

# Diabetes at Camp: Severe Hypoglycemia & Glucagon Administration

*Module 6 of 12*

**Special thanks to the team below and everyone who contributed to this work.**

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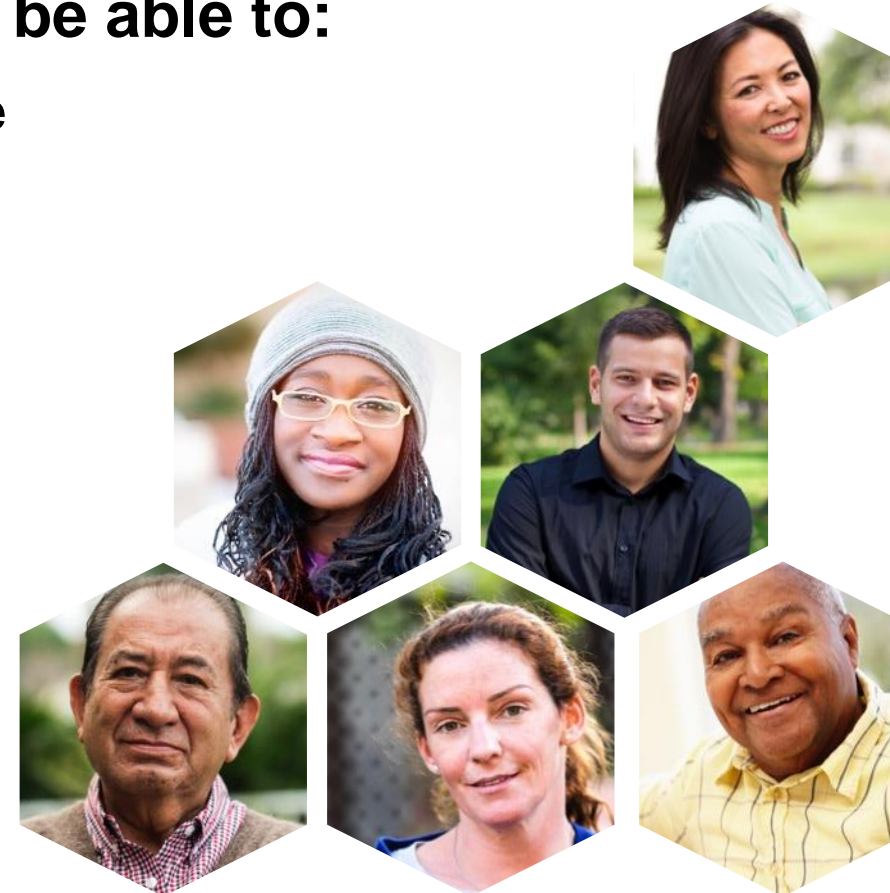
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# Objectives

**At the end of this module, the participant should be able to:**

- Identify the signs and symptoms of severe low blood glucose
- State what glucagon is and when it should be used
- Demonstrate how to administer glucagon



# Moderate and Severe Hypoglycemia

Moderate and severe hypoglycemia is typically not defined at camp by a specific glucose number, but rather the signs and symptoms.

	MILD	MODERATE	SEVERE
Symptoms (usually will occur with a blood glucose < 70 mg/dL)	Shaky Hungry Sweaty Pale Palpitations Mood changes (including irritability or impatience) Drowsy/Fatigue Lightheaded Headache Tingling in hands, feet, lips or tongue	Unable to drink effectively  Needs help from another person/can't treat themselves  Combative Uncooperative Confused Lack of focus Disoriented	Loss of consciousness and/or Seizure  Coughing/Choking

# Treatment of Moderate Low Blood Glucose

If the camper is very confused, spacey or very shaky and unable to drink effectively or eat his/her treatment:

1. Check the blood glucose
2. **Administer glucose gel** (Insta-Glucose, cake decorating gel)
3. Glucose gel should be put between gums and cheek and use cheek to rub it in
4. Recheck in 15 minutes and repeat as necessary
5. Once the camper is more alert and able to treat themselves follow steps for treating a mild/routine low blood glucose
6. If camper worsens and loses consciousness or has a seizure follow steps for treatment of a SEVERE low blood glucose



# Treatment of Severe Low Blood Glucose

If a camper has diabetes and is unconscious, has a seizure, or uncooperative/combatative/unable to eat/drink:

1. Check blood glucose
- 2. Administer Glucagon**
3. Place camper on his/her side for safety/prevent from choking
4. Follow internal action plan for when and how to contact diabetes provider and when or if 911 is needed

# Glucagon

- Glucagon is a hormone made in the alpha cells of the pancreas
- Glucagon moves blood glucose in the opposite direction of insulin (which lowers the blood glucose). It causes the liver to release glucose, raising blood glucose levels
- Glucagon can be injected if the camper is unconscious or having a seizure
- Because it is an emergency medication it should be kept in a convenient and known location
- Keep from freezing and extreme hot weather
- Do not mix/prepare the glucagon emergency kit until you are ready to use
- It can be called Glucagon or a brand name, GlucaGen



# Glucagon: READ THE LABEL

## VERY IMPORTANT!

- There is more than one brand of Glucagon.
- Make sure you have read the glucagon label insert carefully prior to camp to ascertain how to use it PRIOR to a camp emergency.



# Preparing the Glucagon Kit to be Used

1. Wash hands
2. Remove the flip-off seal of the glucagon vial (with tablet inside)
3. Remove the needle protector from the syringe
4. The solution must be mixed with the tablet
5. Inject the entire contents of the syringe in the glucagon vial
6. Remove syringe from vial (keep the syringe)
7. Swirl the bottle gently until the glucagon tablet dissolves completely. The liquid should be CLEAR and a water-like consistency.
8. Using the same syringe, hold the bottle upside down and withdraw all of the solution (1mg) for a camper over 44lbs (20kg).

*Note: A camper who is less than 44lbs (20kg) should get ½ the adult dose (0.5mg). When half the dose is needed, only withdraw half the solution from the bottle.*



# Administering Glucagon

1. Adhere to standard precautions (i.e. wash hands, put gloves on, etc.)
2. Clean the injection site (buttocks, arm, or thigh) with alcohol
3. Inject the needle at a 90 degree angle into the site. Inject all of the solution needed.
4. Remove the needle and press an alcohol swab against the injection site
5. Place camper on his/her side. It is possible that when the camper awakens the camper may vomit
6. Recheck blood glucose in 10-15 minutes

# Glucagon Side Effects

- High blood glucose (**ok** - do not treat with insulin)
- Nausea
- Vomiting
- Heart Rate increase (temporary)
- Allergic reaction

# Follow-up Care After a Severe Low:

Once a camper has had to have glucagon and they are now awake, you will need to:

- Feed the camper sips of fast-acting glucose (juice, etc.) as soon as he/she is awake
- After 10 minutes, encourage more solid foods such as crackers
- Recheck blood glucose every 15 minutes until blood glucose is greater than 80mg/dL
- Check blood glucose every hour for at least the next 4-5 hours for safety
- Camper is at high risk for more lows in the upcoming 24 hours
- **Camper's diabetes care team should be contacted as soon as possible** as likely the camper will need to reduce insulin dosage, increase food intake, and reduce physical activity
- Some campers may need additional care at a medical facility

# Glucagon at Camp

What if we don't have glucagon or the camper doesn't respond, how do we treat a severe low blood glucose?

- If you don't have glucagon or the camper is not responding, call 911. Paramedics will come and administer IV glucose.

What if a camper is going to be on a trip away from the camp home base, should we bring the glucagon?

- YES. The glucagon and low blood glucose supplies should be taken on the trip by a trained staff person. This is particularly important for overnight and extended trips that do not have immediate access to 911.

# Glucagon – Frequently Asked Questions

## How long does it take for glucagon to work?

- It should work in 10-15 minutes. If the camper is not awake after 15 minutes the glucagon injection can be repeated. If no response, call 911.

## Does getting glucagon require a prescription?

- Yes, children with diabetes at a non-diabetes camp should bring their glucagon from home.
- Children attending a diabetes camp will have glucagon available.

## Is the glucagon injected in to IM or SQ tissue?

- The syringe that comes with the kit will likely inject into the muscle, but it is, also, okay to inject into the subcutaneous fat. The glucagon works in both.

# Summary

- If the camper with diabetes is unconscious or having a seizure, they are likely experiencing severe low blood glucose
- Severe low blood glucose can be treated with glucagon
- Frequent blood glucose monitoring is needed after a camper experiences a severe low glucose
- Contact with the diabetes care team is necessary after the camper experiences a severe low blood glucose and glucagon administration



# Assessment

**1. A camp counselor comes to you and says that a camper with diabetes won't wake up and is not responding. It is most likely that this camper:**

- A. Forgot to take his insulin
- B. Is experiencing a severe low blood glucose
- C. Needs glucagon
- D. Is very tired and needs to rest more

**2. You get called to the soccer field because a camper with diabetes is crying and won't drink the juice he has with him for his low blood glucose. When you arrive, the blood glucose is 64 mg/dL. Which action is most appropriate first?**

- A. Give him crackers and cheese
- B. Administer glucagon
- C. Apply glucose gel to his gums
- D. Review the blood glucose logbook

# Assessment (cont.)

**3. You are preparing the glucagon emergency kit for a camper that is 90 lbs. You should administer:**

- A. 0.5 mg (half dose)
- B. 0.75
- C. 1 mg (full dose)
- D. None of the above



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