. Monitor the vital signs frequently during transport.
- D. If the patient can swallow on command and the patient's presentation is consistent with hypoglycemia, administer up to one tube of oral glucose or glucose-containing solution orally.

Intermediate

- E. Secure IV access. Obtain blood specimen for glucose determination at the hospital if the receiving hospital desires it.
- F. Perform capillary blood glucose determination. Do not use blood from IV start.
- G. *If patient's blood glucose level is <80 mg/dl, administer dextrose 50% 25 gm IV in a secure vein for an adult (standing order for paramedics) or 0.5 - 1 gm/kg for a child.*
- H. ▲ *Administer thiamine 100 mg IV if dextrose is to be administered.*
- I. ▲ *If IV access cannot be secured and the patient's blood glucose level is <80 mg/dl, administer 1 mg glucagon IM*

Paramedic

- J. Assess and monitor the cardiac rhythm; treat arrhythmias/dysrhythmias per applicable protocols.