

[Sample School Glucagon Letter]

Date:

RE: Safe Administration and Use of Glucagon

Dear Health Care Provider:

As an increasing number of children are diagnosed with both type 1 and type 2 diabetes, and as their care becomes more intensively managed, the school system will be called upon to become more involved in the diabetes management of children. Additionally, as diabetes management becomes more intensified, the risk of hypoglycemia occurring at school may increase. Glucagon is an injectable hormone, which rapidly reverses hypoglycemia by releasing glucose stores from the liver and muscle. It is a naturally occurring hormone made in the pancreas. Since it is a peptide hormone, it, like insulin, must be given subcutaneously or parenterally in order to be effective. When given by injection for hypoglycemia, glucagon can usually reverse the hypoglycemia within one to two minutes, and always within five minutes.

An additional advantage of glucagon is its safety profile. Glucagon may be given subcutaneously, intramuscularly, or intravenously, with good effect. It has only minimal side effects, which may include some nausea and occasional headaches, which also may be seen as a side effect of hypoglycemia, thus sorting out what side effect is due to the underlying hypoglycemia, which was appropriately treated with glucagon, and what is due to the glucagon, is difficult to sort out. Additionally, the risk of overdose is minimal, again, with headache and nausea as the side effect of a higher dose.

If glucagon is given inadvertently when the child is not hypoglycemic, but rather hyperglycemic, this likewise cannot cause any significant harm to the child. On the other hand, delay in the treatment of hypoglycemia can cause permanent brain damage or even death to a child who is suffering from insulin induced hypoglycemia.

For the above reasons, we feel that glucagon is an alternative that should be available to children with diabetes to ensure the prompt restitution of normal blood sugar values and minimize risk for permanent damage, due to hypoglycemia.

Should you have questions concerning glucagon administration, its side effects or its effects, please do not hesitate to contact me.

Sincerely,

HOW TO GIVE GLUCAGON, FOR SEVERE LOW BLOOD SUGAR IN CHILDREN WITH TYPE 1 DIABETES

Use Glucagon When Children Are Unconscious Or Having A Seizure

WHAT IS GLUCAGON

- Glucagon is a hormone made by the pancreas
- When it is injected during a serious low blood sugar, it causes the liver and muscles to release stored glucose into the bloodstream, this raises the blood sugar.
- *Glucagon is safe and cannot result in overdose.*

WHEN SHOULD GLUCAGON BE GIVEN?

- To children with severe low blood sugar
- When the child is not alert and awake to safely take oral treatment (seizure or unconsciousness)

SAFETY ALERTS WITH GLUCAGON

- Make sure the child is placed on their side to prevent choking.
- Call 911 immediately
- Give glucagon and stay with the child until fully recovered.
- Check blood sugar every 15 minutes until the person is fully awake & alert.
- No liquids until the child is fully awake, alert and has normal facial movement - may use gel or honey, keeping head elevated, if awake.
- (EMS responders will help decide if transport is necessary.)
- Parents have the right to refuse transport to the hospital if the child has fully recovered and is able to drink fluids without choking risk.

HOW TO MIX GLUCAGON

- Locate the bottle of powder and the syringe filled with fluid.
- Pop the cap off the bottle of powder.
- Remove the cap from the syringe of fluid.
- Insert the needle of the syringe into the bottle of powder.
- Squirt all the fluid into the powder.
- Remove the needle from the bottle of powder
- Shake the bottle gently several times, until all the powder disappears (liquid should be clear).

HOW TO DRAW UP GLUCAGON

- Locate the correct insulin syringe for the age of the child:
 - Less than 6 years = 30 unit insulin syringe
 - 6 years-16 years = 50 unit insulin syringe
 - 16 years- **adult size** =100 unit insulin syringe
- **NOTE: - (MAY DRAW THE LIQUID BACK INTO THE KIT SYRINGE AND GIVE IN THE TOP OF THE LEG)**
- After locating the correct insulin syringe, insert the syringe into the bottle of mixed glucagon.
- Make sure the syringe needle is poked through the center of the rubber seal on the bottle. (think of the bull's eye of a target.)
- Draw the glucagon into the syringe until the syringe is full of fluid.

HOW TO GIVE GLUCAGON

- Select a site to inject the glucagon, (arm, thigh, abdomen or buttocks.) *Note: glucagon is equally effective when given in the muscle or fat.*
- Insert the needle into the selected area.
- Inject all the fluid from the syringe.

FOLLOW UP CARE AFTER GIVING GLUCAGON

- Continue to check blood sugars every 15-30 minutes for the first hour.
- May cause vomiting or cramping, keep on side.
- Call your diabetes health care team to report the serious low blood sugar and get advice before giving any insulin.
- When the child is alert and awake, start clear liquids with sugar about every 15 minutes.
- Give solid food as tolerated, blood sugar should be at least 80.
- Continue to check blood sugar every hour for up to 6 hours or until the child is fully recovered.
- Provide adult supervision and watch this child closely for any low blood sugars during the next 24 hours.