DIABETES MANAGEMENT: INFORMATION FOR COACHES

Kennedy Krieger Institute

Maryland State Department of Education
PREPARING WORLD CLASS STUDENTS

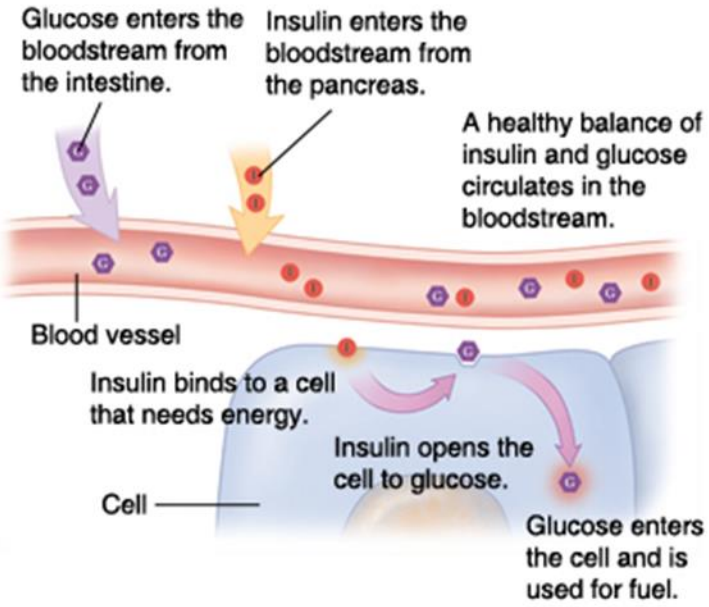
SHNIC

Objectives

- The participant will be able to state the definition of diabetes.
- The participant will be able to identify signs and symptoms of hypoglycemia.
- The participant will be able to verbalize the treatment for hypoglycemia.
- The participant will be able to state the impact of exercise on the student with diabetes.

What is Diabetes?

- Diabetes is a disease where the body does not produce insulin or does not use insulin properly.
  - **Insulin** is a hormone normally made by the body. It helps glucose (sugar) enter cells where it can be used for energy.
  - Without insulin, glucose remains in the blood stream and cannot be used for energy by cells.



Lack of insulin → Increase in Glucose

Diabetes Basics

- Sometimes, blood glucose levels are too high resulting in a condition called ***hyper*glycemia.**
  - If this happens, insulin must be administered to lower blood glucose levels.
  - Insulin administration for children with type 1 diabetes is essential for survival.
- Sometimes, blood glucose levels drop below the safe range resulting in a condition called ***hypo*glycemia.**

Diabetes Basics

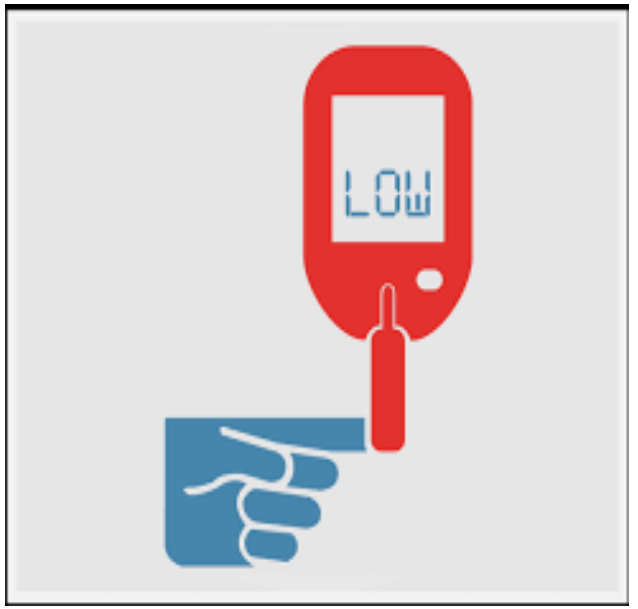
- Safe blood glucose levels are achieved through a careful balance of food intake, exercise, and insulin administration.

  - Insulin and exercise can decrease blood glucose levels.
  - Food can increase blood glucose levels.
  - Stress, illness, or injury can increase or decrease blood glucose.

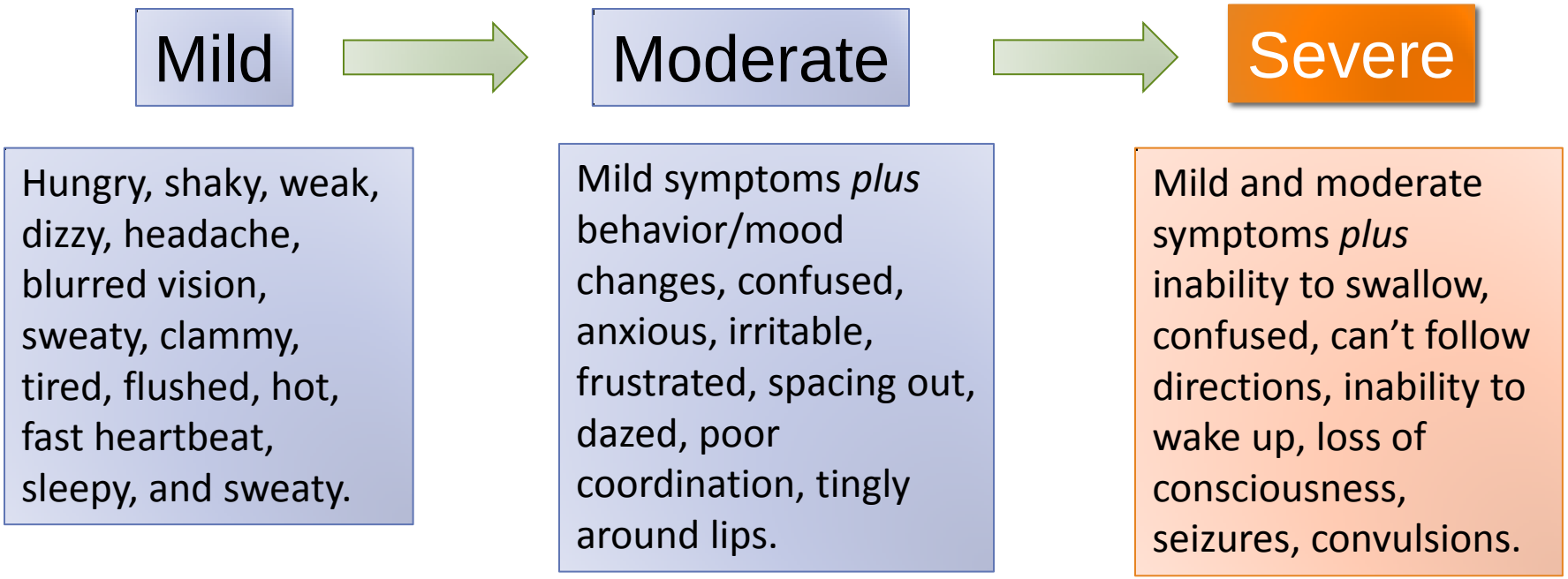
Hypoglycemia

- Hypoglycemia poses the **most immediate risk** to a student with diabetes because onset is sudden, it is not always preventable, and may progress to unconsciousness and convulsions if left untreated.

- Possible causes include:
  - Too much insulin,
  - Too little food,
  - Delayed meal or snack,
  - Extra physical activity,
  - Illness,
  - Medications, and even
  - For no apparent reason



Signs and symptoms of hypoglycemia



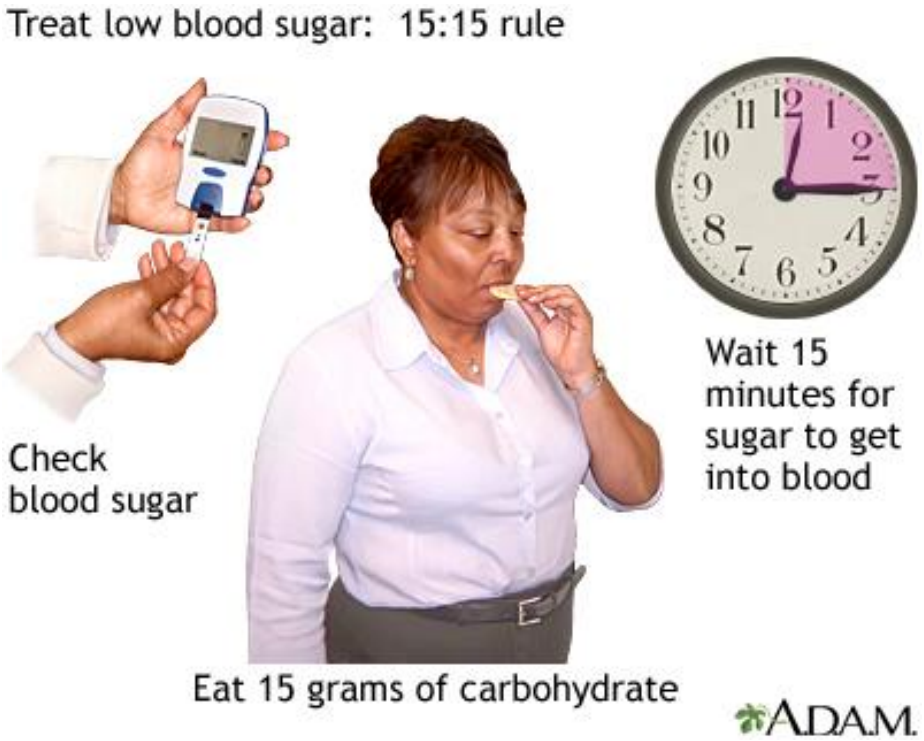
Mild and moderate hypoglycemia

- When mild or moderate symptoms occur, **immediate treatment** is required to prevent progression to severe hypoglycemia.

1. NEVER leave the student unattended.
2. Perform blood glucose monitoring.
3. Treat at onset of symptoms by having the student eat or drink fast acting carbohydrates (if able to swallow).

Treatment of mild/moderate hypoglycemia

- Follow the athlete's emergency plan.
- Types of fast acting carbohydrates include:
  - Fruit juice,
  - Glucose gel,
  - Glucose tablets,
  - Cake gel, and
  - Sports drink, 6 to 8 ounces.



Severe hypoglycemia

- This is a **medical emergency.** The athlete could be unable to swallow, unresponsive, unconsciousness, or having a seizure.
- Treat. Do not leave athlete alone.
- Call 911. Inform emergency services that you are treating a student with a hypoglycemic diabetic emergency.
- A **LIFE-SAVING** injection of Glucagon should be given. This is a hormone treatment that quickly raises blood glucose levels.
- If a athlete is on an insulin pump, disconnect the pump immediately.

Glucagon

- Know the athlete's emergency plan.
  - The coach should know where the athlete's Glucagon is kept.
  - The glucagon should be with the athlete and readily available, **not kept in their locker.**

- Storage considerations include:
  - Storing at room temperature,
  - Monitoring expiration date,
  - Marking dose on outside of box, and
  - Replacing after use.

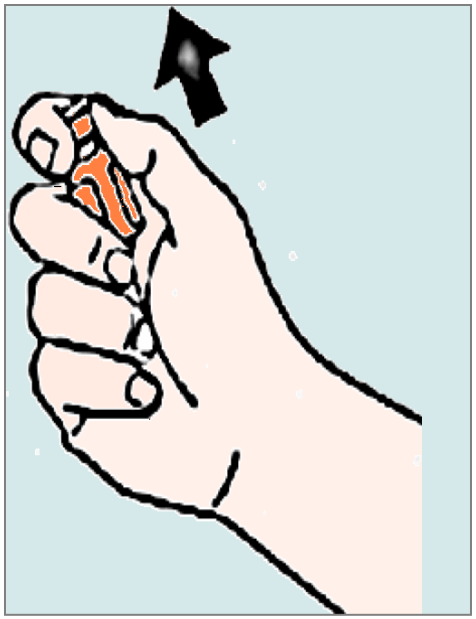
- **If given, 911 MUST be called.**

Giving Glucagon

- Position athlete safely on their side for comfort and protection from injury.
- NEVER attempt to place ANYTHING into the athlete's mouth.
- Have someone contact 911 and parent/guardian while you prepare to give the Glucagon.

PREPARATION

1. Remove cap from vial (glass bottle) of glucagon dry powder.
2. Pull needle cover off syringe.

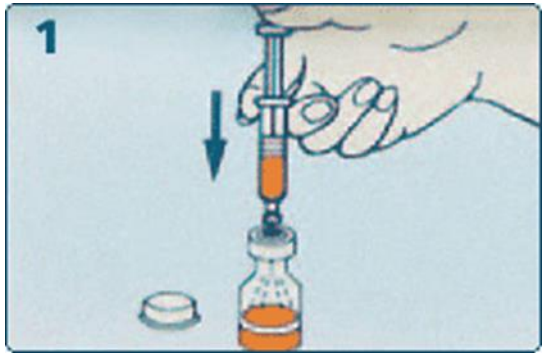


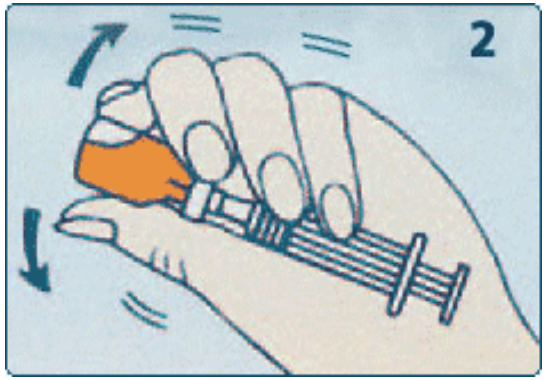
Giving Glucagon

MIXING THE SOLUTION

1. Insert needle through rubber stopper on vial of glucagon and inject entire contents of syringe into vial of powder.

2. Without removing the syringe, hold syringe and vial in one hand and gently shake until all powder is dissolved and solution is clear.

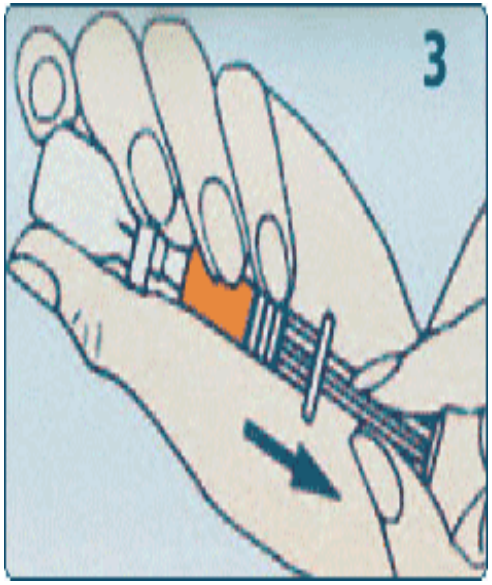




Giving Glucagon

WITHDRAWING THE SOLUTION

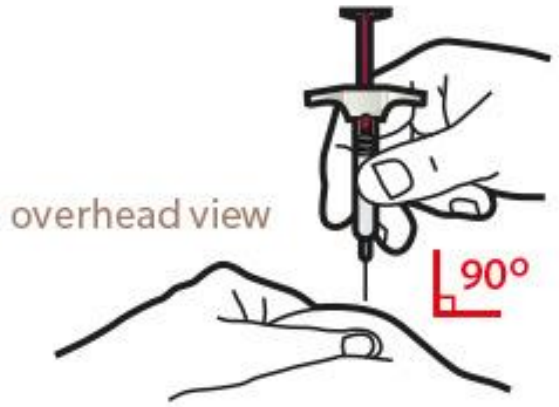
1. Inspect solution. It should be clear, not cloudy, and free of particles.
2. Slowly withdraw the amount of solution from the vial into the syringe. The amount should be specified in the athlete's Emergency Plan.
3. Check for air bubbles in syringe. Gently tap the syringe to remove any bubbles.
4. Slowly push the plunger to remove any visible air that may be seen at the top of the syringe.



Giving Glucagon

INJECTION

1. Clean injection site on buttock, upper arm, or thigh with alcohol swab, if available.
2. Insert needle at a 90-degree angle and inject Glucagon into large muscle (upper arm, thigh or upper outer area of buttock).
3. Withdraw needle, then apply slight pressure at injection site.
4. Discard syringe with needle back into the case. Do not recap needle.



Giving Glucagon

AFTER INJECTION

1. It may take 10-15 minutes for the athlete to regain consciousness.
2. Vomiting may occur. Keep the athlete positioned on side to prevent choking.
3. Remain with the athlete until Emergency Medical Services (EMS) arrives and assumes control.

Next Steps

- Remain with the athlete.
- EMS should be there to assume care.
- If the athlete is awake and can swallow, follow plan of what to type of food to give is available.
- The athlete might not remember what happened.
- The athlete might feel nauseous, or have a headache.

Consider the following

- Recovery time from a severe hypoglycemic episode varies according to the duration and level of the blood glucose prior to treatment.

- The athlete should not return to activity but should be treated and monitored for several hours since the athlete might have a severe headache, nausea, and not be feeling well.

Review

- **Mild to moderate hypoglycemia** can be treated with a quick acting source of carbohydrate (15 grams).

Review

- Signs of **severe hypoglycemia** include:
  - Unconsciousness,
  - Seizures, and
  - Inability to swallow.

- **Severe hypoglycemia** is a medical emergency requiring immediate administration of Glucagon.
- Treat, then call 911, and follow your school districts plan.

Coaches

- Remember to notify the school nurse if you have an athlete that has diabetes.
- The school nurse will review with you the athlete's diabetic emergency plan.
- It is important to remember that the athlete should check their blood sugar and have a snack prior to practice, especially if he/her has not eaten for over 2 hours .
- The athlete should have his supplies including snacks, glucagon, and meter at all times with him/her.

Resources

American Diabetes Association

http://www.diabetes.org/

H.A.N.D.S. Helping Administer to the Needs of the Student with Diabetes in School

http://www.nasn.org/ContinuingEducation/LiveContinuingEducationPrograms/HANDSDiabetesProgram

National Athletes Trainers' Association Position Statement: Management of Athlete With Type 1 Diabetes Mellitus

http://www.nata.org/sites/default/files/MgmtOfAthleteWithType1DiabetesMellitus.pdf