



Children With Diabetes

With Glucagon Training For School
Staff





Goals for today

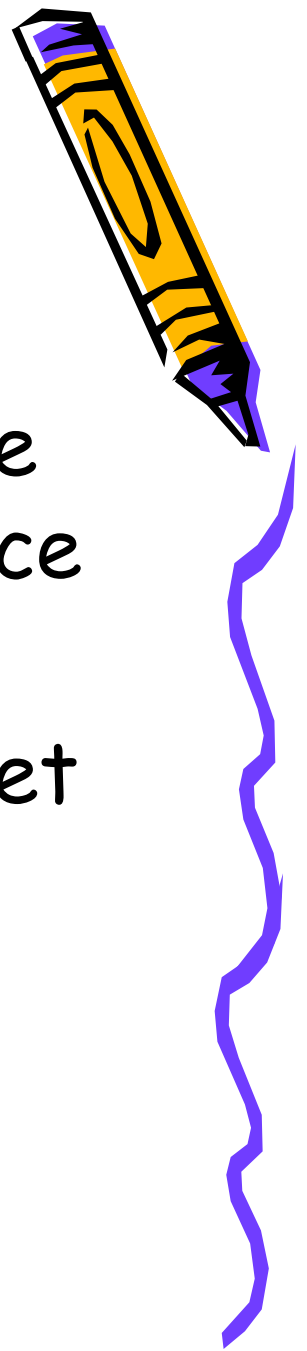


- Understand what diabetes is
- Recognize a hypoglycemic reaction
- Understand the intended purpose and the side effects of a glucagon injection
- Be able to draw up and inject glucagon as needed





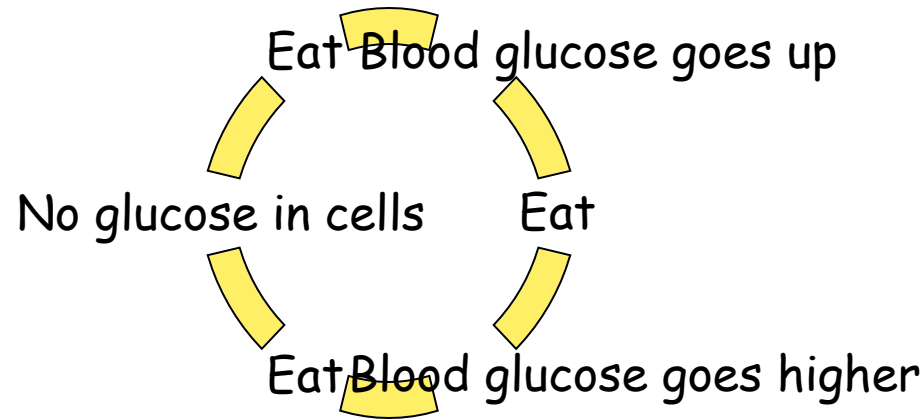
What is Diabetes



- Diabetes is a condition in which the body cannot use or does not produce enough insulin
- Without insulin, the body cannot get the glucose (sugars), that are the result of food digestion, into the cells for energy

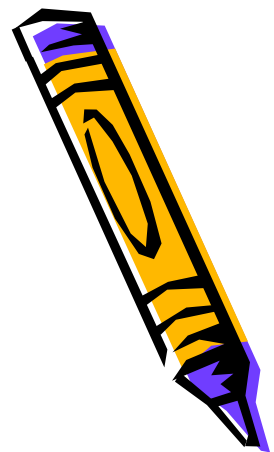


Without Insulin

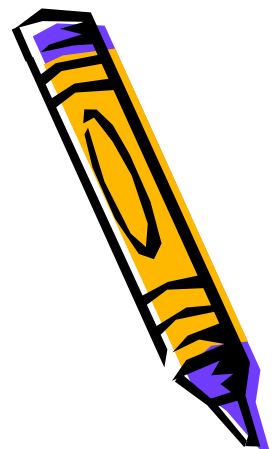


High levels of glucose (sugar) build up in the blood

The glucose (sugar) cannot get into the cell to provide energy



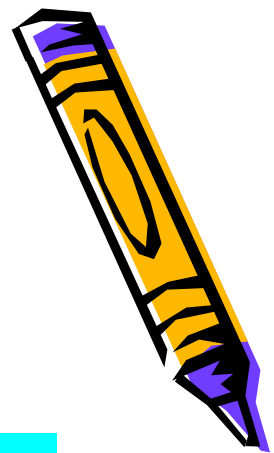
This is called Hyperglycemia



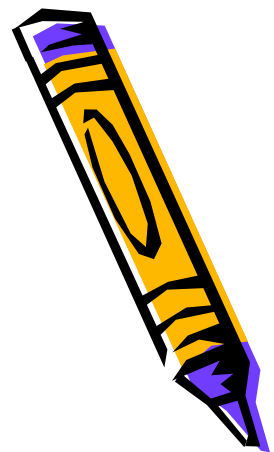
HYPERGLYCEMIA

Signs and symptoms

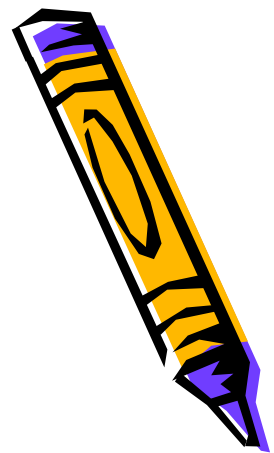
- Frequent urination
- Increased thirst
- Increased hunger
- Fatigue/weakness
- Weight loss
- Blurry vision
- Fast, deep breathing
- Slow or confused thinking



Treatment

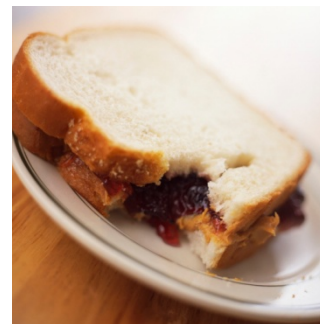


So... Hyperglycemia

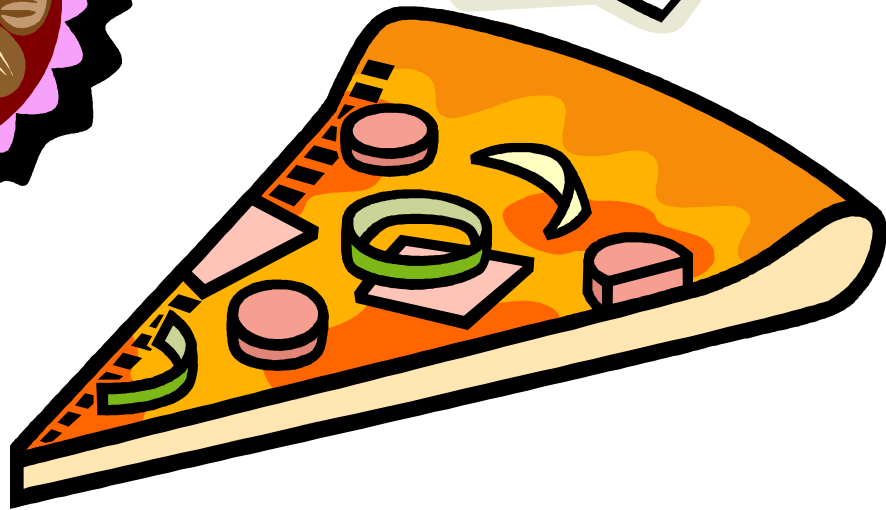


Meal Plans

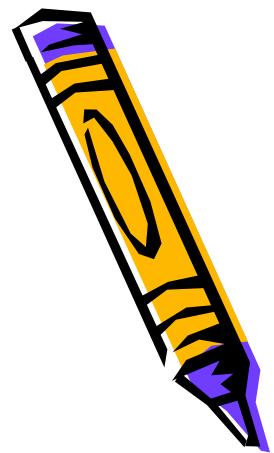
- Good nutrition is important to everyone, however a student with diabetes must plan their meals carefully
- A balanced diet, with moderation of concentrated sweets is the best
- Counting the carbohydrates in foods is called Carb Counting.
- Insulin is given according to the carbs eaten



WHAT ABOUT CANDY AND FAST FOOD?



Blood glucose checks

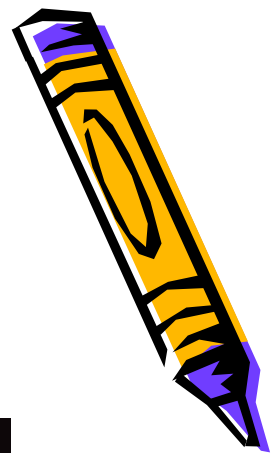


- Checking blood glucose daily is an important part of diabetes control
- Blood glucose checks are usually done before meals, at bedtime, and with exercise
- When in doubt or if the student is not feeling well or is complaining of feeling "low" check the blood glucose



Insulin

- Insulin is a hormone secreted by the pancreas. With diabetes it must be given as an injection
- The dose will vary with the blood glucose level, food intake and exercise

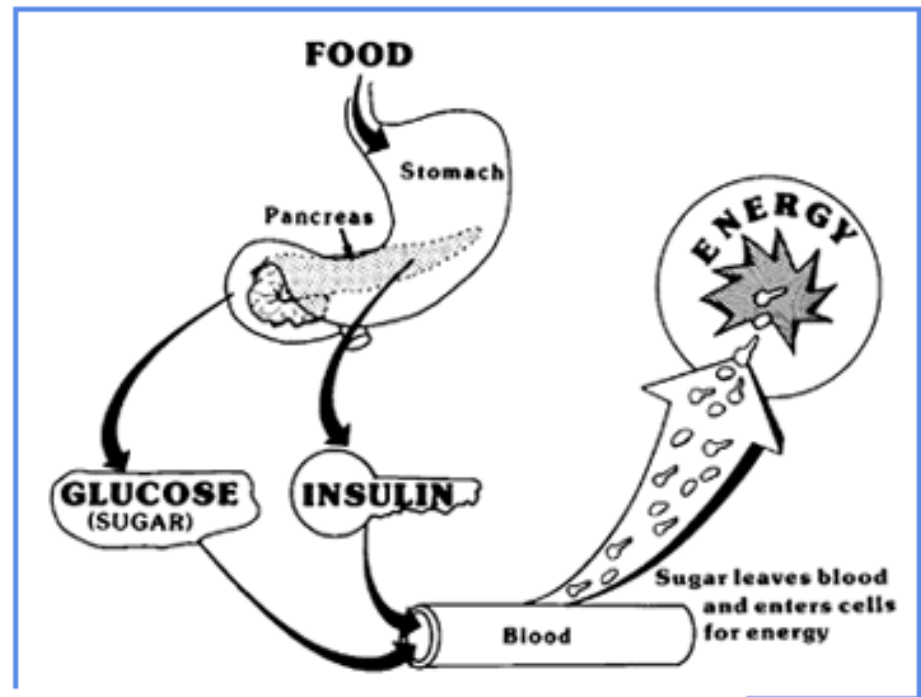




Insulin should...



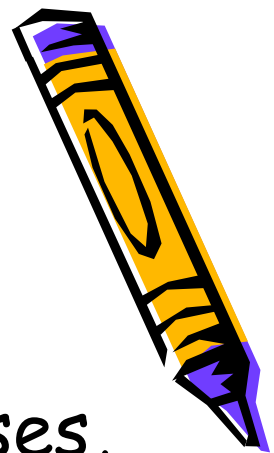
- Lower the blood glucose
- Facilitate the glucose getting into the cells to provide energy



Exercise

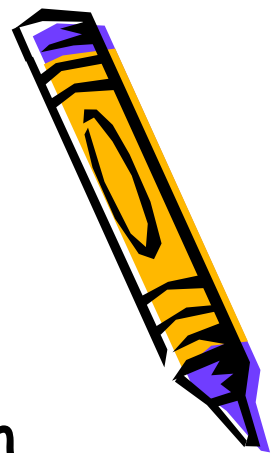
When the student exercises, the body uses the glucose more effectively, which can lead to low blood glucose (hypoglycemia).

The effects of insulin are more efficient with exercise.



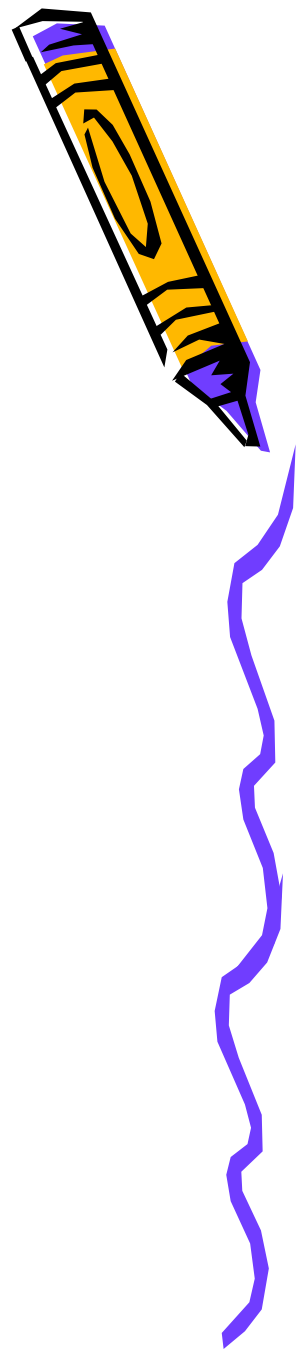
Insulin can cause blood glucose to fall too low when:

- Too much insulin given
- Not enough food eaten
- Too much exercise done
- Illness present



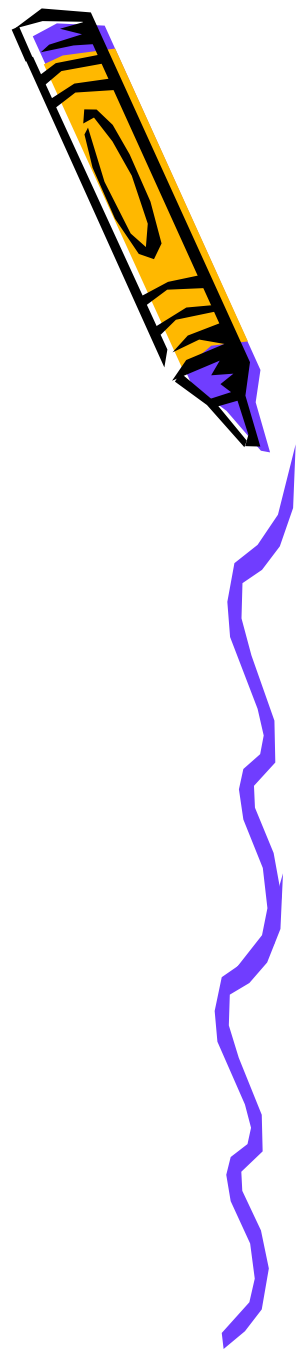
This is called hypoglycemia

- Hypoglycemia can be life threatening if not treated because the only energy source for the brain is blood glucose.





Symptoms for hypoglycemia



- Paleness
- Shakiness
- Hunger
- Headache
- Tingling
- Mood Change
- Tingling
- Sleepiness



Symptoms can progress to:

- Confusion
- Blurred Vision
- Late stages of hypoglycemia include:
- Coma
- Seizure
- Death



Treatment for Hypoglycemia for a conscious person:

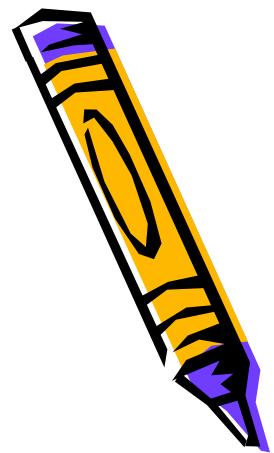


- If you can, check a blood glucose. If it is below 70 treat as a hypoglycemic reaction.
- When in doubt or unable to check a blood glucose, treat as a hypoglycemic reaction.





Treatment for Hypoglycemia for a conscious person:

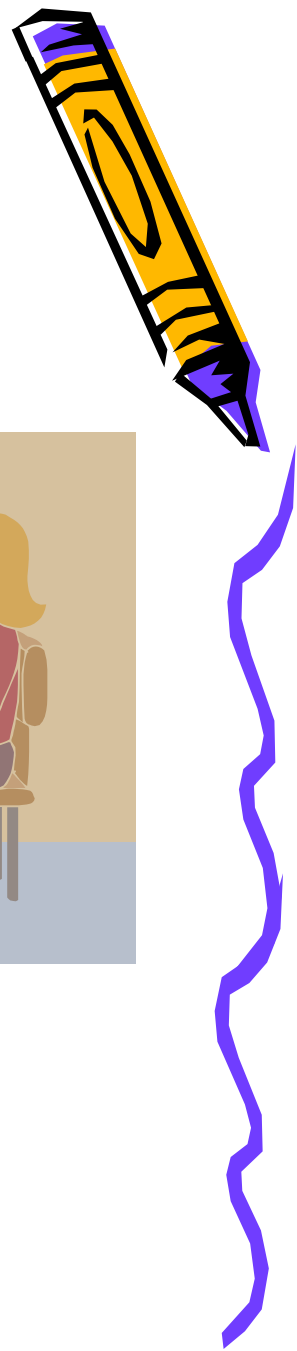



- Give a drink high in sugar:
 - 6oz. of regular soda pop (not diet),
 - 1/2-2/3 cup fruit juice
 - 3-4 glucose tablets
- Follow with a milk and protein - or go with them to lunch if they can eat within 10 to 15 minutes.



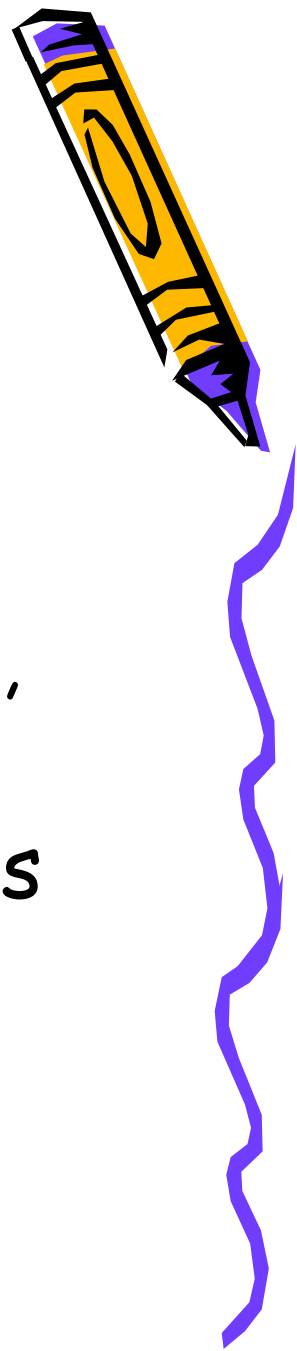
Stay with the child!

- You should see a response within 15 -20 minutes.
- You can repeat the treatment in 15 minutes if symptoms are still present or if they become worse.





Hypoglycemia with decreased awareness



- Glucose gels and/or tablets can be used to treat hypoglycemia.

Examples: Insta-glucose, Glucose 15, Glucose tablets, Dextrose tablets.

- Gels are placed the in the student's mouth toward the cheek and back teeth.

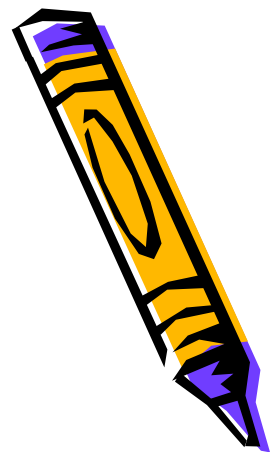
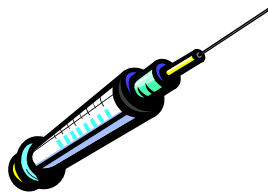
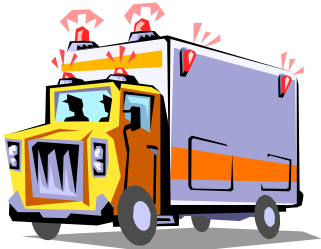


Treatment for an unconscious student:

Identify someone to call 9-1-1

Give Glucagon

Call the parent

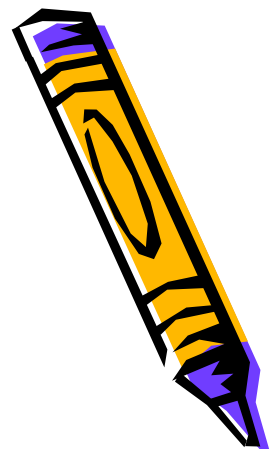


Glucagon



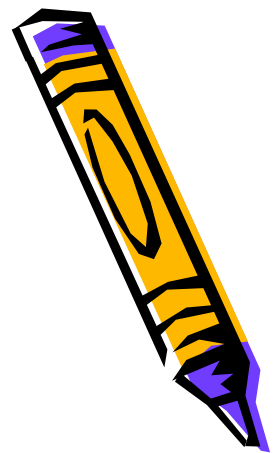
Lilly® Glucagon
Emergency Kit

Novo Nordisk®
GlucoGen® HypoKit™






Glucagon Adverse Reactions

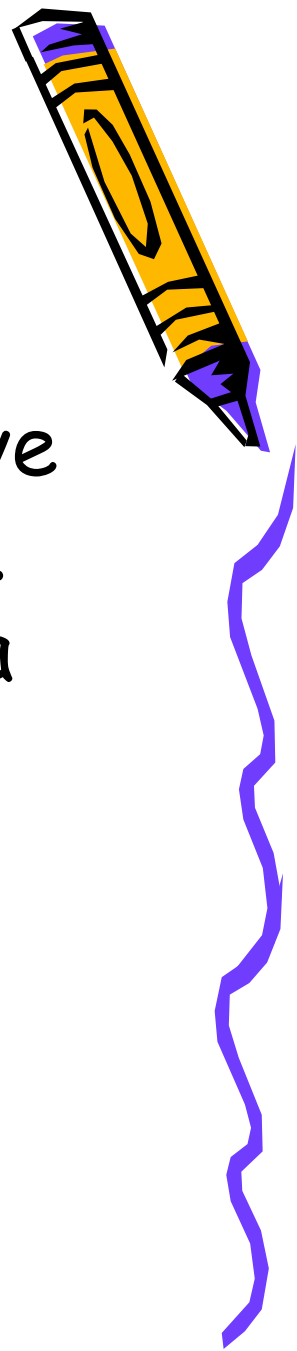


- The most common side effects are **nausea and vomiting**. These reactions may also occur with hypoglycemia.
- Keep the student positioned on his or her side.

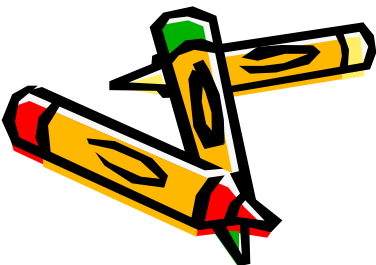




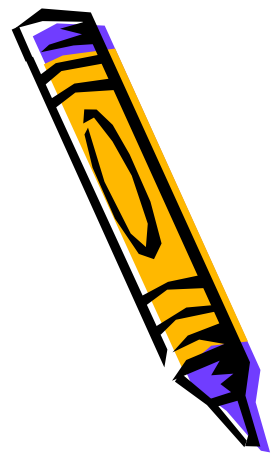
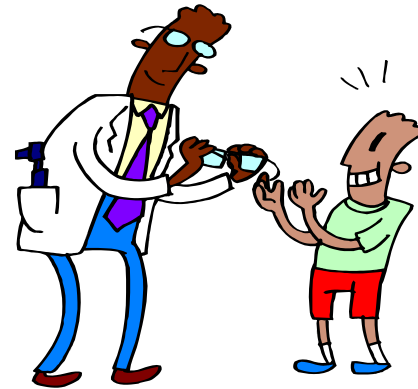
Why has this become necessary



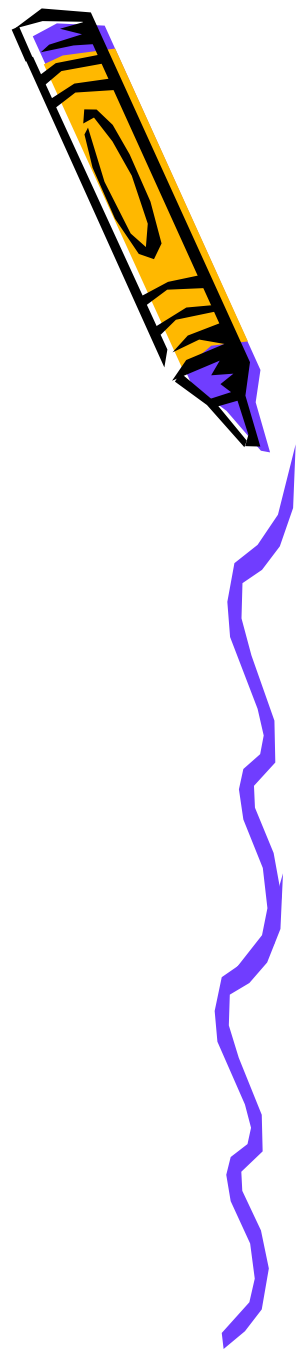
- The goal of diabetes care is to have the blood glucose closer to normal. Despite best efforts hypoglycemia will occur.
- Glucagon is the fastest means to raise the blood glucose level.



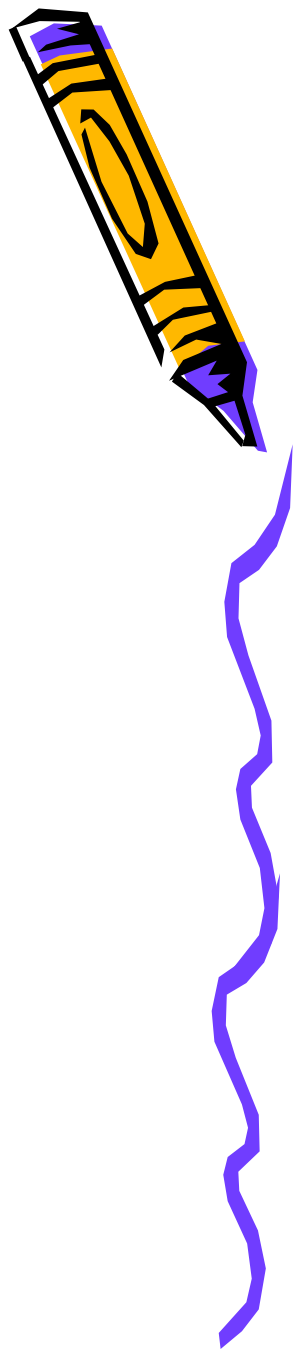
Illness and Stress affect Diabetes



There is no cure for
diabetes

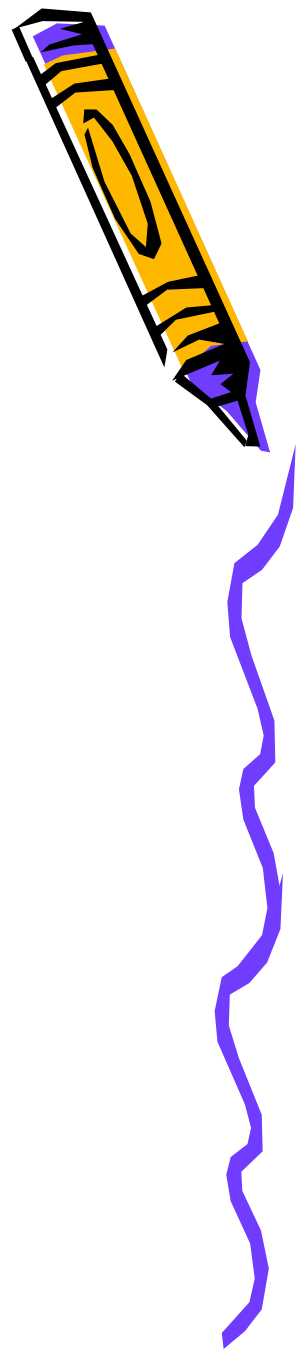


Steps for Glucagon Administration



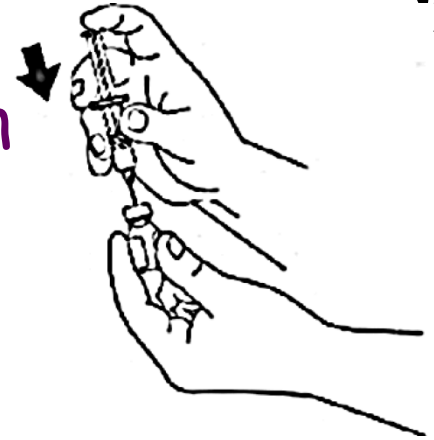
Preparation

1. Remove flip top seal from vial containing dry powder
2. Remove needle protector from syringe

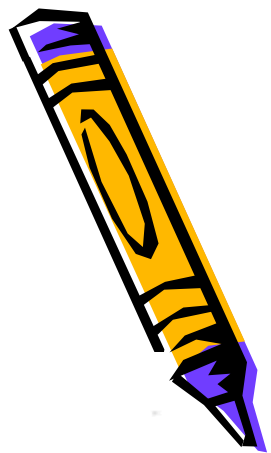


Mixing Solution

3. Slowly inject all sterile water in syringe into the bottle containing the powder



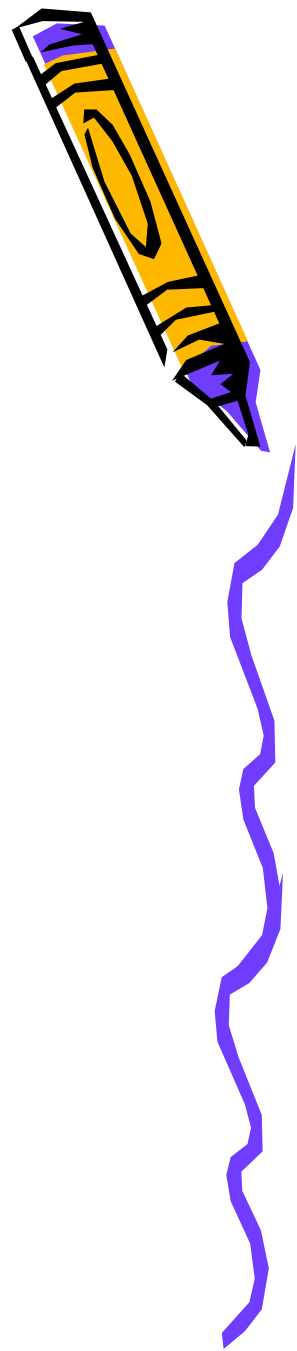
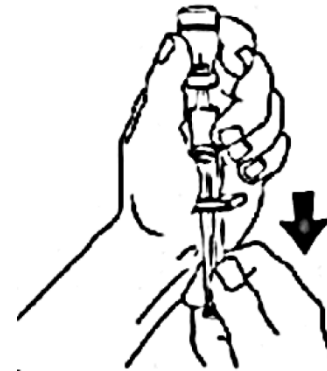
4. Gently swirl vial until all powder is dissolved and solution is clear (don't shake vial)



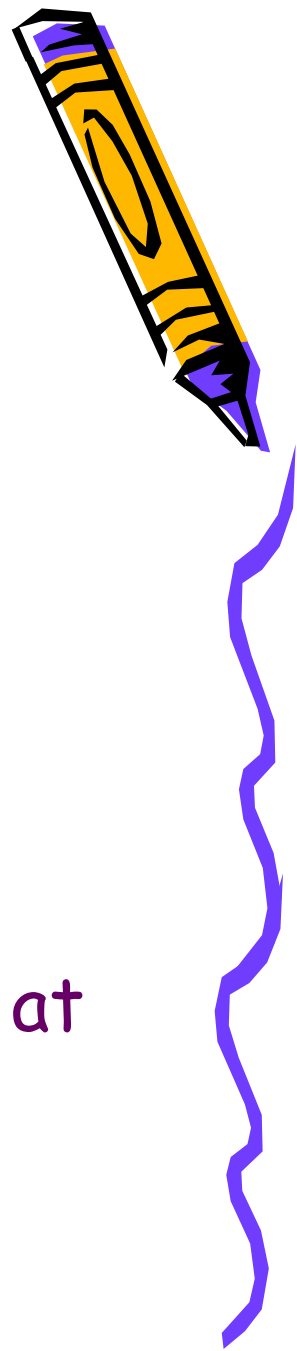
Drawing Out & Positioning

5. Withdraw all glucagon solution from vial

6. Turn student on his/her side



Dosing & Injecting



7. Insert needle straight in (90 degree angle)

arm (deltoid) muscle

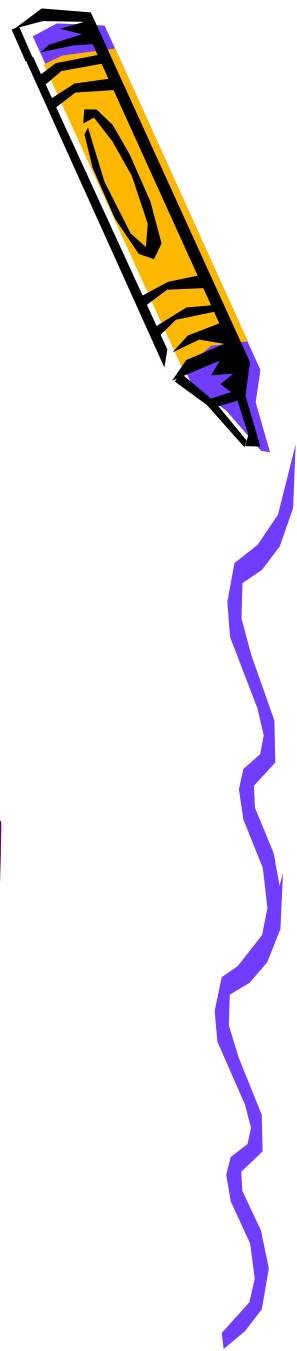
leg (outer thigh)

Note: Inject through clothing only if necessary

8. Withdraw needle, apply light pressure at injection site



Completing the Procedure

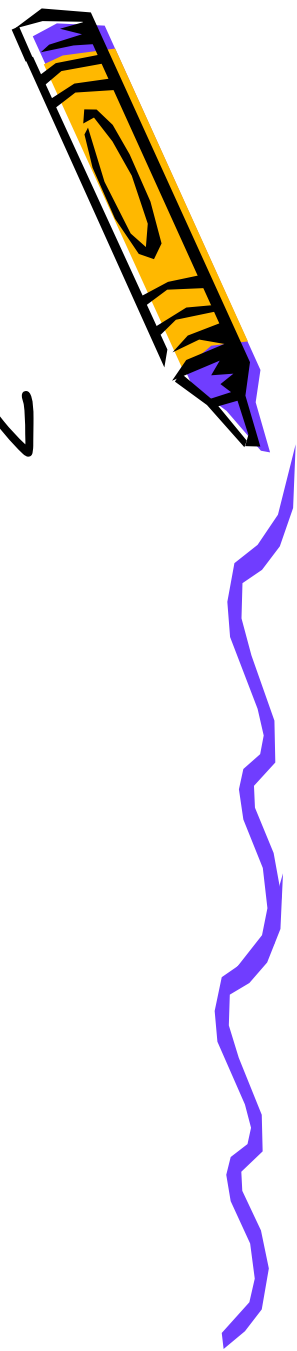


9. Place used needle back in kit and close the lid (do not recap)
10. Give used kit to EMS personnel



Let's Practice





- Prepared by: Mary Clark RN, NCSN
- Reviewed by:
 - American Diabetes Association
 - Utah Diabetes Center
 - Utah School Nurses Association
 - Utah Department of Health

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