Note for RAC Members, 333-055 review

These slides are the most current draft update as of 9/21/2026.

Format and images are all new compared to 2018.

“Note to Trainer” slides are also new. These provide examples of “agency-approved equivalent” training options.

- Please reference slide numbers in comments, questions, or if proposing changes.
- The 2018 Glucagon Training Slides are available on the OHA Diabetes Providers page.

Note to Trainers

This training protocol is designed to cover content required by two sets of Oregon laws: Lifesaving Treatment Protocols (Oregon Health Authority) and Administration of Medication (Oregon Department of Education).

- The "**Diabetes Overview"** section is recommended but not mandatory. Approved trainers may opt to cover all, part, or none, based on individual learner needs.
- Training on administration of glucagon is mandatory, but the slides are not. At trainer discretion, other methods may be used for training the content in the section titled "**Glucagon Administration**."
- **Evaluation questions** are included in each section of slides. These can be skipped and reviewed at the end, or approved trainers may select another evaluation method.

OREGON HEALTH AUTHORITY

June 2026

Hypoglycemia and Glucagon

Lifesaving Treatment Protocol

Training Purpose

To train and authorize individuals to administer emergency medication **(glucagon)** to treat a person showing signs and symptoms of severe hypoglycemia when a medical professional is not available.

Knowing what to do
can save lives!

Presentation Outline

1. Training Protocol Regulations
2. Overview of Diabetes
3. Hypoglycemia (Low Blood Glucose)
4. Understanding Glucagon
5. Treatment Protocol for Severe Hypoglycemia
6. Glucagon Administration
7. Review and Demonstrate

A Note About Words

This training talks about “**Hypoglycemia (Low Blood Glucose)**.” People also say “low blood sugar.”

“Blood sugar” and “blood glucose” mean the same thing.

In this training, we use the word “**sugar**” when talking about food and drink.

We use the word “**glucose**” when talking about what is in the body.

Training Protocol Regulations

Regulations: Glucagon

Laws regulate the training of non-medical personnel to administer life-saving medications to treat three conditions: severe allergy, severe hypoglycemia, and adrenal crisis. [ORS 433.800-830; OAR 333-055]

This training is for the administration of **glucagon** for an individual with a **prescription** for glucagon suffering from **severe hypoglycemia.**

Required Content for Lifesaving Treatment Protocols

- recognizing symptoms of hypoglycemia
- recognizing risk factors of hypoglycemia
- proper administration of glucagon (including injection)
- follow-up actions.

Regulations: Glucagon

Trainer requirements

- Must be an Oregon-licensed physician, nurse practitioner or registered nurse.
- Trainees are not authorized to teach others to administer glucagon.

Trainee eligibility

- Must be 18 or older and have / expect contact with individuals at risk for severe hypoglycemia.

Certificate of Completion

- Signed by trainer to be valid. Specific to trainee.
- Expires after 3 years. Annual re-training is strongly recommended.

Legal immunity

- Individuals trained in accordance with state laws who act in good faith to administer emergency treatment are generally granted immunity from liability.

Regulations: Medication in Schools

Laws regulate the administration of medication in schools. [OAR 581-021-0037]

This protocol includes required training content, specific to glucagon.

The school RN may provide additional trainings or care delegations.

Required Content for Training School Personnel

- Safe storage, handling, and administration
- Accessibility and availability during an emergency
- Record keeping and confidentiality
- Whether to monitor response and what to do
- Emergency medical response after administering the medication
- Knowledge Assessment

Regulations: Summary

Oregon law permits successful trainees to administer glucagon to a person with a glucagon prescription who is experiencing hypoglycemia.

- This training protocol
  - must be provided by an approved trainer. This protocol DOES NOT authorize trainees to teach others to administer glucagon.
  - is specific to glucagon. This protocol DOES NOT authorize trainees to perform other care procedures or administer other medications.
  - is valid for 3 years. Annual recertification is strongly recommended.

- School settings have additional requirements. May require annual retraining.

Regulations: Assessment

Oregon law permits successful trainees to administer glucagon to a person with a glucagon prescription who is experiencing hypoglycemia.

A. True

B. False

Regulations: Assessment

Oregon law permits successful trainees to administer glucagon to a person with a glucagon prescription who is experiencing hypoglycemia.

A. **True**

B. False

Regulations: Assessment

Trainees are **NOT** authorized to teach others to administer glucagon.

A. True

B. False

Regulations: Assessment

Trainees are **NOT** authorized to teach others to administer glucagon.

A. **True.** Trainers must be an approved licensed health provider.

B. False

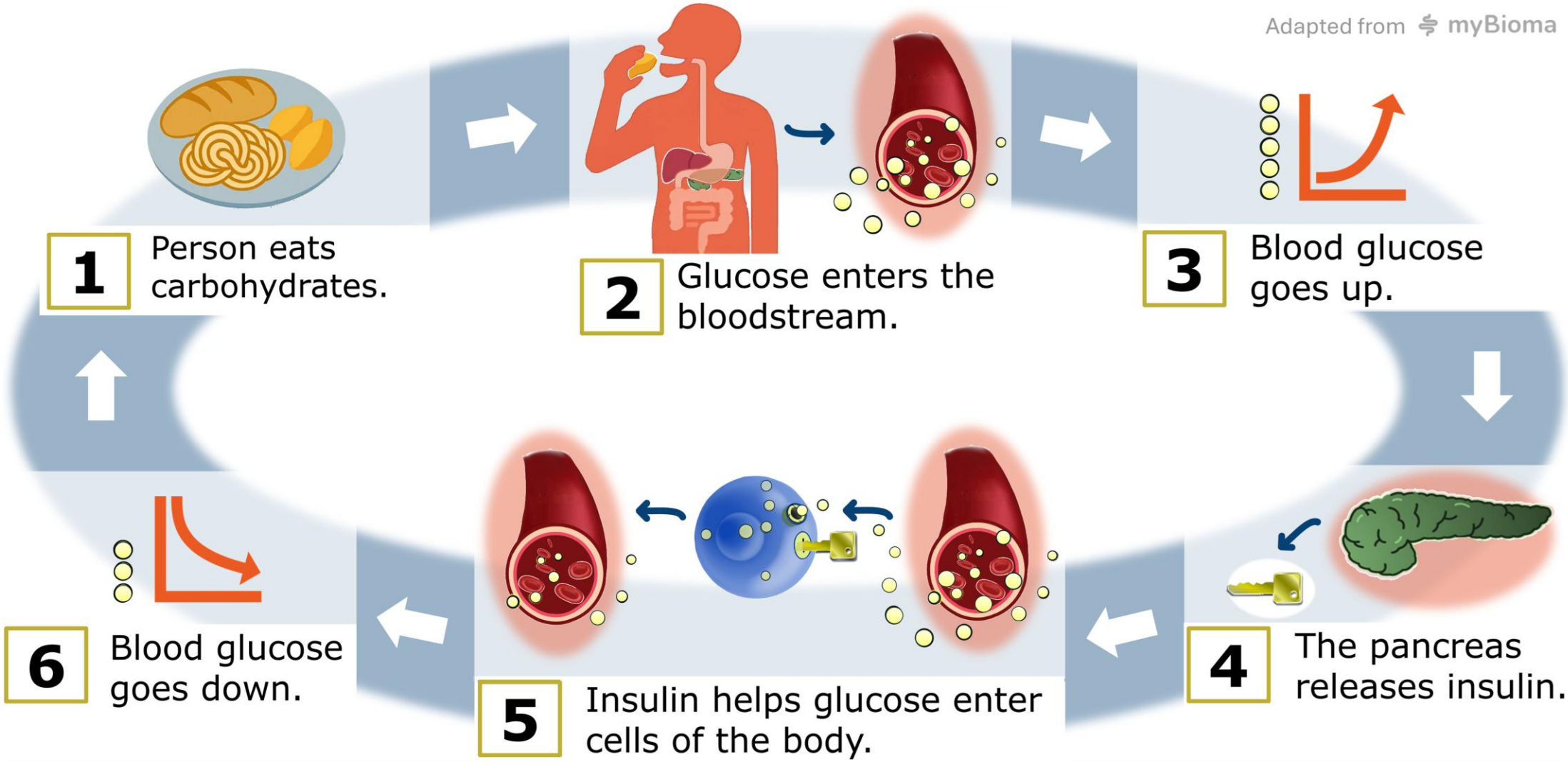
Overview of Diabetes

Overview of Diabetes

Diabetes is a
chronic health condition
that affects how the body uses
food for energy.

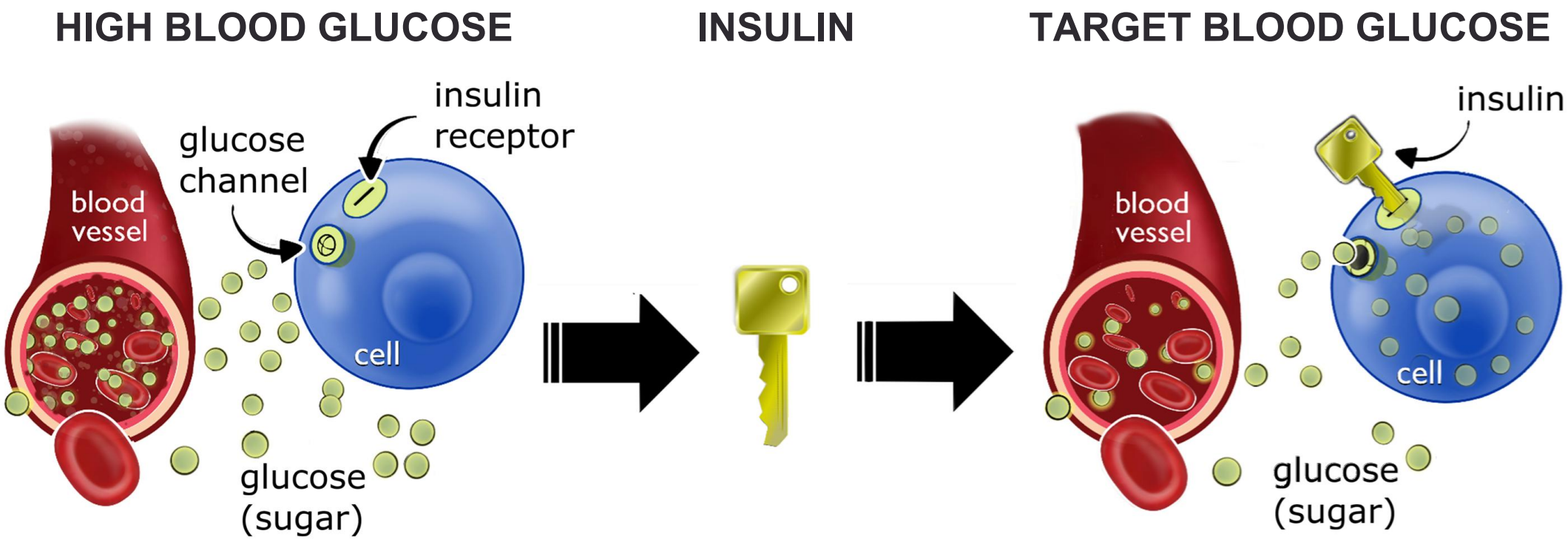


Overview: How the Body Processes Food



Overview: How Insulin Works

Insulin is a hormone.
It acts like a key to open the door so glucose can enter cells of the body.

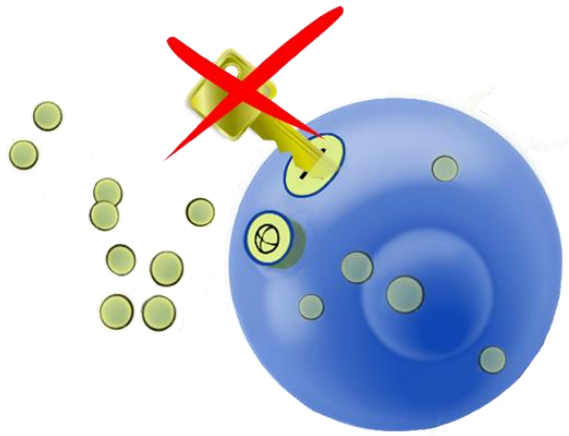


Overview: When the Body Lacks Insulin

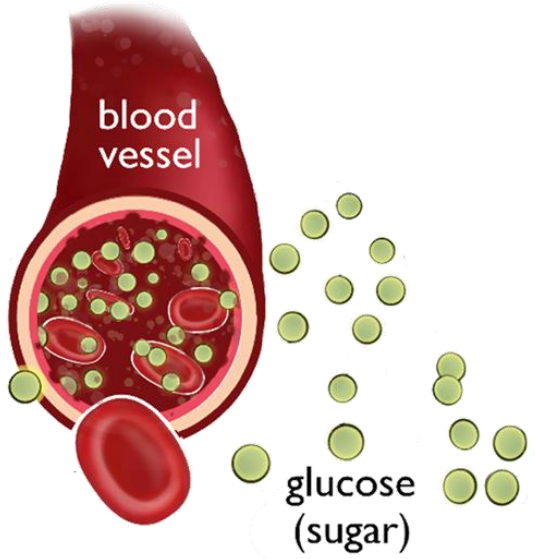
With diabetes, the body does not make or properly use insulin.
Without enough insulin, the usual process does not work.

Glucose builds up in the bloodstream. Cells lack energy. Blood vessels and organs can be damaged.

NOT ENOUGH INSULIN



HIGH BLOOD GLUCOSE



Overview: Type 2 Diabetes

- Acquired condition in which the body develops insulin resistance.
- Risk factors: genetics, lifestyle.
- Treatment can include lifestyle modifications, oral medications, and insulin replacement.
- Onset is most common in adults but increasing in youth.

In adults, this is the most common type of diabetes.

Important: Many people have similar habits; not all develop Type 2 diabetes. DO NOT shame or blame. Support healthy behaviors among all youth, not limited to those with diabetes.







Overview: Type 1 Diabetes

- Autoimmune condition in which the body mistakenly destroys cells in the pancreas that make insulin.
- Daily insulin replacement is necessary for survival.
- Risk factors: genetics, environmental triggers (virus).
- Type 1 cannot be prevented and there is currently no cure.
- Onset can be at any age.

In people under age 20, this is the most common type of diabetes.







Overview: Managing Diabetes

Managing diabetes is a delicate balance of:

- Food intake
- Blood glucose monitoring
- Insulin, other medication
- Physical activity
- Illness
- Physical & emotional stress

Consistent support and encouragement are critical, especially for young people learning to manage this complex condition.



Overview: Hyperglycemia (High Blood Glucose)

Without enough insulin, glucose builds up in the bloodstream leading to **hyperglycemia (high blood glucose).**



Hyperglycemia risks and complications:

- Impacts ability to concentrate and participate.
- Long-term complications, including damage to organs.
- An emergency condition called Diabetic Ketoacidosis (DKA).

Overview: Hyperglycemia Signs & Symptoms

Mild

- Poor concentration
- Increased thirst
- Frequent urination
- Increased hunger
- Increased fatigue
- Blurred vision

Be aware.

Follow care plan.

Moderate

- Dry mouth
- Flushed skin
- Sweet, fruity breath
- Vomiting
- Stomach cramps
- Nausea
- Flu-like symptoms

Respond. DKA concern.

Follow care plan.

Severe

- Rapid and/or shallow breathing
- Confusion
- Lethargy
- Profound weakness
- Repeated vomiting
- Unconsciousness

MEDICAL EMERGENCY

Overview: Hyperglycemia

Causes

- Not enough insulin
- Imbalance of food intake and insulin dose
- Missed insulin dose
- Illness
- Stress

Onset

- Usually slow to reach severe levels
- Causes damage over time (months, years)
- Onset may be faster with insulin pump malfunction, illness, infection

Treatment

- Insulin



Overview: Assessment

With Type 1 diabetes, a person's pancreas does not make enough _____ .
(Fill in the blank.)

A. water

B. insulin

C. glucagon

D. glucose

Overview: Assessment

With Type 1 diabetes, a person's pancreas does not make enough _____ .
(Fill in the blank.)

A. water

B. insulin

C. glucagon

D. glucose

Overview: Assessment

Insulin acts like a key that allows glucose to enter the cells of the body to be used for energy.

A. True

B. False

Overview: Assessment

Insulin acts like a key that allows glucose to enter the cells of the body to be used for energy.

A. True

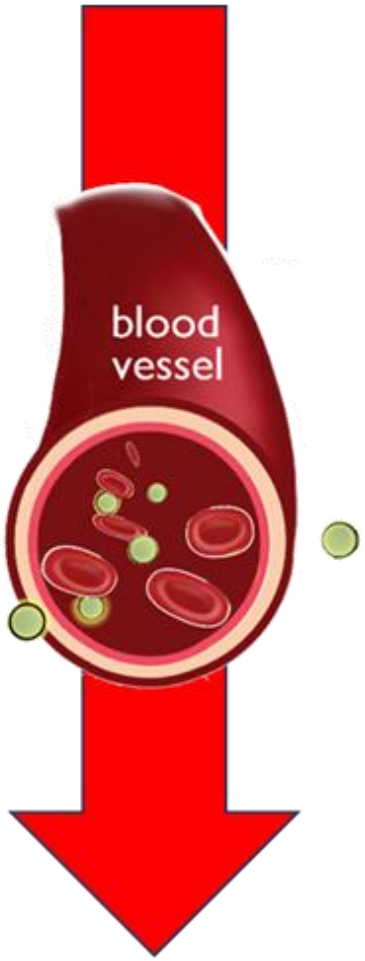
B. False

Hypoglycemia
(Low Blood Glucose)

Hypoglycemia (Low Blood Glucose)

People with known risk factors need to be monitored for **hypoglycemia (low blood glucose).**

- Daily insulin replacement is essential for people with Type 1 diabetes, and some with Type 2. However, insulin replacement can increase risk of low blood glucose.
- Some other health conditions also cause low blood glucose.



Hypoglycemia Risks and Complications

- Can lead to confusion, loss of consciousness, and seizures
- Can become life-threatening if not treated properly

Hypoglycemia Signs & Symptoms

Mild to moderate symptoms

- Shaky
- Anxious
- Weakness
- Irritable
- Tired
- Mild confusion
- Extreme hunger
- Sweaty
- Pale skin
- Dizzy
- Rapid heartbeat

Respond quickly. Follow care plan.

Severe

- Cannot eat or drink safely
- Extreme confusion
- Unconscious
- Unresponsive
- Seizure activity

MEDICAL EMERGENCY

Hypoglycemia

Causes

- Too much insulin
- Delayed or skipped meals
- Increased activity
- Illness
- Stress

Onset

- Can come on very quickly
- Requires immediate intervention

Treatment

- **Able to eat or drink safely:** Fast acting sugar
- **Unable to eat or drink safely:** Glucagon



Treating Mild to Moderate Hypoglycemia

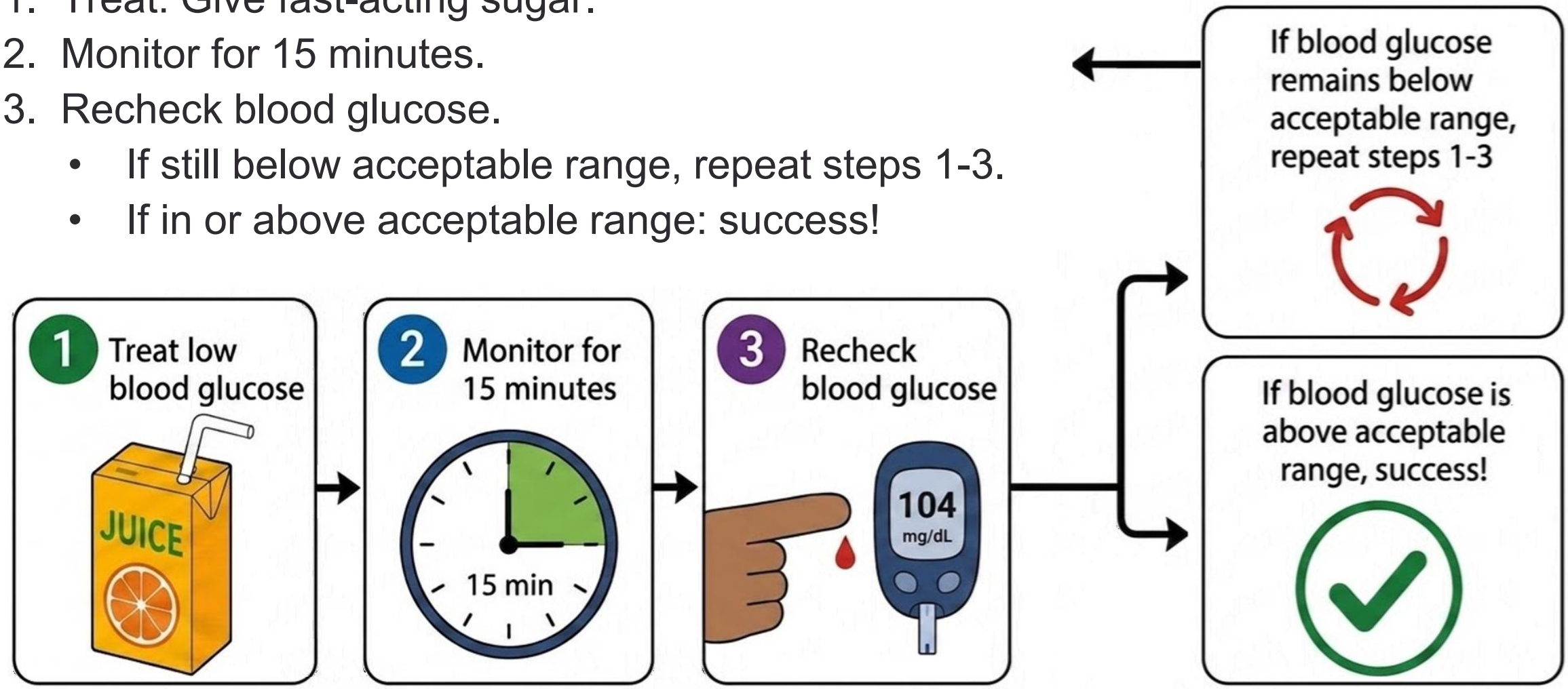
It is important to recognize hypoglycemia and treat it as soon as possible.

- Treating mild/moderate hypoglycemia can prevent severe hypoglycemia.
  - Some students can self-treat hypoglycemia if it is mild to moderate.
  - People with severe hypoglycemia will NOT be able to self-treat.

- The treatment for mild to moderate hypoglycemia is fast-acting sugar.
  - Follow health plans: grams of carbohydrate (sugar) needed varies.
  - If no health plan: give about 15 grams simple carbohydrates (fast-acting sugar).

The 15 Minute Rule

1. Treat: Give fast-acting sugar.
2. Monitor for 15 minutes.
3. Recheck blood glucose.
    - If still below acceptable range, repeat steps 1-3.
    - If in or above acceptable range: success!



Fast-Acting Sugar (Simple Carbs)

Examples of 15 grams fast-acting sugar (read labels):

- 1 pouch glucose gel
- 4 glucose tablets
- About ½ cup of juice or soda **(NOT diet)**
- 1 Tablespoon honey or syrup
- 1 Tablespoon sugar mixed in ½ cup water
- 3 Starburst or similar fruit chews
- 6 gummy bears
- 15 Skittles or small jellybeans
- 30 Smarties (2 rolls)



Treating Mild to Moderate Hypoglycemia

- Treat low blood glucose as soon as possible to avoid it becoming severe.
- DO NOT delay treatment if testing blood sugar can not be done.
- DO NOT leave a person alone with known or suspected low blood glucose.
- Be prepared to give glucagon if symptoms get worse.

Severe hypoglycemia is a life-threatening emergency.
A person experiencing this will need assistance from others.

Hypoglycemia: Assessment

Choose the primary **emergency** that can occur for people with diabetes.

A. Hyperglycemia

B. Hypoglycemia

Hypoglycemia: Assessment

Choose the primary **emergency** that can occur for people with diabetes.

A. Hyperglycemia

B. **Hypoglycemia**

Hypoglycemia: Assessment

The most common causes of low blood glucose are:

A. Skipping or not finishing meals

B. Taking too much insulin

C. More activity than usual

D. All of the above

Hypoglycemia: Assessment

The most common causes of low blood glucose are:

A. Skipping or not finishing meals

B. Taking too much insulin

C. More activity than usual

D. **All of the above**

Hypoglycemia: Assessment

The treatment for mild to moderate hypoglycemia includes:
(Select all that apply.)

A. ½ cup fruit juice

B. 15 Skittles or jellybeans

C. 4 glucose tablets

D. Beef jerky stick

E. Diet soda

Hypoglycemia: Assessment

The treatment for mild to moderate hypoglycemia includes:
(Select all that apply.)

A. ½ cup fruit juice

B. 15 Skittles or jellybeans

C. 4 glucose tablets.

D. Beef jerky stick – NO. Protein and fat slow down digestion.

E. Diet soda – NO. Sugar is needed!

Hypoglycemia: Assessment

After providing fast-acting treatment for mild or moderate hypoglycemia, several actions should be taken. Place the following actions in the proper order.

A. Recheck blood glucose

B. Monitor for 15 minutes

C. If below target, provide additional treatment

Hypoglycemia: Assessment

After providing fast-acting treatment for mild or moderate hypoglycemia, several actions should be taken. Place the following actions in the proper order.

B. Monitor for 15 minutes

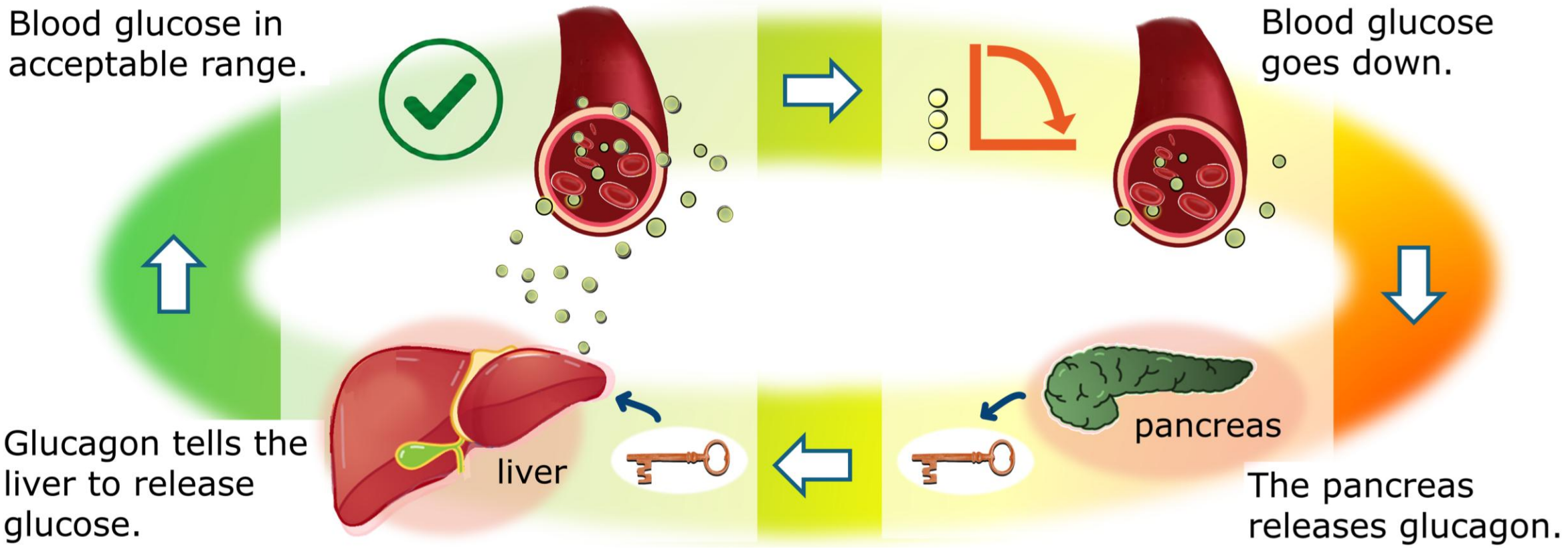
A. Recheck blood glucose

C. If below target, provide additional treatment

Understanding Glucagon

Glucagon

Glucagon is a hormone.
It is made and released by the pancreas when blood glucose levels drop too low.



Glucagon

Glucagon is also available as a prescription medication for people at risk for severe hypoglycemia–usually people with diabetes who take insulin.



There are multiple delivery devices for administering glucagon.



Side effects and adverse reactions

- The medication is safe and relatively free from adverse reactions and no human overdose ever reported.
- The most common side effects are nausea, vomiting, diarrhea, and headache.

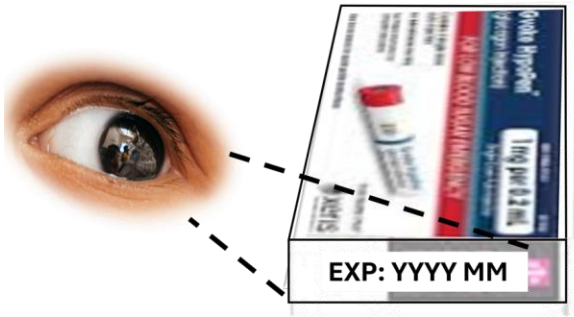




Glucagon Storage and Handling

- Always store in original container. **DO NOT** remove seals or open packaging until needed.
- Store at room temperature. Protect from extreme heat or cold.
- Check expiration dates regularly. Replace before expired.
- Syringes / liquids: Check to be sure the solution is clear with water-like consistency. **DO NOT** use if it has lumps, flakes, or particles.





Glucagon Access and Availability

Glucagon must be easy to access for rapid response.

- Store in secure location with clear, visible signage.
- Ensure designated staff have access at all times.
- Verify dose is replaced before expiration and after use.
- Plan for access during emergency situations (fire drill, lockdown, etc.), field trips and any school sponsored activities.





Glucagon: Student Self-Carry

Medications may be carried by a student in accordance with district policy and medication law [OAR 581-021-0037].

Student self-carry considerations

- Staff should be aware of students who self carry and where it is kept during the school day.
- A plan is needed to ensure access when needed.



Every person, regardless of age or experience, will require assistance when experiencing severe hypoglycemia to administer glucagon.

Glucagon Disposal

- Nasal spray and devices with NO needles
  - **Used:** discard in trash or dispose per local policy.
  - **Expired:** return to parent/guardian or dispose per local policy.
- Syringes and devices with needles
  - **Used:** discard in sharps container or place it in its package and give to EMS when they arrive.
  - **Expired or discolored:** return to parent/guardian, discard in sharps container or dispose per local policy.
- Some pharmacies accept expired medications for disposal.





Glucagon: Assessment

Glucagon is a hormone made by the body and is also available as a prescription medication.

A. True

B. False

Glucagon: Assessment

Glucagon is a hormone made by the body and is also available as a prescription medication.

A. **True**

B. False

Glucagon: Assessment

Every person experiencing severe hypoglycemia will require assistance to administer glucagon, regardless of age or usual level of independence.

A. True

B. False

Glucagon: Assessment

Every person experiencing severe hypoglycemia will require assistance to administer glucagon, regardless of age or usual level of independence.

A. **True**

B. False

Glucagon: Assessment

Glucagon should be kept in the refrigerator at all times.

A. True

B. False

Glucagon: Assessment

Glucagon should be kept in the refrigerator at all times.

A. True

B. False

Treatment Protocol for Severe Hypoglycemia

Treatment Protocol for Severe Hypoglycemia

Always **ADMINISTER GLUCAGON AND CALL EMS 9-1-1**

- if a person with diabetes shows signs of **severe hypoglycemia**

or

- if the person otherwise **meets criteria** for glucagon administration based on their individualized health plan

Severe

- Cannot eat or drink safely
- Extreme confusion
- Unconscious
- Unresponsive
- Seizure activity

MEDICAL EMERGENCY

Treatment Protocol

We will now review 6 steps for managing severe hypoglycemia with glucagon.

1. **RECOGNIZE**
2. **RESPOND RAPIDLY**
3. **ADMINISTER GLUCAGON**
4. **MONITOR AND NOTIFY**
5. **SUPPORT RECOVERY AND FOLLOW-UP**
6. **DOCUMENT**

Step 1. Recognize

- Know signs and symptoms of hypoglycemia and when treatment is needed.
- Severe hypoglycemia is a medical emergency and requires immediate intervention.
- When in doubt, assume hypoglycemia in a person with diabetes.

Severe symptoms

- Unable to eat or drink safely
- Extreme confusion
- Unconscious
- Unresponsive
- Seizure activity

MEDICAL EMERGENCY

Step 2. Respond Rapidly

Step 2.1. Check for life-threatening symptoms.

If a person is UNRESPONSIVE AND NOT BREATHING:

Call EMS 9-1-1

Begin CPR



For a person with diabetes, a second rescuer may provide glucagon during CPR.

If the person is not breathing, prioritize CPR.



EMS: Emergency Medical Services

Step 2. Respond Rapidly

Step 2.2. Check for severe symptoms.

If a person with diabetes is:

- unresponsive (still breathing)
- unconscious
- extremely confused
- has seizure activity
- is unable to eat or drink safely

Administer glucagon immediately.

Call EMS 9-1-1.





Step 2. Respond Rapidly

Step 2.3. If symptoms are not severe, follow protocol for mild to moderate hypoglycemia.

- Give fast acting sugar if the person is able to eat or drink safely.
- Be prepared to administer glucagon if symptoms get worse.

DO NOT put anything in the mouth of a person who is unable to eat or drink safely, is unconscious, unresponsive or having a seizure.



Step 3. Administer Glucagon

For severe symptoms, administer glucagon according to device instructions. Note the time.



- DO NOT leave person alone.
- Bring the dose to the person. DO NOT move the person unless their location is unsafe.
- Verify name and instructions on the prescription label.
- You may need help to administer glucagon if the person is confused, combative, or having a seizure.
- If not already done: **Call EMS 9-1-1 or have someone else call after glucagon is administered.**



Step 4. Monitor and Notify

Monitor for changes. DO NOT leave the person alone.

- Monitor for breathing, pulse, and seizure activity. Provide CPR or seizure rescue as needed until EMS arrives.
- Place in recovery position.
- Notify appropriate people.
- Improvement will usually be seen within 10-15 minutes.
- Although rare, the person may be unresponsive for other reasons.

Step 4. Monitor and Notify

Step 4.1. If the person has seizure activity, follow seizure protocol.



- **TIME**: Note when it starts and how long it lasts.
- **SAFETY**: Remove nearby objects and protect the head, such as by placing a folded garment under it.
- DO NOT restrain the person.
- DO NOT place anything in their mouth.



After a seizure:

- The person may be confused or minimally responsive.
- Place the person in recovery position.

Step 4. Monitor and Notify

Step 4.2. Position for safety

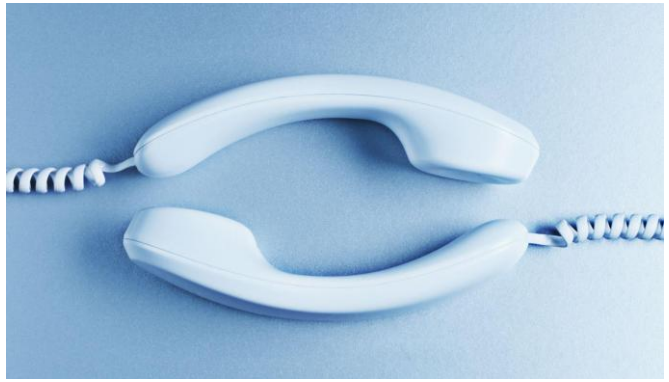


- If unconscious or semi-conscious, place the person in recovery position:
  - Turn them on their side with the top knee bent.
  - Place the top arm bent with the hand resting near their cheek to support the head.
- If the person is alert but feeling weak or dizzy, keep them sitting or lying down to prevent a fall.

Step 4. Monitor and Notify

Step 4.3. Notify appropriate people

- Student's parent/guardian
- School nurse
- School administrator
- Other designated school personnel
- EMS when they arrive: notify of symptoms observed, time glucagon was administered and other relevant details



Step 5. Recovery and Follow-Up

Step 5.1. After glucagon is administered, provide recovery care until EMS arrives.



- If the person becomes alert and is able to eat or drink safely, give fast-acting sugar.
    - Begin with small sips of sugar-containing liquid like juice or soda (**NOT diet**) or water with sugar or honey mixed in.



- If the person tolerates liquids without vomiting, give a snack with a mix of carbs, protein, and fat.

Step 5. Recovery and Follow-Up

Step 5.2. After glucagon, medical follow-up is recommended.

- Students should be transported by EMS or the parent/guardian from school.
  - EMS will decide whether to transport to medical facility.
  - Parent/guardian may decline transport if present.
  - School staff should not decline or sign medical paperwork.
- The parent/guardian or student should consult their medical provider:
  - For further instructions after the event
  - To replace the glucagon dose prior to / upon return to school or daycare.

Step 6. Documentation

Document during and after an emergency event

- Symptoms recognized and treatment provided.
- Dose given, time given, and (if injected) site of injection.
- Time that EMS was called and time that EMS arrived.
- Time and relevant details of transfer to EMS or to parent/guardian.
- Other information required by setting.

Keep information confidential

- Exceptions for school personnel with “legitimate educational interest” and emergency responders.
- Retain records per district and state policy.

Treatment Protocol: Assessment

If a person experiencing severe hypoglycemia is unconscious, it is best to put sugar cubes in the person's mouth.

A. True

B. False

Treatment Protocol: Assessment

If a person experiencing severe hypoglycemia is unconscious, it is best to put sugar cubes in the person's mouth.

A. True

B. **False**

Treatment Protocol: Assessment

Which of the following symptoms indicate severe hypoglycemia and require immediate administration of glucagon?

A. Extreme Confusion
B. Unresponsive
C. Unconscious
D. Unable to eat or drink safely
E. Seizure activity
F. All of the above

Treatment Protocol: Assessment

Which of the following symptoms indicate severe hypoglycemia and require immediate administration of glucagon?

A. Extreme Confusion
B. Unresponsive
C. Unconscious
D. Unable to eat or drink safely
E. Seizure activity
F. **All of the above**

Treatment Protocol: Assessment

If a person with diabetes is unconscious, unresponsive, having a seizure or otherwise unable to eat or drink safely, glucagon should be administered promptly.

A. True
B. False

Treatment Protocol: Assessment

If a person with diabetes is unconscious, unresponsive, having a seizure or otherwise unable to eat or drink safely, glucagon should be administered promptly.

A. **True**

B. False

Note to Trainers

The next section, "**Glucagon Administration**," covers mandatory content, but the slides themselves are not required. At trainer discretion, other methods and evidence-based resources may be used for training about this content. If using other training methods, you may prefer to skip to the final section of slides, "**Review and Demonstrate**."

Mandatory training content includes:

- Administration of glucagon, including by injection.
- Return demonstration by the trainee.
- Evaluation (knowledge verification) – can be verbal, written, or other.

Recommended: review all types of glucagon delivery devices.

Glucagon Administration

Step 3. Administer Glucagon

Check the prescription label.

Administer glucagon per manufacturer guidelines.



There are multiple delivery devices, including:

- Nasal spray
- Autoinjector
- Pre-filled syringe
- Glucagon Emergency Kit







Prescription Label: Medication “Rights”

State laws permit trainees to administer glucagon to a person for whom glucagon is prescribed.

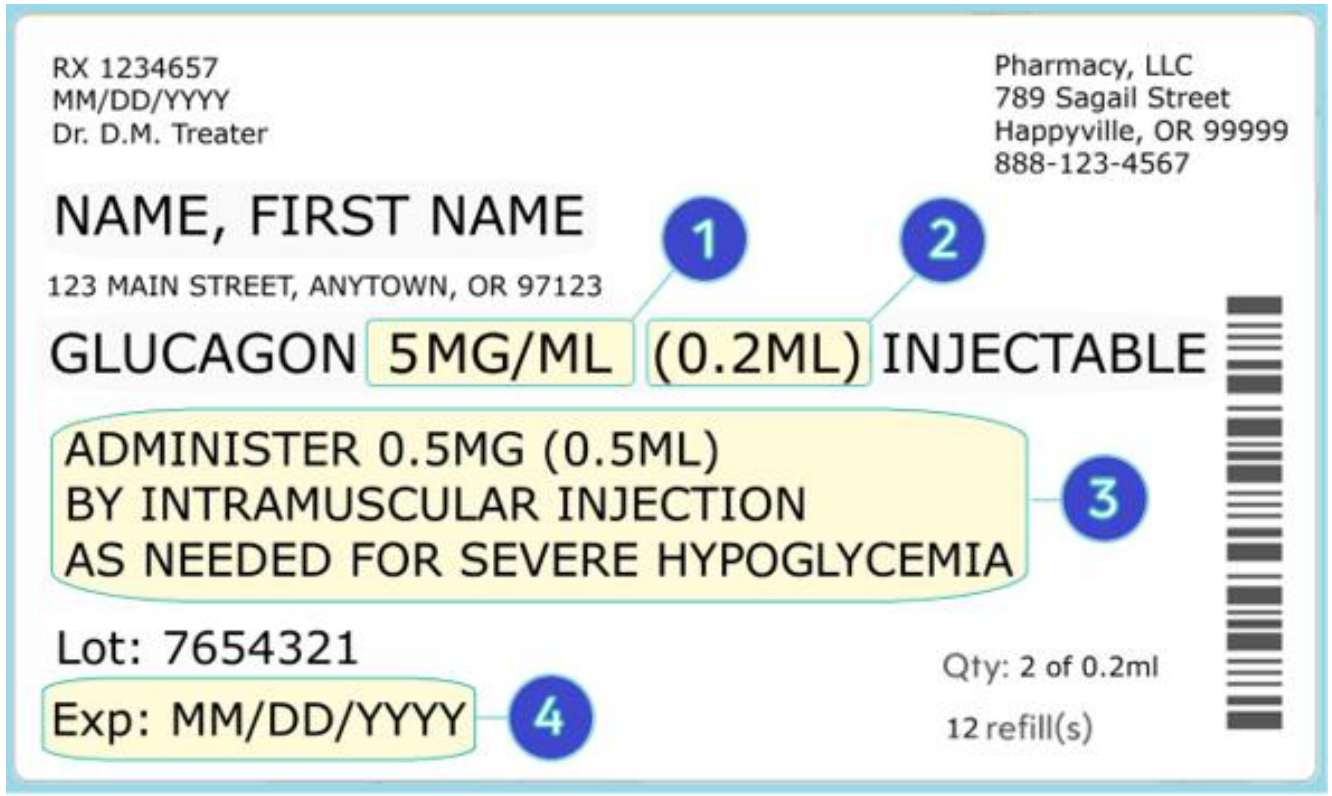
Check the glucagon prescription label and verify:

1) Right person (name)
2) Right medication (glucagon)
3) Right route (nasal, injection, etc.)
4) Right dose (all, half, etc.)
5) Right time/reason (hypoglycemia)

Prescription Label Example

Prescription labels give important information.

1. “MG/ML”: this is how much medication is in 1 milliliter.
2. “0.2 ML”: this is how much liquid is in the vial or syringe.
3. Instructions tell the **dose** (how much), **route** (how to give), and **time** (when or why).
4. “Exp:” Replace before this date.



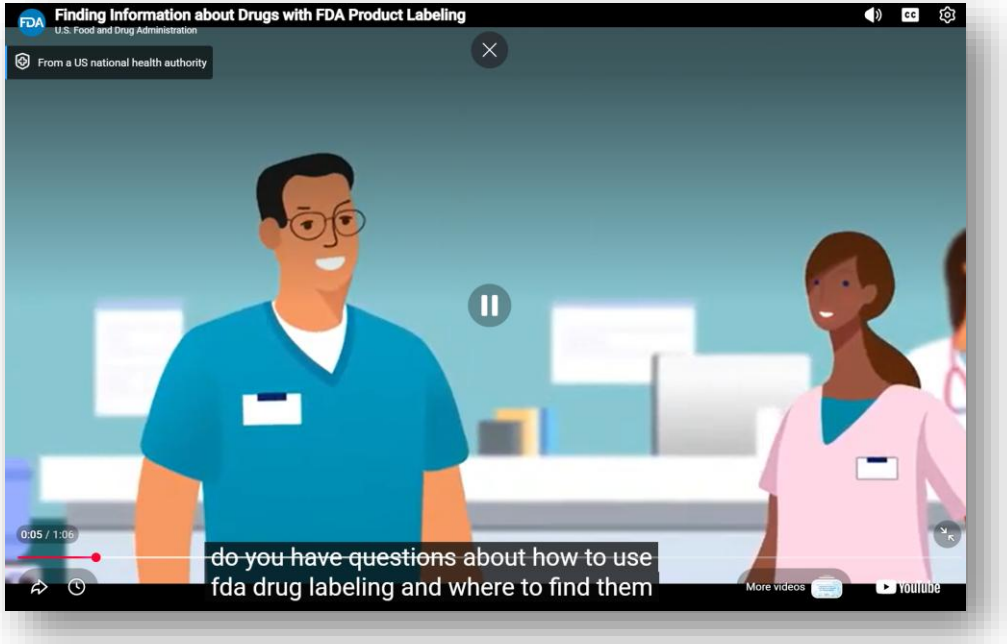
Manufacturer's Instructions

Each device is designed to be used in a specific way.

Review instructions for devices you may use before an emergency occurs.

Here is a short video from the FDA about understanding manufacturer's instructions (prescription drug labeling).

Note: DO NOT open device packaging to access instructions. Read package and review manufacturer's instructions online.



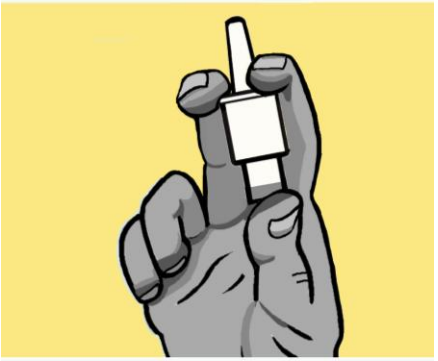
Glucagon Nasal Spray

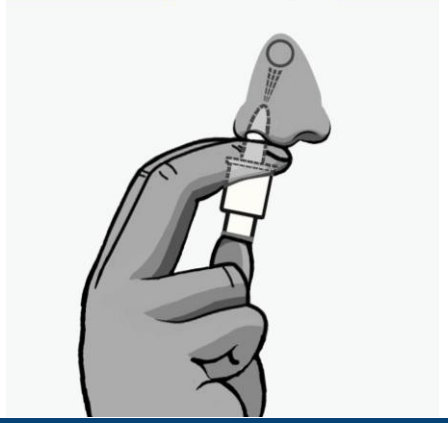
Nasal glucagon comes as a 3mg dose, dry powder. It is administered into a single nostril.

General instructions:

1. Open packaging and remove device.
2. Hold with two fingers and thumb. DO NOT test spray.
3. Insert nozzle into nostril until fingers touch the nose.
4. Press plunger firmly. No inhalation required.
5. Discard the nasal spray device in trash or per local protocol.







Nasal Spray: Manufacturer's Instructions

This is a short video that explains how to administer nasal glucagon.



General Instructions for Injections

- Select a site with muscle. The outer/upper arm (deltoid) is preferred.
- To prepare the site: expose the skin and clean with alcohol wipe if available.
- **DO NOT** remove the needle cap until you are ready to inject.
- After injecting, remove needle and press the site firmly.
- **DO NOT** recap a needle.
- Discard used syringes safely: put in sharps container or return to packaging until it can be given to EMS for disposal.





General Instructions: Video

This is a short video that reviews multiple types of glucagon injection.



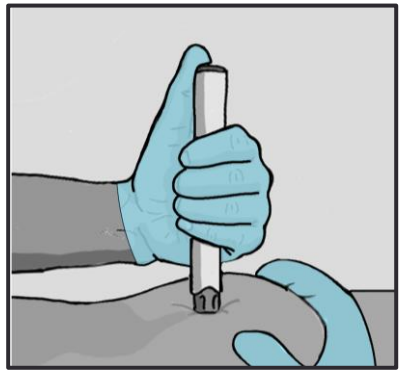
Glucagon Autoinjector

Glucagon autoinjector comes as a 0.5mg pediatric dose or a 1mg adult dose. It is ready-to-use to inject premixed glucagon.



General instructions:

1. Select and prepare the injection site.
2. Open the package and remove the device. Remove the protective cap on the needle end.
3. Stabilize the site and push needle end firmly against bare skin. Hold in place at 5 seconds, until fluid is fully injected.
4. Discard properly in sharps or give to EMS on arrival.



Autoinjector: Manufacturer's Instructions

This is a short video that explains how to use the glucagon autoinjector.



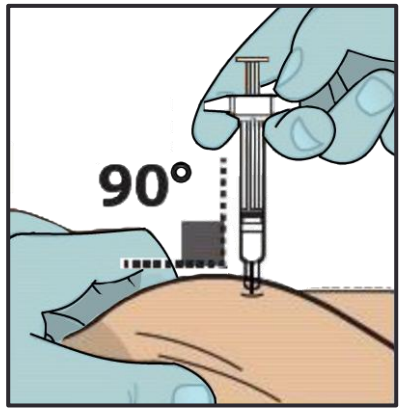
Glucagon Pre-filled Syringe (PFS)

Glucagon PFS comes as a 0.5mg pediatric dose or a 1mg adult dose. It is ready-to-use to inject premixed glucagon.



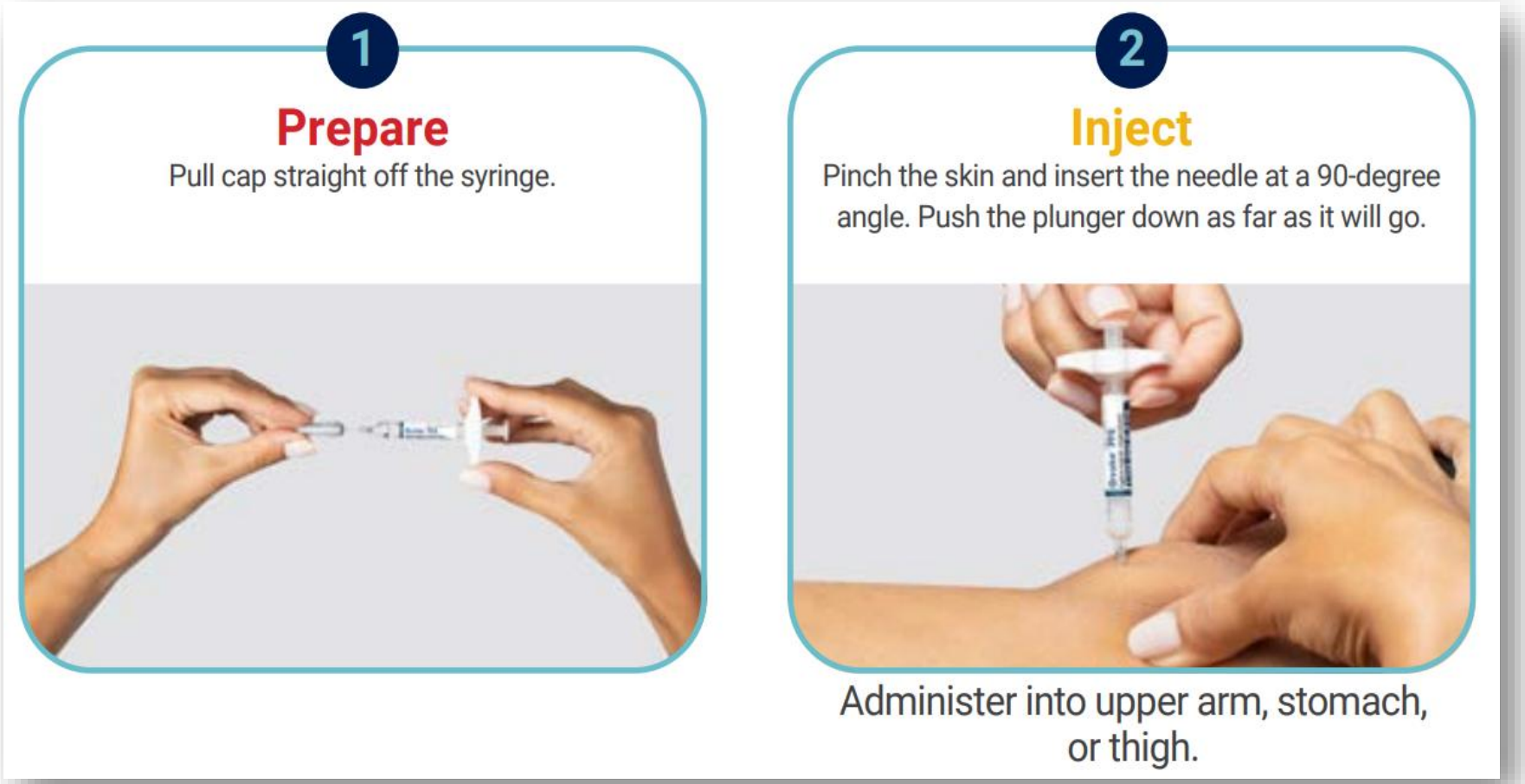
General instructions:

1. Select and prepare the site.
2. Open the package and remove the syringe. Remove the protective cap on the needle end.
3. Stabilize the site and push needle in firmly at a 90º angle. Push down on the plunger as far as it will go.
4. Discard properly. Use care: needle will remain exposed.



PFS: Manufacturer's Instructions

This is a written guide that explains how to use the glucagon pre-filled syringe.



Glucagon Emergency Kit

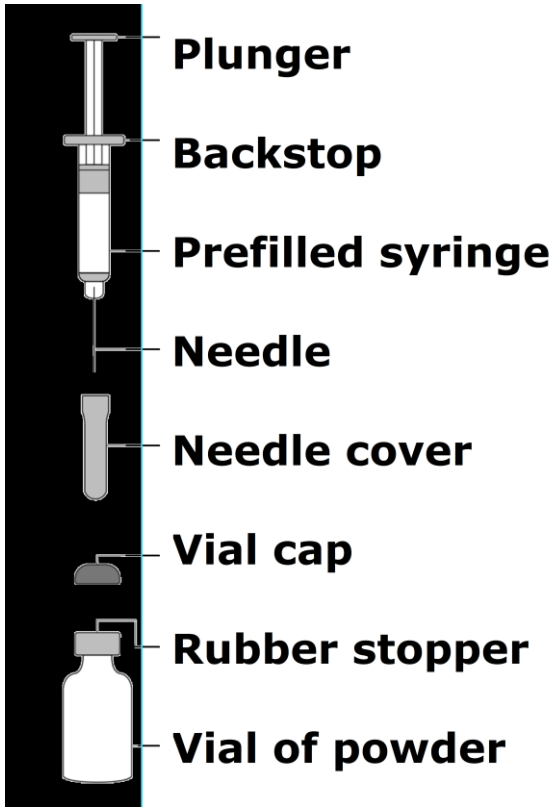
Glucagon Emergency Kit comes as a separate bottle of powdered glucagon, and a syringe with attached needle filled with liquid.

The liquid needs to be mixed with the powder at time of use.

General instructions:

1. Select and prepare the site.
2. Take out kit components.

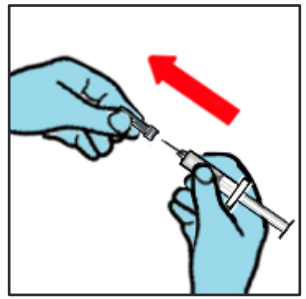
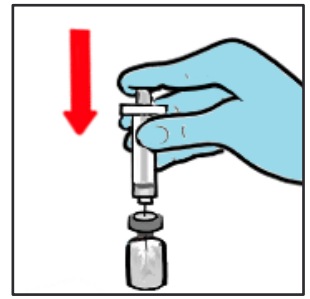




Glucagon Emergency Kit

3. Prepare the glucagon for injection.
    a. Remove the vial cap (flip-off seal). Remove needle cover from syringe. DO NOT remove plastic clip from syringe.
    b. Insert the needle into the vial. Push through the rubber stopper all the way into the vial.
    c. Push the plunger all the way to the syringe backstop to inject ALL the liquid into the vial.
    d. Leave the needle in the vial and swirl gently until all the powder dissolves.




Glucagon Emergency Kit

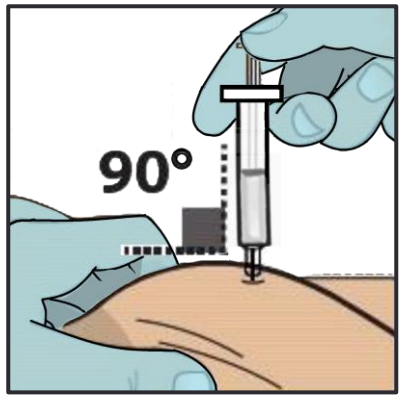
4. Pull back on the plunger to draw up the right amount of medication according to prescription instructions.

    The amount prescribed might be less than the full vial.

    Important: Always mix the full amount, then draw up the amount prescribed for the person.



5. Stabilize the site and push needle in firmly at a 90º angle. Push down on the plunger as far as it will go.



6. Discard properly. Use care: needle will remain exposed.

Emergency Kit: Manufacturer's Instructions

This is a written guide that explains how to use the glucagon pre-filled syringe.

This is a short video from Cincinnati Children's that explains how to use the glucagon pre-filled syringe.

Note: DO NOT remove needle from vial until medicine is mixed.



Review and Demonstrate

Review: Overview of Diabetes

Diabetes is a chronic health condition that affects the way the body uses food for energy.

Insulin is a hormone made in the body or given as a medication.

Insulin allows glucose to be pulled from the bloodstream into the cells to be used for energy.

In diabetes, the body either doesn’t produce insulin (Type 1 diabetes) or doesn’t respond to insulin correctly (Type 2 diabetes).

Review: Body Processes

Insulin and glucagon are both hormones made by the pancreas, and both help keep blood glucose in the desired range.

High blood glucose (hyperglycemia) can cause problems over time.

- If blood glucose goes too high, the pancreas releases insulin.
- Insulin can be given as a medication if the body doesn't make enough.

Low blood glucose (hypoglycemia) can become severe very quickly.

- If blood glucose goes too low, the pancreas releases glucagon, which makes the liver release glucose in the bloodstream.
- Glucagon can be given as a medication to treat severe hypoglycemia.

Review: Signs of Hypoglycemia

Treat hypoglycemia right away.

- Early treatment with fast acting sugar can prevent a life-threatening emergency.
- For severe symptoms, glucagon is required.

Mild to moderate hypoglycemia symptoms:

shaky, anxious, weakness, irritability, tiredness, mild confusion, extreme hunger, sweaty, pale skin, dizziness, rapid heartbeat.

Severe symptoms

- Unable to eat or drink safely
- Extreme confusion
- Unconscious
- Unresponsive
- Seizure activity

MEDICAL EMERGENCY

Review: Hypoglycemia Protocol

1. **RECOGNIZE** the signs of hypoglycemia.
    - When in doubt, assume hypoglycemia in a person with diabetes.
2. **RESPOND RAPIDLY.**
    - Check for severe or life-threatening symptoms. Start CPR if necessary.
    - If the person is alert and able to eat or drink safely, treat with fast-acting sugar.
    - If the person is unconscious, having a seizure, or otherwise unable to eat or drink safely, prepare to give glucagon.

Review: Hypoglycemia Protocol

3. **ADMINISTER GLUCAGON.**
    - Administer glucagon per device instructions. Note the time. Call 9-1-1.
4. **MONITOR AND NOTIFY. DO NOT leave the person alone.**
    - Watch for seizure, breathing, pulse. Give CPR if needed.
    - Position for safety.
    - Notify parent/guardian and designated school personnel.
5. **SUPPORT RECOVERY AND FOLLOW-UP.**
    - When the person is awake and can swallow safely, give fast-acting sugar.
    - Transport with EMS or with parent/guardian. Encourage medical follow-up.
6. **DOCUMENT.**
    - Include what was seen, what was done, when, and results.



Demonstrations and Evaluation