

A series of blue silhouettes of people in various walking poses are arranged along a curved green line that represents a hill, moving from left to right across the top of the slide.

Indiana Department of Education

Glenda Ritz, NBCT

Indiana Superintendent of Public Instruction

Training for Volunteer Health Aides *“Care of Students With Diabetes”*



You are a **KEY** player in contributing to the student's **Academic Performance** & keeping the student ***Safe at School***

Attention: Volunteer Health Aide

Participants will have various experiences and knowledge regarding the care of a student with diabetes. Whether or not you have had previous experience, the training from the school nurse and this presentation should assist you in safely caring for the student with diabetes as described in Indiana Code 20-34-5...Thank You!

Please address your questions and/or concerns to the school nurse and/or principal.

1. This information will provide your **basic training** and should be completed under the supervision of the school nurse.
2. The school nurse should also provide the following:
 - **Skills training** session
 - **Specific training** according to the individual needs of the student
 - Adequate **supervision** and **evaluation**



Training Outline

- 1. Key Definitions for This Training**
- 2. Directions**
- 3. Objectives**
- 4. What is Diabetes**
 - a) A Quick Review to Test Your Knowledge**
- 5. What is the Law**
 - a) A Quick Review to Test Your Knowledge**
- 6. The (6) Keys to Training**
 - a) A Quick Review to Test Your Knowledge**
- 7. References and Resources**

Key Definitions

Blood glucose meter: A small device that measures how much glucose is in the blood.

Carbohydrates or carbs: One of the three sources of energy in food for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. (5)

Carbohydrate (carb) counting: Adding the number of grams of carbohydrates eaten at meals or snacks. Carbohydrate information is used to calculate the appropriate amount of insulin to be given. The most accurate carbohydrate information is located on a food label.

Diabetes: Type 1 (T1D, insulin-dependent or juvenile) Type 1 diabetes (T1D) can occur at any age, but most commonly is diagnosed from infancy to the late 30s. In this type of diabetes, a person's pancreas produces little or no insulin. T1D occurs when the body's own defense system (the immune system) attacks and destroys the insulin-producing cells in the pancreas. People with T1D must inject insulin several times every day or continually infuse insulin through a pump. While its causes are not yet entirely understood, scientists believe that both genetic factors and environmental triggers are involved. Its onset has nothing to do with diet or lifestyle. There is nothing you can do to prevent T1D, and-at present-nothing you can do to get rid of it

Diabetes: Type 2 (T2D, non-insulin-dependent or adult-onset) Type 2 diabetes typically develops after age 40, but can appear earlier, and has recently begun to appear with more frequency in children. In this form of diabetes, the pancreas still produces insulin, but the body does not produce enough or is not able to use it effectively. Treatment includes diet control, exercise, self-monitoring of blood glucose and, in some cases, oral drugs or insulin. (3)

Key Definitions

Diabetes Medical Management and Treatment Plan (DMMP): A health care provider's *medical orders* that are to be followed in the school setting. A DMMP is student specific.

FERPA (Family Educational Rights and Privacy Act): Protects the personal health information of the student. With parent permission permits school staff that have a *legitimate educational interest* to be aware of a student's health condition.

Glucagon: A hormone that raises the level of glucose in the blood. Glucagon is given by injection, is used to treat severe hypoglycemia. (5)

Glucose level: The amount of glucose (sugar) in the blood.

Hyperglycemia: A high level of glucose in the blood. High blood glucose can be due to a mismatch in insulin, food, exercise or illness or pump malfunction. (5)

Hypoglycemia: A low level of glucose in the blood. Low blood glucose is most likely to occur during or after exercise, if too much insulin is present, or not enough food is consumed. (5)

Individualized Health Care Plan (IHP): A written plan *developed by the school nurse* in collaboration with the student's Diabetes Medical Management and Treatment Plan.

Key Definitions

Insulin: A hormone that is normally produced in the pancreas. Insulin converts sugar and starches into energy.

Insulin-to-Carb Ratio: Used to determine the number of units of insulin needed to cover the number of grams of carbs in the food the student plans to eat. (5)

Insulin Pen: A pen-like device used to put insulin into the body. (5)

Insulin Pump: A computerized device that is programmed to deliver small, steady doses of insulin throughout the day. Additional doses are given when needed to cover food intake and to lower high blood glucose levels. The insulin is delivered through a system of plastic tubing, or a pod or patch. (5)

Insulin Vial: A small glass bottle that contains insulin. A needle and syringe is needed to draw up the insulin from a “vial”.

Ketones: Are a product of the breakdown of fat that can appear in the blood and urine. The cells in the body need sugar for energy. The only way for sugar to get into the cells is through insulin. If the body lacks the appropriate amount of insulin to get sugar into the cells, the body starts to break down fat instead of sugar for energy. Too many ketones act like a poison to the body and if left untreated may cause harm including a severe life-threatening illness called diabetic ketoacidosis (DKA)-coma. Ketones are checked by a simple urine or blood test.

Lancet Device: A small needle, inserted in a spring loaded device, used to prick the skin and obtain a drop of blood for checking blood glucose levels. (5)

Key Definitions

Licensed Health Care Practitioner (Provider): Licensed health care practitioner“ per IC 20-34-5.

Sec. 4. As used in this chapter, "licensed health care practitioner" means an individual who:

- (1) is licensed to provide health care services; and
- (2) has prescriptive authority. (2)

Registered Nurse (RN): Holds a valid registered nurse license (IC 25-23).

School Nurse: IC 20-34-5-9 Sec. 9. As used in this chapter, "school nurse" refers to an individual who:

- (1) is employed by a school;
- (2) is licensed as a **registered nurse** under IC 25-23; and
- (3) meets the requirements set forth in 515 IAC 8-1-47. (2)

Sensitivity Factor: A number used in the correction dose formula. It is determined by the licensed health care provider and is specific to the individual. It is the amount of decrease in blood sugar expected from (1) unit of fast-acting insulin.

Target Blood Glucose: A number used in the correction dose formula. It is determined by the doctor and is specific to the individual's age. It indicates what the ideal blood sugar number is prior to a meal.

Universal Precautions: Steps taken to prevent exposure to bloodborne pathogens that may be found in blood or other body fluids. These steps may include the use of personal protective equipment such as gloves and the proper disposal of "sharps" (i.e., needles) in the proper designated container.

Directions – “*Safe At School*”

For the purpose of this IDOE training we have included videos from the American Diabetes Association’s (ADA) *Safe at School* program. We have included the links to these videos into the PowerPoint slides in order to make this an interactive learning experience.

Here’s how it will work...

Directions

1. You must be **connected to the internet** to complete this presentation.
2. This training will take approximately two hours to complete. You may stop or pause at any time throughout the presentation and return to complete when able.
3. Your school nurse will provide you with an answer sheet for the “*Quick Review to Test Your Knowledge*” sections. Please return the completed answer sheet to the school nurse at the end of the course.

Directions

1. **Reminder:** You will need **internet** access to watch the videos in this presentation

2. *Every time* you see this “Red Box”



- **Left Click Once** on the **blue hyperlink** to view the video
- **Watch Video**
- **Close “X”** video and continue with the PowerPoint presentation

Let's Practice...“Introduction” Video



Introduction: [Watch the Video](#)

- ✓ Internet Access
- ✓ Left Click “once” on the blue hyperlink
- ✓ Watch “Introduction” video
- ✓ Close “X”
- ✓ Continue with PowerPoint presentation...

Training Objectives

- 1 Understand the role of the volunteer health aide as described in Indiana Code 20-34-5: Care of Students With Diabetes
- 2 Know how to apply the orders of a licensed health care provider
- 3 Recognize and treat the symptoms of hypoglycemia (low blood sugar) and hyperglycemia (high blood sugar)
- 4 Know how to test and record glucose and ketone levels
- 5 Know how to properly administer glucagon, insulin, or other emergency treatments
- 6 Recognize complications that require emergency medical assistance
- 7 Understand:
 - a. recommended schedules, meals, and snacks.
 - b. the effects of physical activity on blood glucose
 - c. the proper action to take if a schedule is disrupted

What is Diabetes?

Insulin is a hormone your body needs to use sugar or “glucose”
Your body uses sugar to give you energy

Type 1

- Insulin Dependent Diabetes Mellitus
- The body can no longer make insulin
- Nothing could have been done to prevent this from happening
- *Occurs most often in children & people <40 years of age*
- *People with Type 1 take insulin shots every day to live*
- Treatment includes: *Insulin injections, blood sugar testing, meal/snack plan, exercise*

Type 2

- The body makes some insulin, but it may not make enough or the insulin may not be working very well in the body
- Occurs most often in adults >40 years of age however is being seen more often in school-aged children (increased childhood obesity)
- Usually takes pills vs. insulin shots (Type 2 only: May be able to change from insulin shots to pills if the plan below is followed)
- Treatment includes: Exercise, losing weight, eating healthy

Regular Exercise



Blood Sugar Testing



Type 1 Diabetes Treatment Plan



Insulin Injections

Meal/Snack Plan



A Quick Review to Test Your Knowledge

Diabetes Basics

- 1. A student with Type 1 diabetes must balance blood sugar testing, insulin, meals and snacks, and exercise every day of their life:**
 - a) True
 - b) False

- 2. Nothing could have been done to prevent Type 1 diabetes from developing in their body:**
 - a) True
 - b) False



What is The Law?

Care of Students With Diabetes
Indiana Code 20-34-5 (Sections 1-18)

“Volunteer Health Aide” (Sec.11)

Definition: Volunteer Health Aide (VHA)

School Employee Who:

1. Is not licensed to provide health care services under Indiana Code 25-23 (licensed as a registered nurse)
2. Volunteers to act in the capacity of a volunteer health aide
3. Successfully completes training described in Section 15

Requirements of Plan (Sec.12)

Diabetes Management & Treatment Plan (Medical Orders)

- Must be developed for use during school hours or at a school related activity
- Developed and signed by a parent/guardian & a licensed health care practitioner
- Identifies medical orders and evaluates student's ability to manage and understand care
- Submitted to the School Nurse (RN)

Development of Plan (Sec.13)

Individualized Health Plan (Student Specific Orders and Tasks)

(e.g., routine, after-school activities, emergency evacuations)

- Must be developed by the school nurse
- Done in collaboration with the health care practitioner, parent/guardian, principal, & teacher(s)
- Must include the components of the diabetes management and treatment plan

Use of Volunteer Health Aides (Sec.14)

- A volunteer health aide (VHA) is *assigned by the principal after consultation with school nurse*
- While providing health care services, the VHA serves under the supervision of the principal & school nurse
- VHA must have access to school nurse, in person or by phone
- Employee cannot be disciplined for refusing to serve as a VHA
- VHA has a choice of performing only those functions they feel comfortable and trained to do

Diabetes Training Program (Sec.15)

The training for the VHA *must* include

- **Implementing** the **orders** of the licensed health care provider
- **Recognizing and treating** the symptoms of
Hypoglycemia (**low** blood sugar)
Hyperglycemia (**high** blood sugar)
- **Performing tests** to check glucose and ketone levels
- **Properly administering** glucagon, insulin or other emergency treatments
(continued)

Diabetes Training Program (Sec.15)

- **Recognizing complications** that require emergency medical care (i.e., hypoglycemia-low blood sugar)
- **Understanding:**
 - Recommended **Schedules and Food Intake** for Meals and Snacks
 - Effect of **Physical Activity** on blood glucose level
 - Proper Action if **Schedule is Disrupted**

Training for the VHA must be provided by a health care professional with expertise in the care of individuals with diabetes or by a school nurse

Tasks: School Nurse & VHA (Sec.16)

- Preferred that School Nurse perform tasks
- When necessary a VHA may perform the tasks only if according to the students Individualized Health Plan
- In compliance with the diabetes training
- Parent/guardian signs an agreement to authorize VHA to assist the student and states that VHA is not liable for civil damages

Self-Managed Care (Sec. 17)

Self-Managed Care

A Diabetes Management and Treatment Plan & Individual Health Plan may allow for a student with diabetes to *self-manage* their care.

- Student may possess, carry supplies & treat at anytime & anywhere
- An emergency plan (i.e., low blood sugar causing confusion or unconsciousness) must be included in the Individualized Health Plan
- The school nurse will develop the emergency plan and appropriately discuss with volunteer health aide

Information Sheet (Sec. 18)

Transportation & Supervisor of Off-Campus Activities

Must be given an information sheet with the following information:

- Identifies the student with diabetes
- Describes signs and symptoms of an emergency and the appropriate response
- Telephone number of an emergency contact

This information sheet should be developed by the school nurse and appropriately discussed with the school personnel who is responsible for the student (i.e., coach, bus driver, teacher on a field trip).

A Quick Review to Test Your Knowledge

The Law

- 1. There is a law that schools must follow to keep students with diabetes safe in the school setting:**
 - a) True
 - b) False
- 2. It is the responsibility of the Volunteer Health Aide (VHA) to *develop* the Individual Health Plan for caring for the student with diabetes while at school or a school-related activity:**
 - a) True
 - b) False
- 3. A VHA is assigned by:**
 - a) The principal after consultation with the school nurse
 - b) Human Resources and the school nurse
 - c) Request of a parent
 - d) Student's Teacher

A Quick Review to Test Your Knowledge The Law

- 4. Training for a VHA must be provided by a health care professional with expertise in the care of individuals with diabetes or by a school nurse:
a) True
b) False**

- 5. A parent/guardian must sign an agreement to authorize the VHA to assist their child and states that VHA is not liable for civil damages:
a) True
b) False**



The (6) Keys to Training

I.C. 20-34-5-15

1. Implementing the orders
2. Recognizing and treating the symptoms of hypoglycemia and hyperglycemia
3. Performing tests to check glucose and ketone levels and record
4. Properly administering glucagon, insulin, or other emergency treatments
5. Recognizing complications that require emergency medical assistance
6. Understanding:
 - A. Recommended schedules and food intake for meals & snacks
 - B. The effects of physical activity and stress on blood glucose levels
 - C. Action to take if a student's schedule is disrupted



Key #1

Implementing Orders

Implementing the Orders: DMMP



Diabetes Medical Management Plan

Orders (Plan)	Contents	Author
Diabetes Medical Management and Treatment Plan (DMMP)	<ul style="list-style-type: none">▪ <i>Student-specific</i> plan of care▪ Contact Information▪ Treatments for school day<ul style="list-style-type: none">• When to check a routine blood sugar• Treatment for a routine blood sugar• Insulin calculations for meals and snacks• Treatment for a non- routine blood sugar• Emergency orders• Ability to self-manage	Student's Health Care Provider

Implementing the Orders: IHP

Plan	Contents	Author
Individual Health Plan (IHP)	<ul style="list-style-type: none">▪ Based on the medical orders-DMMP▪ Includes <i>student-specific</i> information▪ Includes <i>specific school environment</i> information▪ IHP may include:<ul style="list-style-type: none">• Plan to maintain blood sugar in target range: monitoring blood sugar, giving insulin, treating hypoglycemia & hyperglycemia, meal/snack plan, physical activity, & medical emergencies• Need for liberal restroom and water breaks• Medical equipment and other supplies• School-related activity (i.e., extra-curricular activities [athletics, band], party, field trip, 2-hour delay).• Communication guidelines school nurse/parent• Emergency preparedness (i.e., lock-down, fire).	School Nurse (RN)

Implementing the Orders: DMMP & IHP

Diabetes Medical Management and Treatment Plan
(DMMP)



Signed by the licensed health care provider and parent



Given to the School Nurse



School Nurse Writes the Individual Health Plan (IHP)
based on the DMMP



School Staff Must Follow the DMMP & IHP

A Quick Review to Test Your Knowledge

Key 1: Implementing Orders

- 1. A *Diabetes Medical Management Plan (DMMP)* are the medical orders from the health care providers office:**
 - a) True
 - b) False
- 2. An *Individual Health Plan (IHP)* is written by the school nurse in collaboration with the DMMP. The IHP should individualize the student's needs while at school or after-school related activities:**
 - a) True
 - b) False
- 3. A *Diabetes Medical Management Plan* will indicate how to calculate how much insulin to give at a meal or snack:**
 - a) True
 - b) False

A Quick Review to Test Your Knowledge

Key 1: Implementing Orders

4. **An Individualized Health Plan should describe what to do if:**
 - a) There is a 2-hr delay
 - b) The class is going on a field trip
 - c) There is a classroom party including food and games
 - d) All of the above

5. **Both the Diabetes Medical Management Plan (DMMP) *and* Individual Health Plan (IHP) *must* be followed by school personnel:**
 - a) True
 - b) False



Key #2

**Recognizing and treating
the symptoms of
hypoglycemia &
hyperglycemia**

Hypoglycemia

Hypoglycemia- means **low**
lower than target range as indicated on the DMMP
(generally below 70 or 80)

Sudden Onset

Needs Immediate Attention: Never Leave Unattended

TOO MUCH ACTIVITY

Causes

TOO MUCH INSULIN

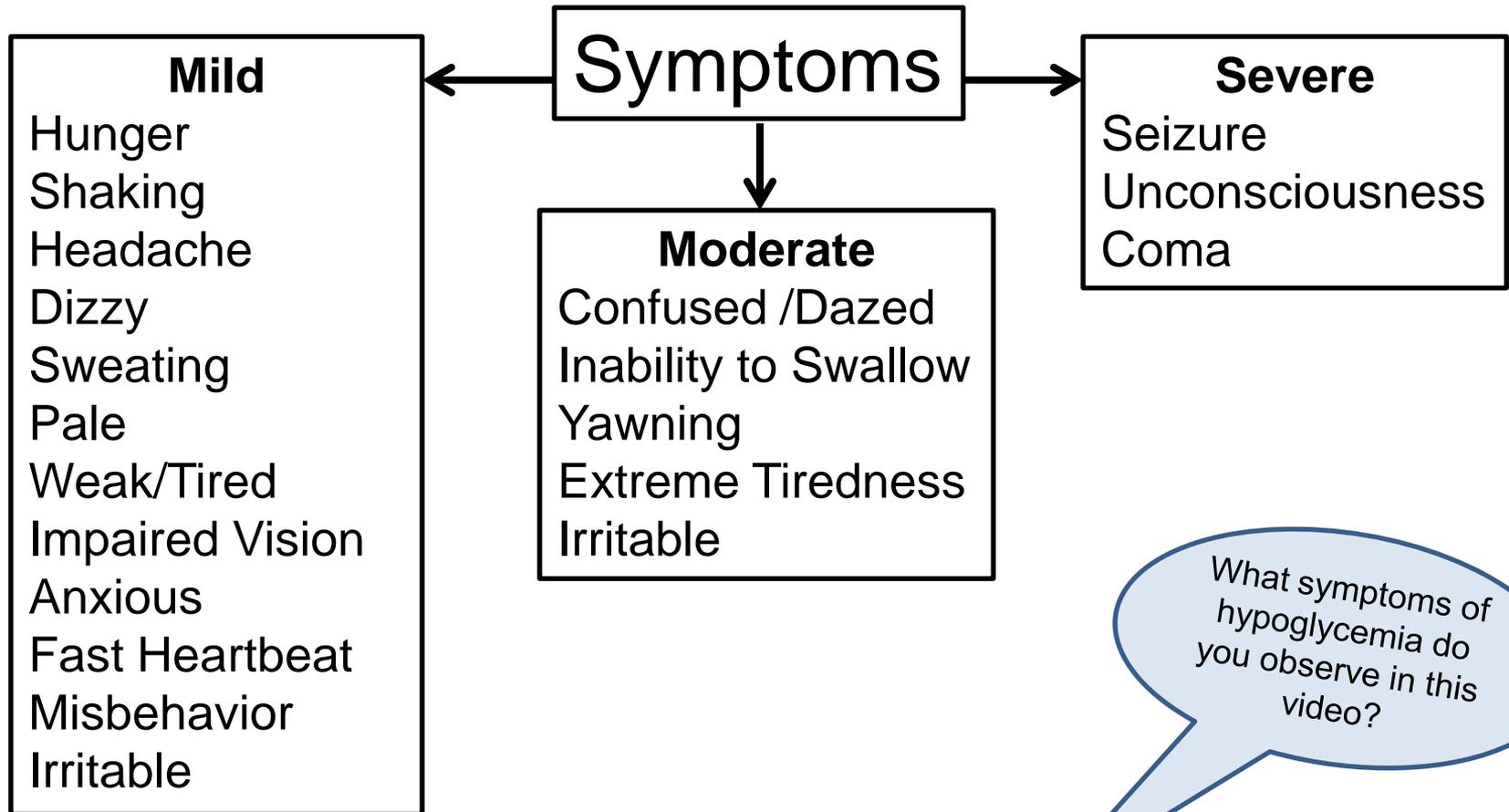
MISSED MEAL
or SNACK

STRESS in some children

LATE MEAL
or SNACK

UNDERTREATMENT
for Hypoglycemia

Recognizing Hypoglycemia



What symptoms of hypoglycemia do you observe in this video?

Treating Hypoglycemia

Always Follow

Diabetes Medical Management & Treatment Plan (DMMP)
& Individualized Health Plan (IHP)

If possible **CHECK BLOOD SUGAR**

Treat with **FOOD** according to **DMMP** and **IHP**

15 Grams of Carbohydrate (a fast-acting sugar)

4 oz of Fruit Juice

4 oz **Regular** Soda

Skittles (15)

4 Glucose Tabs

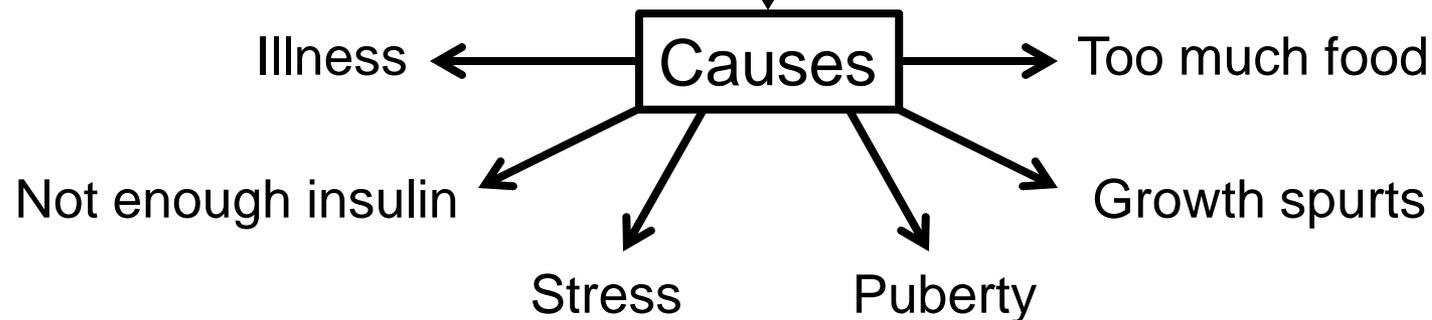
RECHECK BLOOD SUGAR in 15 minutes DO NOT Leave Student Unattended

Hyperglycemia

HYPERglycemia-high blood sugar above target range as indicated on the DMMP (usually above 250)

Generally develops over a longer period of time

May cause long-term consequences if consistently high



Recognizing Hyperglycemia

Symptoms

Mild to Moderate

Increased Thirst
Increased Urination
Increased Hunger
Irritable
Tired
Headache
Nausea & Vomiting
Blurry Vision
Stomachache

Severe

Continued Vomiting
Breath-Fruity Smell
Sleepiness
Unconsciousness
Coma

What symptoms of Hyperglycemia do you observe in this video?

Treating Hyperglycemia

Always Follow

Diabetes Medical Management & Treatment Plan (DMMP)
& Individualized Health Plan (IHP)



CHECK BLOOD SUGAR @ onset of symptoms



Check Ketones



Treat according to DMMP & IHP



Give insulin as directed
on DMMP



Unrestricted
restroom
breaks



Push water or
sugar-free
drinks



PE or other
vigorous exercise
may be restricted

Notify: School Nurse, Health Care Team, Parent per DMMP & IHP

A Quick Review to Test Your Knowledge

Key 2: Hypoglycemia and Hyperglycemia

- 1. Symptoms of *low* blood sugar may include all or some of the following:**
 - a) Shaky, irritable, sweating, impaired vision, weakness, headache
 - b) Thirsty, increased need to urinate, headache
- 2. The first treatment for signs of a low blood sugar should be to check the blood sugar reading:**
 - a) True
 - b) False
- 3. Of the foods listed below, the treatment for a low blood sugar would be (choose one):**
 - a) ½ cup orange juice
 - b) 2 slices of cheese
 - c) 6 saltine crackers
 - d) sugar-free jello

A Quick Review to Test Your Knowledge

Key 2: Hypoglycemia and Hyperglycemia

4. **Signs of *high* blood sugar may include the following:**
 - a) nausea and vomiting
 - b) increased thirst and urination
 - c) stomachache
 - d) all of the above

5. **The *first* treatment for signs of a high blood sugar would be to check the DMMP. The next likely step would be to check a blood sugar *and*:**
 - a) Ketones
 - b) Call a Parent
 - c) Have the student rest for 15 min and recheck the blood sugar
 - d) Notify the student's PE teacher that he/she will not be participating today



Key #3

**Performing tests to check
glucose & ketone levels,
and recording the results**

Test to Check Glucose Level

When to Check a Blood Sugar (Glucose) Level

Always follow Diabetes Medical Management Plan (**DMMP**) & Individualized Health Plan (**IHP**)

Check **Before Meals** & sometimes snack

If blood sugar (BS) is low before lunch-treat per DMMP (hypoglycemia) and **get in target range before sending to lunch.**

Anytime student has **symptoms** of low or high blood sugar

Before an Activity (i.e., strenuous or cautious- swimming/driving)



[Blood Glucose Monitoring](#)

Please view video.
The glucose test is
simple to do!

Tips: Glucose Meters and Lancets

1. The school nurse will discuss with you the procedure for using the glucose meter, lancet device and where to record the blood sugar results.
2. Do not share a student's equipment or supplies with other students with diabetes.
3. The correct date and time should be in the meter.
4. Test strips are specific to the student's glucose meter.
5. *New* test strips have a procedure to follow prior to use.
6. Call the school nurse/parent if a glucose meter or test strips have been damaged such as wet/damp, extreme temperature, dropped (meter). Keep in case to protect.
7. Extra battery & user guide should be kept with supplies.
8. Follow Universal Precautions, use of Personal Protective Equipment, and dispose of sharps (needles) as taught by school nurse.

Performing Test to Check Ketone Level

- 1. What are ketones:** Ketones are caused by a lack of insulin in the body and can occur during illness, extreme stress, or when insulin doses are missed.
- 2. Why test for ketones:** Ketones are an acid and if left untreated may be harmful to the body, or cause a serious life-threatening illness called diabetic ketoacidosis (DKA).
- 3. Can you control ketones:** Yes, by keeping glucose levels in the target range, but there are uncontrollable situations in which high blood sugar may be difficult to control (i.e., illness) causing ketones.
- 4. What's the key to prevent harm from ketones:** **EARLY DETECTION and TREATMENT** according to the DMMP and IHP.

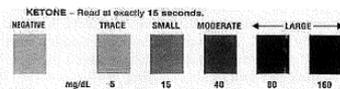
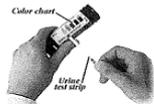


Ketones

Please view video.
Testing for ketones
is simple to learn!

Tips: Ketone Testing

1. The school nurse will discuss with you the procedure for testing ketones, recording results, and the treatment as defined in the student's DMMP and IHP.
2. The DMMP and IHP will identify when and to whom positive ketones should be reported.
3. Each student has their own personal ketone testing strips (urine [most common] or blood testing strips).
4. Follow Universal Precautions, use Personal Protective Equipment, and dispose of sharps (needles) as instructed by school nurse.



Sample Procedure for Testing Urine Ketones

- Have the student collect a urine sample
- Dip test strip in urine
- Wait the amount of time as indicated in directions
- Compare color on strip-to color chart on bottle-record
- Refer to student's DMMP and IHP for further action

A Quick Review to Test Your Knowledge

Key 3: Performing Tests to Check Glucose and Ketone Levels

- 1. A blood sugar is typically tested when:**
 - a) Before all meals
 - b) After all meals
- 2. Ketones most often indicate:**
 - a) High blood sugar
 - b) Low blood sugar
- 3. A student comes to the office on their way to lunch to check their blood sugar. The blood sugar reading is “62”(low). What should you do next:**
 - a) Give the student a fast-acting sugar and send to lunch immediately
 - b) Check the DMMP and treat as directed. Do not send the student to lunch until their blood sugar is in the target range.
 - c) Give the student written permission to go to the front of the lunch line
 - d) Call a parent

A Quick Review to Test Your Knowledge

Key 3: Performing Tests to Check Glucose and Ketone Levels

4. A high school student who drives to school has a low blood sugar of “68” at 2:15 PM and school is dismissed at 3:05 PM. The VHA follows the Diabetes Medical Management Plan, and the student returns to class at 2:30 PM with a blood sugar of 82. What other information *may* his Individual Health Plan include:
- a) Call a parent to get permission for the student to go home early
 - b) Call his coach to tell him the student will not be at practice
 - c) Recheck the student’s blood sugar at 3:00 PM
 - d) Tell the student to have a friend drive his car home for him
5. Universal Precautions are steps taken to prevent exposure to bloodborne pathogens; may include the wearing of gloves and proper disposal of sharps such as syringes and lancets:
- a) True
 - b) False



Key #4

Properly administering glucagon, insulin, or other emergency treatments as prescribed and recording the results

Glucagon

Glucagon

Only used for *severe* hypoglycemia (low blood sugar) unless verbal order given to RN by health care provider

Unconsciousness

Seizure

Disorientation

Unable to swallow

Always follow Diabetes Medical Management Plan (DMMP) & Individualized Health Plan (IHP)

Glucagon

If Student Unconscious

Do not give anything by mouth

Follow DMMP and IHP

Administer glucagon if available-open kit

- 1.Mix fluid in syringe with powder in vial
- 2.Shake gently until mixed
- 3.Draw mixed fluid into syringe (dose per DMMP)
- 4.Inject into upper thigh or arm.



Turn on side - student may vomit - keep airway clear

CALL 911 – School Nurse – Notify Parent

Insulin

A Student with Type 1 Diabetes Requires Insulin
It May be Delivered (3) Different Ways



Insulin Syringe and Vial



Insulin Pen



Insulin Pump

Insulin Orders and Administration

**Always follow the student's
Diabetes Medical Management Plan (DMMP) &
Individual Health Plan (IHP)**

Every time before giving insulin to a student **recheck**

- ✓ **Right Student**
- ✓ **Right Insulin**
- ✓ **Right Dose**
- ✓ **Right Time**

 **Only the licensed health care provider may make changes to an insulin dose, and only a school nurse (RN) may take a phone order. Notify RN of written (fax, Dr. note) changes to insulin orders.**

Check the Student's DMMP & Watch the Correct Video

Insulin: Syringe and Vial



[Insulin by Syringe and Vial](#)

Insulin: Insulin by Pen



[Insulin by Pen](#)

Insulin: Insulin by Pump



[Insulin by Pump](#)

Insulin by Syringe & Vial



The type of insulin will be identified in the student's DMMP and whether or not the student measures to the whole or half unit on the syringe.

The School Nurse will show you the procedure for drawing up the student's insulin.

Insulin is measured in “**units**”

Only **insulin syringes** are used to measure and give insulin

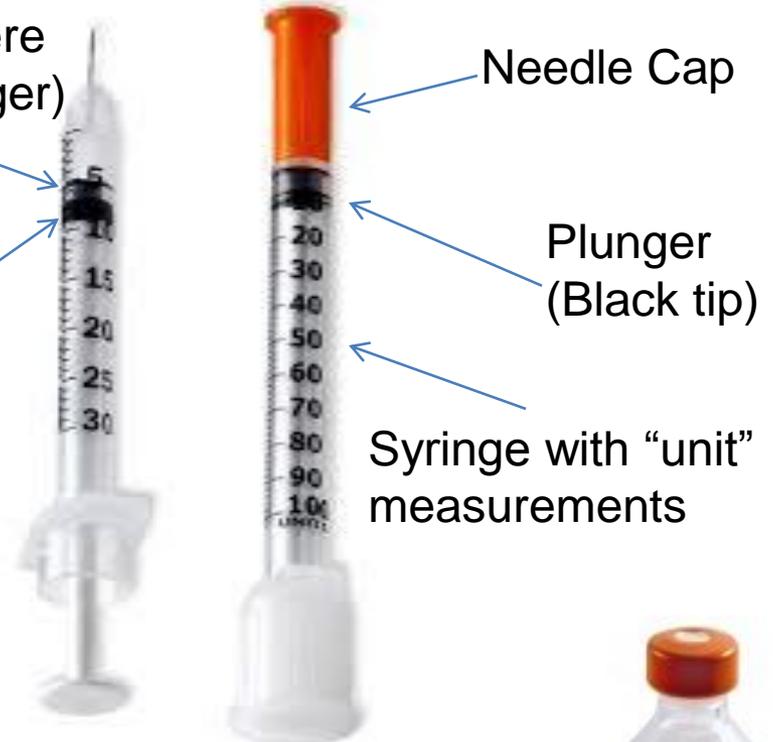
Measure Here
(top of plunger)

Not Here

Needle Cap

Plunger
(Black tip)

Syringe with “unit”
measurements



Insulin Storage: Vial (check exp. date)

Unopened-store in refrigerator

Opened-refrigerator or at room temperature
and discard after 30 days



Imaginary Student Example: Syringe/Insulin Vial-Measuring a Dose

Syringes come in whole or half-unit scales

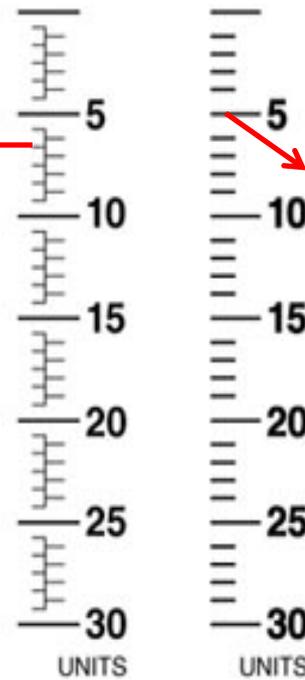
Insulin syringe scales:

Left: half-unit scale

Right: whole unit scale



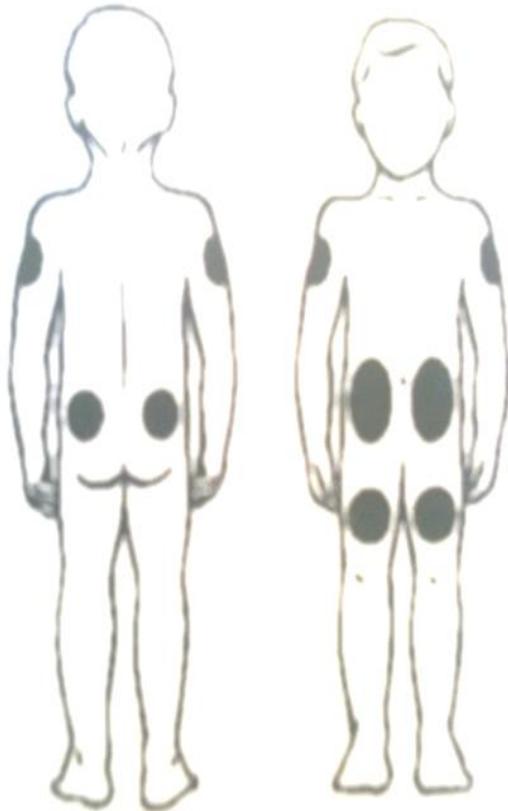
6.5 units



5 units

Injection Sites

Rotate “shots” to
different areas



Drawing Up Insulin: Syringe & Vial

- ✓ Right Student
- ✓ Right Insulin
- ✓ Right Dose
- ✓ Right Time

**Follow Diabetes Medical
Management & Treatment Plan**

1. Wash hands & put on gloves if indicated.
2. Collect insulin vial, syringe & alcohol swab.
3. If cold-roll vial between hands.
4. Wipe top of insulin bottle with alcohol swab.
5. Inject air into the bottle of insulin.
6. Leave the needle in the bottle & turn upside down.
7. Pull up and down on the plunger to coat the syringe with insulin. Set plunger to correct dose and make sure there are no air bubbles (**confirm the dose**).
8. Remove needle from vial of insulin. Do not touch anything with the needle.
9. Select the site for injection and wipe with alcohol.
10. Pinch up the skin-Insert the needle all the way in-Push the plunger all the way in-Let go of your pinch *before* pulling out the needle (prevents insulin from leaking back out).
11. Discard syringe and needle in sharps container.
12. Record blood sugar results and insulin dose and time.

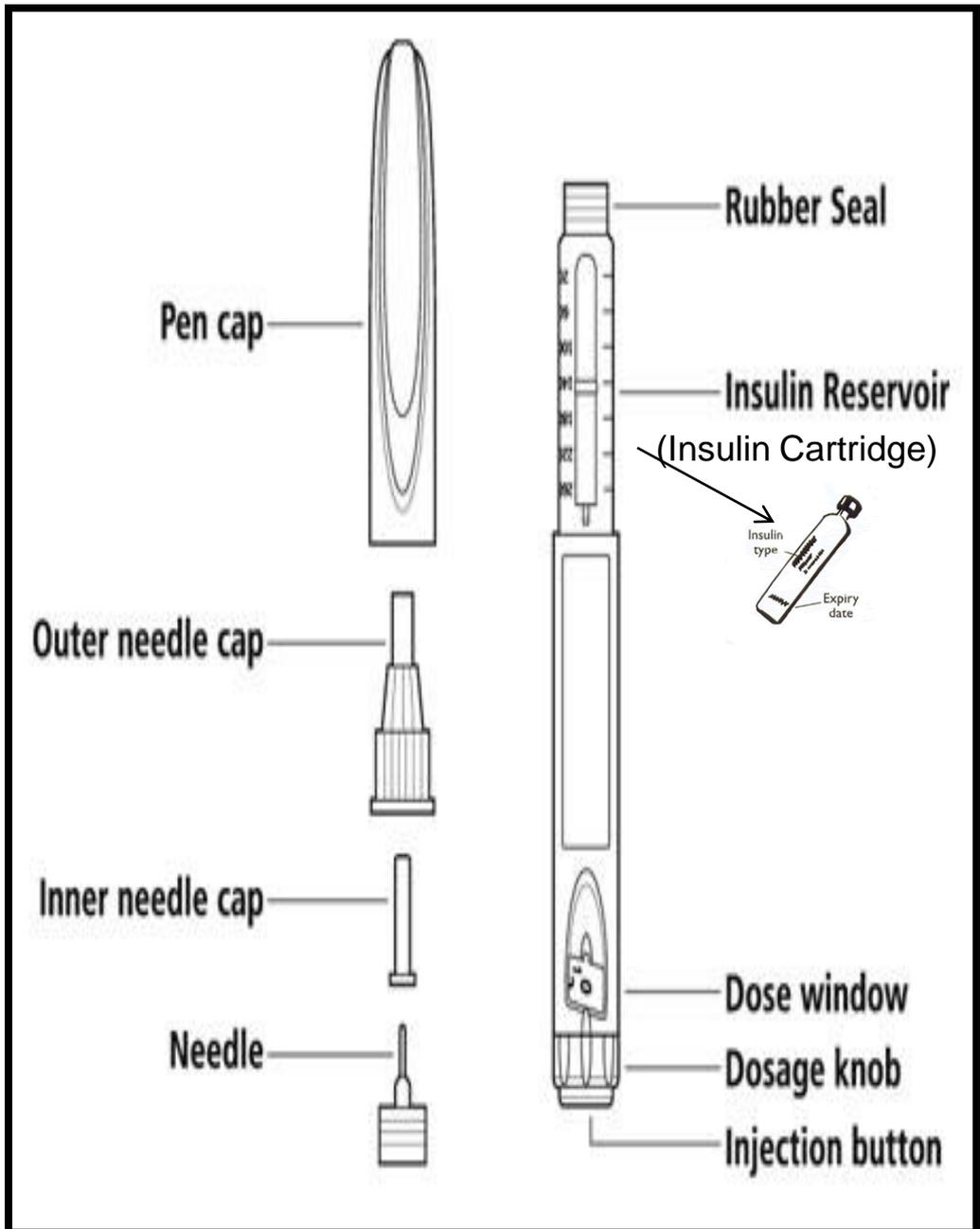
Insulin by Pen



There are different types of insulin pens with their own type of insulin reservoir (cartridge).

The type of insulin will be identified in the student's DMMP.

The School Nurse will show you the procedure for using the insulin pen.



Imaginary Student Example: Insulin Pen: Measuring a Dose



3 units

Place a new needle on the pen every time it is used-this will help prevent bacteria from entering the insulin cartridge.

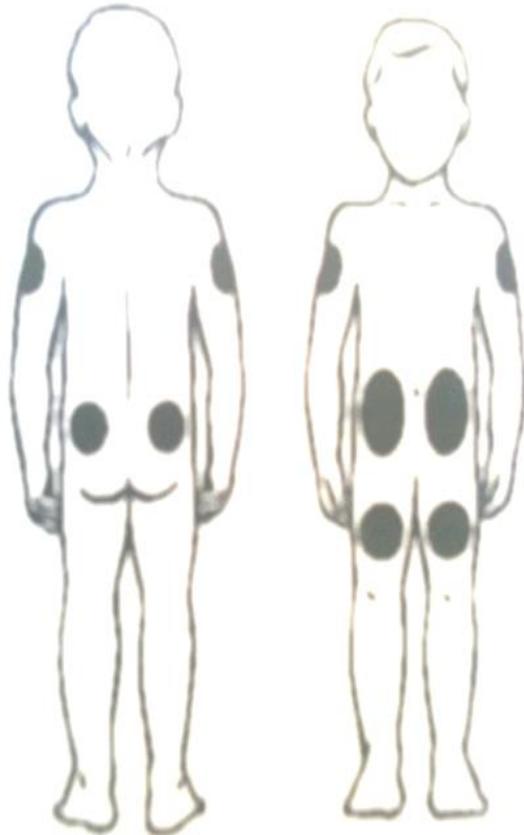
The pen must be “primed” for an “air dose” prior to each use. The school nurse will discuss this with you.

Insulin Storage: Pen/Cartridge (contains multiple doses of insulin-300 units)
check exp. date
Unopened-store in refrigerator
Opened-refrigerator or at room temperature and discard after 30 days



Injection Sites

Rotate “shots” to
different areas



Drawing Up Insulin: by Pen

- ✓ Right Student
- ✓ Right Insulin
- ✓ Right Dose
- ✓ Right Time

Follow Diabetes Medical
Management & Treatment Plan

1. Wash hands & put on gloves.
2. Collect insulin pen & alcohol swab.
3. Take lid off insulin pen.
4. Wipe top off with alcohol swab.
5. Put needle on (make sure it is on tight) - take both caps off and place big clear cap *upright* on counter.
6. Dial an air dose great enough to see a few drops of insulin (usually 1-2 units-unless cartridge is new).
7. Hold pen upright and push out air until you see a few drops of insulin.
8. Dial in prescribed dose to be given (**confirm the dose**).
9. Select the site for injection and wipe with alcohol.
10. Insert the needle all the way in. Push the plunger (top of pen) in all the way (make sure the dial returns to “0”).
11. Wait 5-10 seconds. Take thumb off plunger. Pull the needle out. This will prevent insulin from leaking back out.
12. *To prevent an accidental stick:* Without touching the big clear needle cap on counter-hold the pen & insert needle into cap. Then carefully unscrew needle tip and discard in sharps container.
13. Record blood sugar level and the insulin dose & time given.

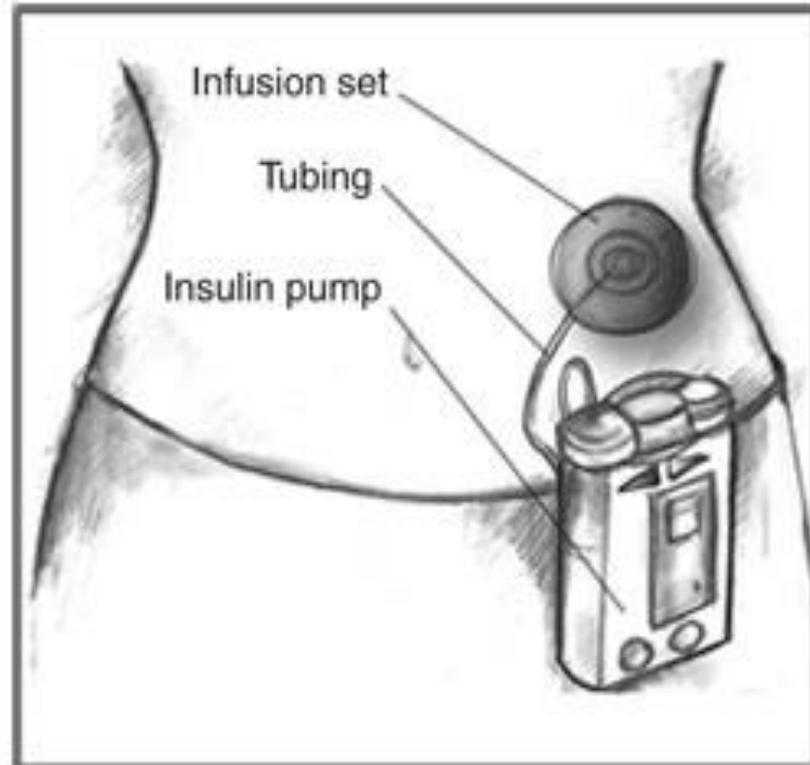
Adapted from Riley Hospital for Children: Outpatient Diabetes

Insulin by Pump

There are many types of insulin pumps. Most have tubing connected to the student's body and some do not. The type of insulin pump will be identified in the student's DMMP.

The School Nurse will show you the procedure for using the student's pump.

There is a 1-800 telephone number on the back of the pump for customer support services.



Infusion Sites

Rotate “infusion sites” to different areas



- There are many different types of infusion sets.
- Ideally the reservoir, infusion set and site should be changed every 2-3 days. Generally this is done at home but may be done at school according to the IHP.

Insulin by Pump

- ✓ Right Student
- ✓ Right Insulin
- ✓ Right Dose
- ✓ Right Time

Follow Diabetes Medical Management & Treatment Plan

1. Insulin pumps deliver “fast-acting” insulin in 2 ways
Basal Insulin: Provides a low dose of insulin 24 hours a day.
Bolus Insulin: Given with every meal according to the amount of carbohydrate eaten and premeal blood sugar reading. May also “bolus” for extra doses of insulin when blood sugar is high. The pump may calculate the food dose and corrective dose automatically, but buttons need to be pressed to deliver insulin.
2. A student *may* self-manage, need supervision, or VHA will have full responsibility of operating insulin pump. Follow the DMMP and IHP.
3. If a student self-manages a safety plan must be in place in case of emergency.
4. Refer to IHP for the recording of blood sugar levels and bolus doses.

Tips: Insulin by Pump

Infusion Sets

If the infusion set needs to be changed at school-see Individual Health Plan. After an infusion site is changed, the blood glucose should be checked in 2 hours to ensure proper function.

If there is a pump problem & you are unable to resolve-call the school nurse right away. Blood sugars can rise quickly.

Troubleshooting Pumps

*Alarm or Hyperglycemia (high blood sugar levels)

- Check connection site on body
 - Is the skin red or wet
 - Is the set attached
- Check Connections
- Leak or odor
- Is there a “kink” in the tubing
- Is there air bubbles in tubing
- Insulin in reservoir (cartridge)
- What alarms or alerts are present

Insulin Dose for Meals

Insulin dose is determined by the pre-meal blood sugar reading and the carbohydrates eaten at a meal.

Pre-meal blood sugar reading is used to calculate the:
CORRECTION DOSE

Carbohydrates eaten at meal are used to calculate the:
FOOD DOSE

Steps to Meal Time Insulin Dose

STEP 1

Calculate the insulin needed to treat the pre-meal blood sugar reading.
Formula: In Diabetes Medical Management Plan and it's called:

CORRECTION DOSE

STEP 2

Calculate the insulin needed to treat the "Total Carbohydrates" at meal.
Formula: In Diabetes Medical Management Plan and it's called:

FOOD DOSE

STEP 3

ADD the **Correction Dose** and **Food Dose** together

STEP 4

Give insulin before or after meal as indicated in the Diabetes Medical Management and Treatment Plan

STEP 1: CORRECTION DOSE

Calculating Correction Dose

Formula: In Diabetes Medical Management and Treatment Plan

Formula

Pre-meal blood sugar (BS) – Target blood glucose level ÷ Sensitivity Factor

Equals the Correction Dose

Amount of insulin to be given to bring the blood sugar back to target range

Correction Dose: EXAMPLE

Imaginary Student

Blood Sugar (BS) before lunch: **220**

Correction Dose Formula in Diabetes Medical Management Plan is:

Formula: **BS - 120 ÷ 50 = _____ units of insulin**

Calculation: $220 - 120 = 100 \div 50 = 2$ units of insulin



Correction dose is only calculated if pre-meal blood sugar is *greater than target number* .
For example: If the above imaginary student's BS before lunch was 118 (target is 120)
NO correction dose would be calculated. Therefore, only total carbohydrates consumed
at lunch would be calculated for the amount of insulin to be given (food dose).

STEP 2: FOOD DOSE

(2) Methods of Counting Carbs

Carbohydrate Counting

With this meal plan the student adds the total amount of carbohydrates (carbs) eaten per meal or snack.

Insulin is dosed according to the total amount of carbohydrates counted .

Insulin – to – Carbohydrate Ratio

The Diabetes Medical Management and Treatment Plan (DMMP) indicates the formula to be used to calculate the insulin dose according to the amount of carbs consumed at a meal or snack.

Carbohydrate Exchange

This is an older way of calculating the number of carbohydrates (carbs) eaten.

Insulin is dosed according to the total amount of carbohydrate exchanges.

15 grams of carbs = 1 carb exchange

The Diabetes Medical Management and Treatment Plan (DMMP) indicates the amount of “carb exchanges” with the correct insulin dose needed for each meal or snack.

Reading a Food Label

The nutrition facts panel on the food label is the best source of carbohydrate information. (6) Carbohydrates are an essential food group for proper growth and development.

It's important to note two lines on a food label:

1. **Serving Size**
2. **Total Carbohydrate**

This information will indicate how many **grams of carbohydrate** are in **one serving** of this food item.

Example:

Nutrition Facts	
Serving Size 1 cup (225g)	
Serving Per Container 2	
Amount Per Serving	
Calories 260	Calories from Fat 120
% Daily Value*	
Total Fat 13g	20%
Saturated Fat 5g	25%
Trans Fat 2g	
Cholesterol 30mg	10%
Sodium 660mg	28%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%
Calcium 15%	Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

**Serving size
1 cup
&
Total
Carbohydrate
31 grams**

The school nurse & school dietary staff may assist you in obtaining the correct serving size and total carbohydrates in a school food item.

Parents should provide carbohydrate information for food brought from home.

Food Labels: Servings per Container

Serving Size is 1 Cup
Servings per Container
is “2”

If the student had **the whole box (2 Cups)** of this food item the Total Carbohydrate count would be **62 grams**



Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
Amount Per Serving	
Calories 250 Calories from Fat 110	
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	300mg
	2,400mg
	2,400mg
	300g
	375g
	25g
	30g

Pay Attention to the Serving Size
&
Servings Per Container

Carbohydrate Counting

Which Foods are High in Carbohydrates (Higher than 5 grams/average serving size)

- Apple
- French Fries
- 2% milk
- Carrot Sticks
- Beef Jerky
- Yogurt
- Corn Chips
- Banana
- Macaroni and Cheese
- Green Beans
- Grilled Chicken Patty
- Peas
- Sugar-Free Jell-O
- Ketchup
- Broccoli with Cheese Sauce

Carbohydrate Counting

Foods Marked in Red are Greater than 5 Grams of Carbohydrate

Unless noted on DMMP or IHP- Student's food choices are not restricted-count all carbohydrates consumed. As with all students, a balanced diet should be encouraged.

- Apple
- French Fries
- 2% milk
- Carrot Sticks
- Beef Jerky
- Yogurt
- Corn Chips
- Banana
- Macaroni and Cheese
- Green Beans
- Grilled Chicken Patty
- Peas
- Sugar-Free Jell-O
- Ketchup
- Broccoli with Cheese Sauce

INTERESTING FACT: Protein (meat, cheese, eggs, and fat group foods do not affect blood sugar and therefore do NOT require insulin when eaten.

FOOD DOSE

Carbohydrate Counting

The amount of insulin needed to cover the carbohydrates consumed



Calculated by using the food label information for
“Serving Size” and “Total Carbohydrates”



Formula: In Diabetes Medical Management and Treatment Plan



Meal: (____) units of insulin per (____) grams of carbohydrate

Snack: (____) units of insulin per (____) grams of carbohydrate

Food Dose: EXAMPLE

Imaginary Student

Lunch: Ate **60** grams of carbohydrates

Food Dose

Insulin-to-Carb Ratio in Diabetes Medical Management Plan is:

Lunch: **1 unit of insulin per 15 grams of carbohydrate**

$$\frac{\text{Grams of Carbohydrate in meal}}{\text{Insulin-to- Carb Ratio}} = \text{_____ units of insulin at lunch}$$

Calculation: $\frac{60}{15} = 4$ units of insulin at lunch

Example: Meal Plan Calculation for Carbohydrate Counting

Food Dose

L
u
n
c
h

			
Hot dog & bun 23 grams carbs	1/2 cup 5 grams carbs	1 small 15 grams carbs	1 cup white milk 15 grams carbs

Count Total Carbs 23 5 15 15 = **58 carbs**

Formula: 1 unit of insulin per 10 grams of carbohydrate

$$\frac{58}{10} = \mathbf{5.8 \text{ units of insulin}}$$

Example: Meal Plan Calculation for Carbohydrate Exchange

Example of Food Dose:

15 grams of carbs = 1 carb exchange = 1 unit of insulin

**L
u
n
c
h**

			
Meat sandwich 30 grams carbs	1/2 cup Applesauce 15 grams carbs	1 small apple 15 grams carbs	1 cup white milk 15 grams carbs

Add Carb
Exchanges

2

1

1

1

=

**5 carb
exchanges**

5 carb exchanges X 1 unit of insulin = 5 units of insulin

STEP 3: ADD

Correction Dose & Food Dose

Correction Dose: Blood Sugar 220

Calculation: $220 - 120 = 100 \div 50 = 2$ units of insulin

Food Dose:

L
u
n
c
h



Hot dog & bun
23 grams carbs

23



1/2 cup
5 grams carbs

5



1 small
15 grams carbs

15



1 cup white milk
15 grams carbs

15 = 58 carbs

Formula: 1 unit of insulin per 10 grams of carbohydrate

$$\frac{58}{10} = 5.8 \text{ units of insulin at lunch}$$

Don't Forget to Record Testing and Treatment Results

Insulin Dose = 2 + 5.8 = 7.8 units of insulin

(round as needed for insulin delivery system per DMMP)

STEP 4: Give Insulin

Follow the Diabetes Medical Management Plan
&
Individual Health Plan

Every time before giving insulin to a student **recheck**

- ✓ **Right Student**
- ✓ **Right Insulin**
- ✓ **Right Dose**
- ✓ **Right Time**

Other Emergency Treatments

**Always follow the Diabetes Medical Management & Treatment Plan (DMMP)
& Individualized Health Plan (IHP)**

Problem	Question/Answer	Solution
Hyperglycemia post meal.	<p>Q: How long since last meal or insulin dose.</p> <p>A: Less than 2 hours.</p>	Follow DMMP-generally if less than 2 hours since last meal or insulin dose the insulin has not had time to “catch-up” with food. Send student back to class with water and recheck when 2 hour time is up. If blood sugar remains elevated after 2 hrs-follow DMMP.
Student who self-manages with pump is found unconscious.	<p>Q: Student’s glucagon is kept in backpack-Where is backpack?</p> <p>A: You don’t know.</p>	<ul style="list-style-type: none"> •Turn student on side-stay with student. •Call 911, call school nurse, notify parent. •Send someone to find backpack. •Check blood sugar level-if low... •”Suspend” pump or “quick release tubing”- upon EMS arrival let them know about student’s diabetes and pump/send pump to ER with student. •If glucagon located- give per DMMP.
Glucose meter and supplies left on bus.	<p>Q: How do I contact transportation?</p> <p>A: School’s procedure for notifying transportation for quickest response time</p>	Notify transportation/parent to arrange for the securing of diabetic supplies and for the timely delivery of the supplies to school.
Student with diabetes is vomiting & has stomachache.	<p>Q: What is the blood sugar level and ketone level?</p> <p>A: Within target range.</p>	Follow DMMP and IHP. Ketones are always checked if stomachache and /or vomiting. Follow school policy for students ill at school.
Student with diabetes is conscious, but sustained an injury at school requiring EMS transport.	<p>Q: Has school policy for student injury and the calling of EMS transport been followed?</p> <p>A: Yes.</p>	<ul style="list-style-type: none"> •Notify school nurse and stay with student. •Students “home” diabetes supplies are to be gathered & sent to ER with student. •Let EMS know student has diabetes & when food & insulin were last taken.

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

- 1. If a student with diabetes is found unconscious or having a seizure the *first steps* in the Diabetes Medical Management Plan may be:**
 - a) Give glucagon shot, roll on their side, and call 911, school nurse, and parent
 - b) Roll the student on their side, call doctor, school nurse, and parent
 - c) Prop the student up and give a fast-acting sugar (i.e., juice)
 - d) Roll the student on their side and check a blood sugar reading
- 2. Insulin may be delivered by:**
 - a) Pen
 - b) Syringe and Vial
 - c) Pump
 - d) All of the above
- 3. A blood sugar may be inaccurate if taken within a 2 hour timeframe of food or insulin:**
 - a) True
 - b) False

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

4. **The amount of insulin given at lunch is determined by using the calculations found in the Diabetes Medical Management Plan. These calculations are determined by:**
 - a) The blood sugar reading before lunch (correction dose)
 - b) The total amount of carbohydrates eaten at lunch (food dose)
 - c) How many carbohydrates the student ate at breakfast
 - d) a & b

5. **A *Volunteer Health Aide* cannot change an insulin dose unless directed to do so by:**
 - a) a note from a parent
 - b) a phone call from a parent
 - c) a phone call from a doctor
 - d) a school nurse

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

6. There are (2) Methods used in counting carbohydrates for meals and snacks, Carbohydrate Counting and Carbohydrate Exchanges. What two lines on the food label are needed to accurately count carbohydrates for both of these methods:
- a) Total Carbohydrates and Sugars
 - b) Serving Size and Weight in Grams
 - c) Serving Size and Total Carbohydrates
 - d) Serving Size and Total Calories
7. How many grams of carbohydrates equal one carbohydrate exchange:
- a) 5
 - b) 10
 - c) 15
 - d) 30

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

Example: Use Student “X” for questions; (8) correction dose, (9) food dose, and (10) total amount of insulin to be given at lunch.

Student “X”

Blood sugar level before lunch of 220

Correction Dose Formula: (*blood sugar reading*) - 120 ÷ 50 = _____

- 8. The correction dose for Student “X” at lunch should be:**
- a) 1 unit of insulin
 - b) 2 units of insulin
 - c) 3 units of insulin
 - d) 4 units of insulin

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

Student "X" Lunch:

Food	Carbohydrates
Turkey sandwich	20 grams
Carrots and celery sticks	5 grams
Chocolate Chip Cookie	10 grams
Applesauce ½ cup	15 grams
Milk	15 grams
Total Carbohydrates =	<u>65 grams</u>

Food Dose: 1 unit of insulin for every 10 carbohydrates = _____

9. The food dose for the above Student "X" should be:
- a) 65 units of insulin
 - b) 1 unit of insulin
 - c) 6.5 units of insulin
 - d) 10 units of insulin

A Quick Review to Test Your Knowledge

Key 4: Glucagon, Insulin & Other Emergency Treatments

- 10. The total amount of insulin given at lunch for Student “X” should be:**
- a) 6.5 units of insulin
 - b) 2 units of insulin
 - c) 8 units of insulin
 - d) 8.5 units of insulin
- 11. Every time before giving insulin to a student you should check the Diabetes Medical Management and Treatment Plan and recheck the following:**
- a) Right Student
 - b) Right Insulin
 - c) Right Dose
 - d) Right Time
 - e) All of the Above



Key #5

**Recognizing complications
that need emergency
medical assistance**

Examples: When to call for Emergency Assistance

1. Prevent emergencies from happening by always following the DMMP and IHP. Call 911, school nurse, and parent if: severe nausea and vomiting • disoriented and confused • can't be kept awake • unconscious.
2. Unconsciousness: If Glucagon is given per DMMP always turn student on their side and call 911, school nurse, and parent.
3. If there is an insulin error or you forgot to give a snack-**act as soon as the error is discovered** to protect the health and safety of the student. Check blood sugar and follow DMMP and IHP. **Report situation to the school nurse IMMEDIATELY** for further action and proper procedures. **Do not leave the student.**
4. If the student is ill and you can't reach the parent. Follow the DMMP and IHP. Call the school nurse for further action.
5. You have a low blood sugar and you can't get it in target range with treatment after following the DMMP and IHP-call the school nurse.

The school nurse should be contacted for any questions or concerns you may have regarding the DMMP, IHP, or any other questions you may have regarding the care of students with diabetes.

A Quick Review to Test Your Knowledge

Key 5: Recognize Complications Requiring Emergency Assistance

- 1. The best way to prevent a diabetic emergency from happening is to always follow the student's Diabetes Medical Management Plan (DMMP) and Individual Health Plan (IHP):**
 - a) True
 - b) False

- 2. If you have a question regarding the student's DMMP or IHP you should call:**
 - a) school nurse
 - b) doctor
 - c) principal
 - d) parent

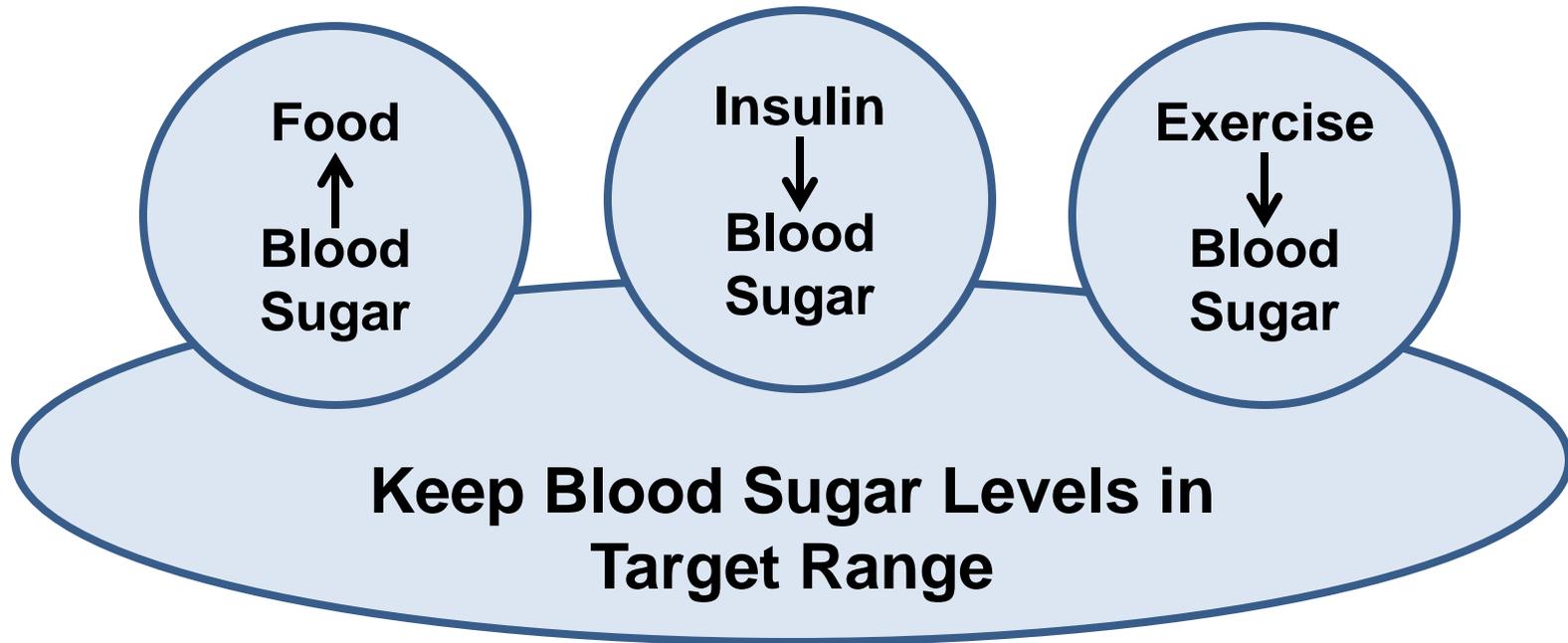


Key #6

Understanding:

- **Recommended Schedules for Meals and Snacks**
- **Effect of Physical Activity on Blood Glucose Levels**
- **Proper Action if Student's Schedule is Disrupted**

A Student with Diabetes Must Maintain a Balance Between Blood Sugar Levels–Food–Insulin–Exercise



Understanding: Recommended Schedules for Meals & Snacks

Student's with diabetes must always have:

1. Meals and snacks at the specified time of day.
2. Enough time to finish their lunch.
3. A snack and fast-acting carbohydrate immediately available (notify parent if snack supply low).
4. Permission to eat a snack anywhere in the school setting (including bus, field trips, extra-curricular activity).
5. Unrestricted access to water (and use of bathroom).
6. A blood sugar test before meals and carbohydrates must be counted for food eaten. These numbers will be used to calculate the dose of insulin to be given according to the student's Diabetes Medical Management Plan.

Routine Snacks

Some students may have *scheduled* snacks ordered in their DMMP and IHP

Food
↑
Blood
Sugar

The diagram consists of a small circle at the top containing the text 'Food', an upward-pointing arrow, and 'Blood Sugar'. This circle is positioned above a larger, light-blue oval that contains the main text and a list of points. The oval is outlined in a dark blue border.

Snacks Help Keep Blood Sugar Levels in Target Range

1. If ordered, snacks are ***not optional*** – they *must* be consumed or hypoglycemia may occur.
2. Timing of snacks depend on factors such as:
 - a. Amount of time between meals
 - b. Physical education class, recess, extra-curricular activities
 - c. Type of insulin used by student

Understanding: Effect of Physical Activity on Blood Glucose Level

Exercise
↓
Blood
Sugar

Keep Blood Sugar Levels in Target Range During Physical Activity

1. Exercise is an important part of the student's treatment plan and should not be restricted unless noted in DMMP.
2. Physical Education teachers and coaches should have the Volunteer Health Aide training so that they understand the DMMP and IHP and be able to **recognize and assist with the treatment of low blood glucose** levels. Including availability of glucose meter, **fast-acting source of glucose**, and water.

Understanding: Proper Action if Student's Schedule is Disrupted

- **Disruption to the Student's Schedule Will Happen**
- **Be Prepared and Plan Ahead**
- **Know the DMMP and IHP Action Steps to Follow**
- **Keep School Nurse Informed of Planned and Unplanned Events**

Examples of a Schedule Disruption

- Field Trips
- Party/Snacks
- 2-hour Delay
- School Assembly
- Physical Education Class or Recess Cancelled
- Extra Recess Awarded
- Field Day
- Change in Lunch Menu
- Fire Drill or Mass Evacuation (fast-acting glucose available)
- Lock-Down (fast-acting glucose available)
- Natural Disaster (students may need to stay at school)
- Standardized Testing (may need to plan ahead with school counselor)

Always have the student's diabetes supplies available (i.e., backpack) including:

Glucose Meter • Fast-Acting Carb

Cell Phone/Radio (call school nurse) • Emergency Contact Information

Understanding: Proper Action if Student's Schedule is Disrupted

Reminders...

1. Less Food (i.e., delayed meal or snack) will make the blood sugar go down.
2. Extra Food (i.e., party with snack) will make the blood sugar go up.
3. Less Activity (i.e., cancelled PE or recess) will make the blood sugar go up.
4. More Activity will make the blood sugar go down.

***During a Disrupted Schedule Pay Attention to the
Diabetes Medical Management & Treatment Plan
& Individual Health Plan***

Example: Class Party

Classroom Party Snack: Chocolate Chip Cookies and Snack Size Candy Bars

Food Labels Read: Serving Size and Total Carbohydrate

- Chocolate Chip Cookie (1): 15 grams carbs
- Snack Size Candy Bar (1): 10 gram carbs

- Total Carbohydrates: **25 grams**

Diabetes Medical Management Plan

- **Food Dose Formula:**
- **Snack : 1 unit of insulin per 10 units of carbohydrate**

May this student have a cookie and snack size candy bar?
If so, how much insulin should be given?

Example: Class Party

Classroom Party Snack: Chocolate Chip Cookies and Snack Size Candy Bars

Food Labels Read: Serving Size and Total Carbohydrate

- Chocolate Chip Cookie (1): 15 grams carbs
- Snack Size Candy Bar (1): 10 gram carbs

- Total Carbohydrates: **25 grams**

Diabetes Medical Management Plan

▪ **Food Dose Formula:**

▪ **Snack : 1 unit of insulin per 10 units of carb**

May this student have a cookie and snack size candy bar?
If so, how much insulin should be given?

Yes- Student may have the party snacks
Insulin: 2.5 units (may round up to 3 units per DMMP)
 $15 \text{ (carbs)} + 10 \text{ (carbs)} = 25 \div 10 \text{ (food dose ratio)} = 2.5$

A Quick Review to Test Your Knowledge

Key 6: Understanding: Meals and Snacks, Physical Activity and Disrupted Schedules

- 1. Food causes the blood sugar to:**
 - a) Increase
 - b) Decrease

- 2. Exercise causes the blood sugar to:**
 - a) Increase
 - b) Decrease

- 3. During an emergency evacuation (e.g., fire alarm) the volunteer health aide should take the following supplies outside:**
 - a. student's blood sugar monitoring kit
 - b. fast acting carbohydrate (e.g., candy, glucose tabs, juice box)
 - c. cell phone
 - d. all of the above

A Quick Review to Test Your Knowledge

Key 6: Understanding: Meals and Snacks, Physical Activity and Disrupted Schedules

4. **The student is having a holiday class party in two weeks. The party includes games and snacks. What should you do:**
 - a) Check the Diabetes Medical Management Plan and Individual Health Plan and notify the school nurse of the event
 - b) Tell the student to pack a “special” snack on the day of the event
 - c) Notify the parent that there is a party scheduled and they may want to keep their child home that day

5. **Your school has an emergency first aid bag in each classroom. In case of lockdown, what may be a good snack to keep in that bag for a student with diabetes:**
 - a) Sugar-free gum
 - b) Skittles
 - c) Bag of pretzels
 - d) Apple

Remember...

You are a **Key Player**
in contributing to the student's
Academic Performance
& keeping the student
Safe at School



Thank you!

American Diabetes Association: Safe at School

Introduction

[Watch the Video](#) (6:22)

[Diabetes Basics \(PPT\)](#)

[Watch the Video](#) (4:39)

[Diabetes Medical Management Plan \(PPT\)](#)

[Watch the Video](#) (2:27)

[Hypoglycemia \(PPT\)](#)

[Watch the Video](#) (3:12)

[Hyperglycemia \(PPT\)](#)

[Watch the Video](#) (1:53)

[Blood Glucose Monitoring \(PPT\)](#)

[Watch the Video](#) (2:22)

[Glucagon Administration \(PPT\)](#)

[Watch the Video](#) (2:24)

[Insulin Basics \(PPT\)](#)

[Watch the Video](#) (3:36)

[Insulin by Syringe and Vial \(PPT\)](#)

[Watch the Video](#) (3:06)

[Insulin by Pen \(PPT\)](#)

[Watch the Video](#) (2:01)

[Insulin by Pump \(PPT\)](#)

[Watch the Video](#) (1:50)

[Ketones \(PPT\)](#)

[Watch the Video](#) (2:31)

[Nutrition and Physical Activity \(PPT\)](#)

[Watch the Video](#) (2:31)

[Legal Considerations \(PPT\)](#)

[Watch the Video](#) (3:00)

References and Resources

1.  American Diabetes Association: The complete ADA Safe at School PowerPoint slides and videos: Diabetes Care Tasks at School: What Key Personnel Need to Know <http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/school-staff-trainings/diabetes-care-tasks.html>
American Diabetes Association: Written Care Plans/Sample forms: <http://www.diabetes.org/living-with-diabetes/parents-and-kids/diabetes-care-at-school/written-care-plans/>
2. Indiana State Statute: I.C. 20-34-5 <http://www.in.gov/legislative/ic/code/title20/ar34/ch5.html>
3. Juvenile Diabetes Research Foundation <http://jdrf.org/life-with-t1d/frequently-asked-questions/#types>
4. National Association of School Nurses: Diabetes in Children <http://www.nasn.org/ToolsResources/DiabetesinChildren>
5. National Diabetes Education Program: Helping the Student with Diabetes Succeed: A Guide for School Personnel <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=97#main>
6. Peyton Manning Children's Hospital: <http://peytonmanning.stvincent.org/content.aspx?p=30>
7. Riley Hospital: What is Diabetes: <http://iuhealth.org/riley/diabetes/youth-diabetes-prevention-clinic/what-is-diabetes/>
Riley Hospital for Children: School Information Forms: <http://iuhealth.org/riley/diabetes/pediatric-diabetes-program/school-information-forms/>
Riley Hospital for Children: Outpatient Diabetes Clinic: <http://iuhealth.org/riley/diabetes/pediatric-diabetes-program/outpatient-diabetes-clinic/>





IMAGINING
the possibilities.
MAKING THEM HAPPEN.



Indiana Department of Education

Glenda Ritz, NBCT

Indiana Superintendent of Public Instruction

*The “Training for Volunteer Health Aides: Care of Students With Diabetes”
was developed and/or reviewed by the following individuals:*

Jolene Bracale, MSN, RN
Program Coordinator for Student Health Services
Indiana Department of Education

Carol Dixon,
Senior Manager, Mission Delivery
American Diabetes Association-Indiana Area

Carol Gelatt, BSN, RN
Coordinated School Health Specialist
Indiana Department of Education

Sue Russell, RN, CDE
Outpatient Diabetes Educator
St Vincent Diabetes Center

Karen Stancombe, MSN, CPNP, CDE
Riley Hospital for Children IU Health

Linda Stroud, MSN, CPNP, CDE
Riley Hospital for Children IU Health