

School Nurses on the Front Line in the Diabetes Epidemic Part 2: Treatment of Hypoglycemia and Hyperglycemia

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Faculty

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Low Blood Sugar-Hypoglycemia

- Definition
 - Blood sugar LESS than 80
- Causes
 - Not enough food, missing or being late for meals/snacks
 - Too much insulin
 - More exercise than usual

Low Blood Sugar-Hypoglycemia

- Onset
 - Fast, can progress to seizure or loss of consciousness

Signs and Symptoms of Hypoglycemia



Treatment of Hypoglycemia (Mild-Moderate Lows)

- Step 1
 - Give a fast-acting sugar such as
 - 4 ounce of juice
 - 4 ounces of regular sweetened soft drink
 - 3-4 glucose tablets
 - 15 grams glucose gel
- * Give only one of the above



Treatment of Hypoglycemia (Mild-Moderate Lows)

- Step 2

- Retest blood sugar in 15 minutes after giving fast acting sugar source
- If blood sugar reading is <80 repeat step 1 and retest sugar in 15 minutes
- If blood sugar reading is >80



Treatment of Hypoglycemia (Mild-Moderate Lows)

- Give scheduled lunch or snack if it is scheduled within one hour of reading
- Otherwise go to step 3

Treatment of Hypoglycemia (Mild-Moderate Lows)

- Step 3

- Give 15 grams of a long acting carbohydrate with a protein such as
 - 4 peanut butter crackers
 - 8 ounces of milk
 - 4 cheese crackers



* Give only one of the above

Quiz

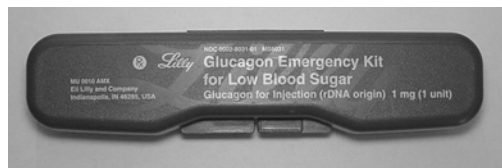
- A student comes to your office. He has just finished PE and is on his way to lunch. You check his blood sugar, it is 70. What do you do now?
 - A. Give 15 grams of fast acting carbohydrate
 - B. Nothing, he is going to lunch, the food will treat the low
 - C. Give extra insulin to treat the low

Quiz

- If you answered A you are correct
 - You must treat with a fast acting carbohydrate because the food the patient is about to eat will not absorb quickly enough to bring the blood sugar back to a normal range in a timely manner

Treatment of Hypoglycemia (Severe)

- Glucagon/Glucagen should be given if student is unconscious, having a seizure or unable to swallow



Administration of Glucagon/Glucagen

- Mix solution in syringe with medication in vial
- Inject in upper, outer thigh
- Turn the child on their side
- Call 911 and notify parents
- Check blood glucose
 - Continue to check often

Administration of Glucagon/Glucagen

- Once conscious and/or more cooperative offer sips of sweet liquid
 - Juice, coke, etc.
- When no longer nauseated, offer food
- Contact diabetes doctor



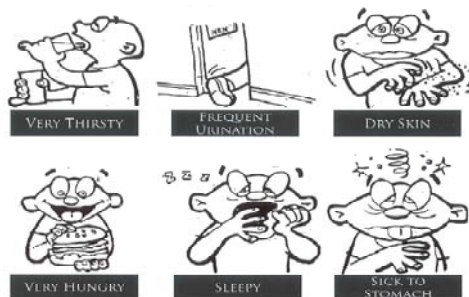
High Blood Sugar-Hyperglycemia

- Definition
 - Blood sugar greater than 200
- Causes
 - Too much food
 - Not enough insulin or diabetes medicine
 - Illness or stress

High Blood Sugar-Hyperglycemia

- Onset
 - Slow, can progress to coma

Signs and Symptoms of Hyperglycemia



Treatment of Hyperglycemia

- Use Correction Factor if applicable
- Check for ketones if blood sugar >240 twice in a row or >300
- Administer sugar-free, caffeine-free fluids
- Do NOT allow exercise when ketones are present

Quiz

A student walks in at 10:00 am. She has a blood sugar of 300 with no ketones present. Her last correction dose was given at home at 6:30 am. What steps can you take to lower the blood sugar now?

Quiz

- Give the patient a fast acting carbohydrate
- Give the correction dose and have the patient drink water
- Nothing, you must wait until lunch to correct the blood sugar

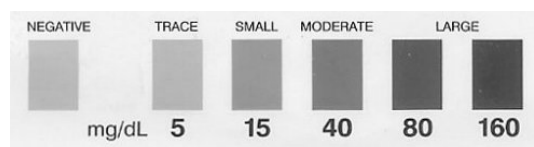
Quiz

- If you answered B you are correct
 - You can give the correction factor every 3 hours as needed to correct the blood sugar. In this case it has been 3 and a half hours since the last correction.

Ketones Testing Scale

- Do the following if ketones are present
 1. Drink lots of sugar-free liquids
 - No caffeine
 2. Call the diabetes doctor and notify parents if ketones are moderate to large
 3. Keep checking ketones until none are present

Ketones Testing Scale



Quiz

A student comes into your office with a blood sugar of 305. You test his urine for ketones. They register as small ketones. The student's next class is PE. Can he exercise in PE class?

Quiz

- **If you answered NO you are correct**
 - **The student can not exercise in PE class because ketones develop when the body is breaking down fat instead of sugar for energy**
 - **Therefore, the student will develop more ketones if they exercise**