

Helping the Student With Diabetes While at School

Created by Ruth Fluke RN
Certified Diabetic Educator



Objectives of this Presentation

- The participants in this class will be provided with information needed
 - For a Basic Understanding of Diabetes
 - To recognize and respond to hypoglycemia and hyperglycemia
 - To understand the roles and responsibilities of individual staff members to the student with diabetes
 - For special considerations for the classroom and special events
 - To recognize the student with diabetes has legal rights



The Care of the Student with Diabetes Act

- Enacted by the General Assembly of Illinois
- Section 25 Training for school employees and delegated care aides.
 - “a.)In schools that have a student with diabetes, all school employees shall receive training in the basics of diabetes care, how to identify when a student with diabetes needs immediate or emergency medical attention, and whom to contact in case of an emergency during a regular in- service training.....”



Effective Diabetes Management at School

- Diabetes has to be managed 24 hours a day, 7 days a week
- Many students will be able to handle all or most of their non-emergency diabetic care by themselves
- School personnel need to be prepared to assist the student in routine care and in emergencies



The student's Personal Diabetic Health Care Team

- Student with diabetes
- Parents/guardian
- Nurse
- Doctor
- Registered Dietician
- Diabetes Educator
- Other health care providers involved with the student's care
- collaborates to develop the medical regime found in the Diabetes Medical Management Plan.



Diabetes Medical Management Plan

- Contains the medical orders prepared by the student's personal diabetes health care team
- It is the basis for all healthcare and education plans that help the student manage diabetes effectively at school
- This must be in place for the student's diabetes care plan to be implemented at school.



Members of the School Health Team

- Student with diabetes
- Parents/guardian
- School nurse
- Other school health care personnel
- Trained Diabetes Personnel
- Administrators
- Principal
- 504/IEP coordinator
- Office staff
- Student's teacher(s)
- Guidance Counselor
- Coach, lunchroom, and other school staff members
- Work together to implement the Diabetes Medical Management Plan.



Individualized Health Care Plan

- Written care plan developed by the school nurse in collaboration with the student's Personal Diabetes Health Care Team
- Based on medical orders in the Diabetes Medical Management Plan
- Is reviewed periodically with student and parents to evaluate progress toward goals



Individualized Education Plan

- Is required for students with disabilities who receive special education and related services under IDEA
- It is strongly recommended that this be agreed upon before each school year begins or upon the diagnosis of diabetes and be written and signed by a representative of the school and the parents/guardian



There Are Three Levels of Training

■ Level 1

- Diabetes Overview and How to Recognize and Respond to an Emergency Situation

■ Level 2

- The Types of Diabetes, Specific Instructions on Emergency Care Plans, and the roles of different staff members

■ Level 3

- General and Student-Specific Diabetes Care Tasks Intended for the diabetic trained personnel

■ We are discussing Levels 1 & 2 today



Diabetes

- There are approximately 200,000 school age children with diabetes in the U.S. making it the most common chronic disease affecting school age children
- It is estimated that 19,000 youth are diagnosed with Type I or Type II diabetes annually



Diabetes: A Chronic Metabolic Disease in Which the Body is in a State of Fuel Imbalance.

 This occurs because:

-  The pancreas makes no or too little insulin
-  And/or the cells in the muscle, liver, or fat do not respond properly to the insulin



Glucose is the fuel needed by body cells to function

After a meal, food is broken down into glucose

Insulin is a hormone produced by the pancreas that allows the glucose to enter the body cells

In people with diabetes blood sugar (or glucose) levels are chronically elevated



There are Three Main Types of Diabetes

Type I

-  Formerly known as Brittle or Juvenile, Insulin Dependent

Type II

-  Formerly known as Adult Onset , Non-Insulin Dependent

Gestational

-  Occurs with pregnancy



Type I

- The Beta cells in the Pancreas stop producing Insulin
- Can occur at any age is most common in children
- Only 5-10% of adults with diabetes have Type I
- Most children who develop diabetes under the age of 10 are Type I



Possible Causes of Type I

Autoimmune response

-  The persons own immune system kills the Beta Cells in the Pancreas

Post Viral

-  The virus attacks the Beta Cells

Genetic



Signs and Symptoms

- The onset is often sudden
- May be mistaken for the Flu
- Increased thirst
- Increased Urination
- Weight loss, this may be dramatic
- Fatigue
- Blurred vision



Treatment

- Administer Insulin
- Monitor blood sugar
- Balance Insulin, Activity, and Food Intake to keep blood sugar in a range determined by the health care team.



Insulin

■ Is administered by

■ Syringe



■ Insulin pump



■ Insulin pen



■ There are different types of Insulin and they differ in their:

■ Onset of action

■ Length of time before it reaches blood stream

■ Peak of action

■ Time it is at its' maximum strength

■ Duration of action

■ Number of hours it continues to lower the blood sugar

Each Student's Insulin Regime will be very Different!

Basic plans that you may see

Basal

-  The student takes long or intermediate acting insulin scheduled once or twice a day

Basal/Bolus

-  In addition to the basal the student make take a bolus of short or rapid acting insulin
 - To cover the carbohydrates eaten
 - To lower the blood sugar to target
-  Students using this plan will receive multiple injections a day or have an Insulin Pump



The Individual Student's Insulin Regime

- Is included in the Diabetic Management Plan (DMMP)
- It can only be altered by the Health Care Provider
- The School Nurse or delegated diabetes personnel will be responsible for assisting the student in following the DMMP



Untreated Type I Diabetes

- The person can go into life threatening Diabetic Ketoacidosis
- In this situation the body is starving because it can't use glucose. Fat is broken down for fuel. This results in the production of Ketones



Diabetic Ketoacidosis (DKA)

■ With DKA the person can develop any or all of these things:

- Persistent vomiting
- Severe Dehydration
- Fruity Breath
- Difficulty Breathing
- Drowsiness
- Coma and Death



Type II

- Is a progressive disease
- In the past this only affected adults, it is now occurring in children
- Usually begins with Insulin Resistance
 - The muscle, liver, and fat cells don't use Insulin properly
- Early in the disease process, the Pancreas produces extra Insulin to attempt to overcome the Insulin Resistance
- As the disease progresses, the Pancreas loses its ability to make enough Insulin
- Eventually there is no Insulin produced and the disease becomes like Type I



Risk Factors for Developing Type II are:

- Obesity or overweight
- Family history of diabetes
- More common in certain ethnic groups
 - African American
 - Hispanic
 - American Indian
 - Alaskan natives
 - Asian
 - Native Hawaiians



Signs and Symptoms of Type II Diabetes

- There may be no symptoms at all
- Or symptoms may be similar to Type I
- Fatigue
- Increased Thirst
- Frequent Urination
- Frequent infections
- Slow healing of wounds
- Blurred vision



Treatment

Lifestyle changes

-  Healthy food choices
-  Regular physical activity
-  Weight loss

Medications may be needed to address Insulin Resistance and Insulin Insufficiency



Hyperglycemia (High Blood Sugar)

- 
- Chronic hyperglycemia can lead to serious complications. These occur in people with Type I or Type II Diabetes.
 - Heart Attack and Stroke
 - Damage to the blood vessels in the eyes and kidneys that can result in blindness and kidney failure
 - Damage to the nerves in the body resulting in neuropathies that can affect the arms, legs, blood pressure, heart rate control, and digestion
 - Weak immune system that predisposes person to infections and contributes to poor healing
 - Higher incidence of gum disease and oral infections
 - Cataracts and glaucoma
 - Poor circulation that contributes to the loss of lower limbs

When Diabetes develops in childhood, these problems can happen in the teen years or as young adults



Research shows that these complications can be postponed or prevented if blood sugars are kept near normal



The third type is Gestational Diabetes

- Occurs during pregnancy most often at 24 - 28 weeks
- The hormones of pregnancy can cause Insulin Resistance
- The diabetes usually goes away after the birth of the baby.
- The mother has a 40-60% chance of developing diabetes later in life
- The offspring of this pregnancy is at greater risk for obesity and Type II diabetes



Hypoglycemia (Low Blood Sugar)

- Can happen suddenly, needs prompt recognition and treatment
- Can impair the students cognitive ability
- Can be mistaken for misbehavior
- More likely to occur when
 - Too much insulin was taken
 - Food intake is less or late
 - Participating in vigorous physical activity
- This can also occur in the student with Type II Diabetes that is on Oral Diabetic Medication
- Can usually be treated easily, BUT if not treated promptly can lead to loss of consciousness and be LIFE THREATENING



School Personnel Need to Recognize the Signs of Hypoglycemia!!

- Some people with diabetes have Hypoglycemia unawareness and may not have symptoms till it is severe
- Sometimes the only symptom is sudden behavior change
- Younger children may not recognize the symptoms



Basic Response to all Levels of Hypoglycemia

- **Notify School Nurse or Trained Diabetes Personnel**
- **If possible check Blood Sugar as directed in the student's Diabetic Management Plan**
- **When in doubt, always TREAT FOR HYPOGLYCEMIA**
- **NEVER send a child with suspected low blood sugar anywhere alone**



Hypoglycemia Can Be

 Mild

 Moderate

 Severe



Possible Symptoms of Mild Hypoglycemia

-  Hunger
-  Shakiness
-  Weakness
-  Paleness
-  Anxiety
-  Irritability
-  Dizziness
-  Sweating
-  Drowsiness
-  Personality change
-  Inability to concentrate



Actions needed for Mild Hypoglycemia

- Student may/may not treat self
- Check blood sugar if possible
- Provide a quick-sugar source
 - 4 oz. juice
 - 3-4 Glucose tablets
 - 6 oz. regular (NOT DIET) pop
 - 3 teaspoons of glucose gel
- Wait 10 -15min after giving one of the above
 - Recheck blood sugar
 - Repeat food if symptoms persist or if blood sugar remains below the range in the DMMP
- Follow with a snack of carbohydrate and protein (i.e., cheese and crackers)



Scenario: 1 In the Classroom

Student tells you they are

- Hungry and it's 10:30 a.m. and lunch is in 45 minutes
- They seem irritable and anxious which is not their normal behavior
- Sweating but it's hot in the room right now anyway



Scenario: 1

Click on the type of reaction this is?

 Mild Yes

 Moderate No

 Severe No

And what do you need to do?



Scenario 1 - Mild Hypoglycemia:

Click on the correct actions

You will have to help the student

The student at this point may still be able to treat themselves

Check blood sugar if possible

Correct

Provide a quick-sugar source

Correct

Recheck blood sugar and repeat food if repeat
blood sugar is below the range listed on
DMMP 10-15 minutes

Correct

Follow with a snack of carbohydrate and protein

Correct, a good snack would be cheese and crackers



What are Quick-Sugar Sources?

Click on correct answers

Diet Soda Pop

Regular soda pop

4 oz. juice

Correct

3-4 Glucose tablets

Correct

Candy Bar

The candy's high fat content slows the glucose absorption

3 teaspoons of glucose gel

Correct



Symptoms of Moderate Hypoglycemia

-  Headache
-  Behavior change
-  Poor Coordination
-  Blurry vision
-  Weakness
-  Slurred speech
-  Confusion



Actions Needed for Moderate Hypoglycemia

- Check blood sugar if possible
- Student will require assistance
- Give student quick-sugar source per MILD guidelines
- Wait 10 – 15 minutes
- Recheck blood sugar
- Repeat food if symptoms persist or blood glucose remains less than range on DMMP
- Follow with a snack of carbohydrate and protein (i.e., cheese and crackers)



Scenario: 2 At sports practice

Student is an good ball player but lacks some discipline in taking direction; likes to joke around

During practice you notice he is not making his shots, dropping the ball a lot and he's goofing around talking funny.

When you approach him, his speech is slurred, seems confused and becomes somewhat combative



Scenario: 2

Click on the type of reaction this is?

 Mild No

 Moderate Yes

 Severe No

And what do you need to do?



Click for actions

Moderate Hypoglycemia

The same actions you do for a mild reaction

The only difference is the student may need assistance



Symptoms of Severe Hypoglycemia

-  Loss of Consciousness
-  Seizure
-  Inability to swallow



Actions Needed for Severe Hypoglycemia

- DO NOT attempt to give anything by mouth
- Position on side, if possible
- Contact school nurse or trained diabetes personnel
- Administer Glucagon as prescribed
- Call 911
- Check blood sugar as soon as possible
- Contact parents/guardian
- Stay with student



What is Glucagon?

- It is a hormone that raises blood glucose levels by causing the release of Glycogen from the liver
 - Glycogen is Glucose stored in the liver
- Must be given by school nurse or trained diabetes person
- If it is Not mentioned in the DMMP or is not available CALL 911



Scenario: 3 On the School Bus

- Another student tells you her friend is supposed to get off here but she can't get her up. She says her friend had been tired at school and she thought she was just sleeping.
- You go back to find the child pale, sweating
- You can't hardly get her to wake up



Scenario: 3

Click on the type of reaction this is?

 Mild No

 Moderate No

 Severe Yes

And what do you need to do?



Scenario 3 - Severe Hypoglycemia:

Click on the correct actions

X DO NOT attempt to give anything by mouth

Keep them on their backs

Position on side if possible

X Contact school nurse or trained diabetes personnel

X Administer Glucagon as prescribed

Leave the student so you can Call 911

Never leave the student,
but do call 911

X Check blood sugar as soon as possible

X Contact parents/guardian

X Stay with student

Hyperglycemia (High Blood Sugar)

- Usually develops over time – several hours or days
- Causes may be:
 - Too much food
 - Too little Insulin
 - Decreased activity
 - Illness
 - Infection
 - Stress



Hyperglycemia may be :

-  Mild
-  Moderate
-  Severe



Possible Symptoms of Mild Hyperglycemia

- Thirst
- Frequent urination
- Fatigue/sleepiness
- Increased hunger
- Blurred vision
- Weight loss
- Stomach pains
- Flushing of skin
- Lack of concentration
- Sweet Fruity Breath



Possible Symptoms of Moderate Hyperglycemia

 Mild symptoms plus:

 Dry mouth

 Nausea

 Stomach cramps

 Vomiting



Possible symptoms of Severe Hyperglycemia

- Mild and moderate symptoms plus:
- Labored breathing
- Very weak
- Confused
- Unconscious



Actions Needed for Hyperglycemia

- Allow free use of bathroom
- Encourage student to drink water or sugar-free drinks
- Contact the school nurse or trained diabetes personnel to check urine or administer insulin, per student's Diabetes Medical Management Plan
- If student is nauseous, vomiting, or lethargic,----- call the parents/guardian or call for medical assistance if parent cannot be reached



Scenario: 4 In the Classroom

This student has had a dramatic weight loss and today you notice :

- More sleepy
- Having trouble concentrating
- Fruity smelling breath



Scenario: 4

Click on the type of reaction this is?

- | | |
|---|------------------------------------|
|  Mild | Yes - Mild Hyperglycemia Reactions |
|  Moderate | No |
|  Severe | No |



Scenario: 5

Early in P.E. Class

- Skin is red
- Not trying very hard, seems tired
- Cooperating poorly as students are directed to do laps
- Keeps asking to be excused to go to the bathroom

Then later during P.E. Class

- Complains of abdominal pain
- Begins to vomit



Scenario: 5

Click on the type of reaction this is?

 Mild No

 Moderate No

 Severe Yes - Severe Hyperglycemia Reactions



Considerations for the Classroom and Special Events for Students with Diabetes

- If the student is on medication for diabetes, the blood sugar may change quickly and multiple blood sugar readings may need to be taken throughout the day



Student's with diabetes must have access to their supplies and equipment for immediate response to high and low blood sugars

- It is medically preferable to let the students check their blood sugar and take their insulin or food to correct it, where they are; in the classroom or at any school activity.



Hypoglycemia and Hyperglycemia can affect the student's ability to concentrate.

- The student may become confused, jittery, nervous, argumentative, and combative.
- If the student is experiencing hypoglycemia or hyperglycemia, arrangements need to be made for alternate times to complete assignments or take exams.



Full participation in all school sponsored activities and field trips should be encouraged.

■ Parental attendance should never be a pre-requisite for participation by students with diabetes.

■ In the absence of a parent, the student should be accompanied by the school nurse or trained diabetes personnel.



Class Parties and Special Events

 When possible, parents of the diabetic student should be notified in advance of special activities like class parties, so they can incorporate special foods or adjust the insulin dose and/or time.



There are generally No Forbidden Foods in Diabetes

- The student's DMMP should include dietary needs
- In general a variety of healthy foods is needed to maintain a healthy body weight and sustain normal growth and development
- Attention has to be given to the timing of snacks and meals, the amount of food served, and the content, especially carbohydrates.



Diabetes can effect every facet of life, complicating the normal developmental challenges.

- Any change in the student's behavior needs to be reported to the appropriate school personnel and/or the parents or guardian



Actions for School Personnel, Parents or Guardian, and Students

- These actions are found in Section 2 of Helping the Student with Diabetes Succeed, pages 69 thru 71.
- Copies of the Actions for Each position are available today.



The Student With Diabetes Have Legal Rights

- Section 504 of the Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990
- Individuals With Disabilities Education Act (IDEA)
- Family Educational Rights and Privacy Act (FERPA)
- These are addressed in Section 4 of Helping the Student with Diabetes Succeed



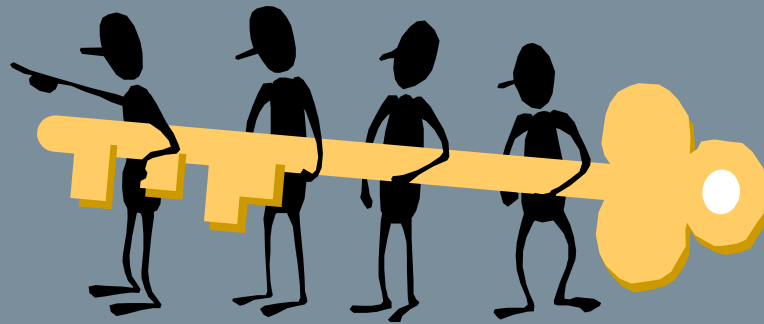
Very Briefly, some of these rights are:

- (Under 504) Students with disabilities must be given an equal opportunity to participate in academic, nonacademic, and extracurricular activities.
- (IDEA) Requires school districts to find and identify children with disabilities and to provide them a free appropriate public education.
- (FERPA) Generally prohibits schools from disclosing personally identifiable information in a student's education record, unless the school obtains the prior written consent of the student's parent/guardian or the eligible student.....However there are a number of exceptions to this requirement
- (FERPA) The parents/guardian or eligible student must be given the opportunity to inspect and review the student's education record.



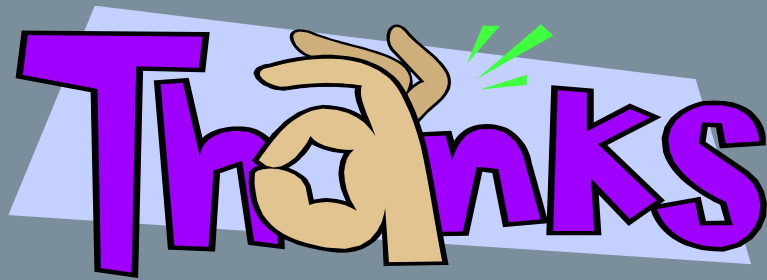
Helping the Student with Diabetes *SUCCEED*

- Beating Diabetes requires a team effort
- It is a complicated disease that can affect every aspect of life
- As each of us gain understanding, the power to overcome the challenges of the disease will increase



Thank You All for the Contribution you will make!!

 Each one of you in whatever position you hold can make a significant difference in the life of the student with diabetes



This presentation was produced
from the information covered in
Helping the Student with Diabetes
Succeed, Updated Edition 2010

 Produced by the National Diabetes
Education Program



To obtain copies of this guide;
Helping the Student with Diabetes
Succeed and other information
about diabetes and youth:

■ Call the National Diabetes Education
Program

■ 1-888-693-6337

■ Visit the program's website

■ www.YourDiabetesInfo.org

