

Diabetes

Diabetes Basics

Diabetes
high blood sugar levels in
insulin is the hormone th
regulates glucose in the
chronic conditions that

Key Points That All Personnel Need To Know

Learning Objectives

Participants will be able to understand:

- What is diabetes?
- Why care at school is required?
- Basic components of diabetes care at school.
- Short and long term consequences of diabetes.

What is Diabetes?

In diabetes:

Body does not make or properly use insulin

Insulin is needed to:

Move glucose from blood into cells for energy

If insulin isn't working, high blood glucose results:

Energy levels are low

Dehydration

Complications

Type 1 Diabetes

ONSET: relatively quick

SYMPTOMS:

increased urination
tiredness
weight loss

increased thirst
hunger
dry skin
blurred vision

CAUSE:

uncertain, both genetic and
environmental factors

Type 2 Diabetes

Insulin resistance – first step

Age at onset:

- Most common in adults
- Increasingly common in youth
 - *overweight*
 - *inactivity*
 - *genes*
 - *ethnicity*

Type 2 Diabetes

ONSET:

variable timeframe
for children

SYMPTOMS:

tired, thirsty, hunger,
increased urination

- **some children show no symptoms at diagnosis**
- **others are symptomatic with very high blood glucose levels**

Diabetes is Managed,
But it Does Not Go Away.

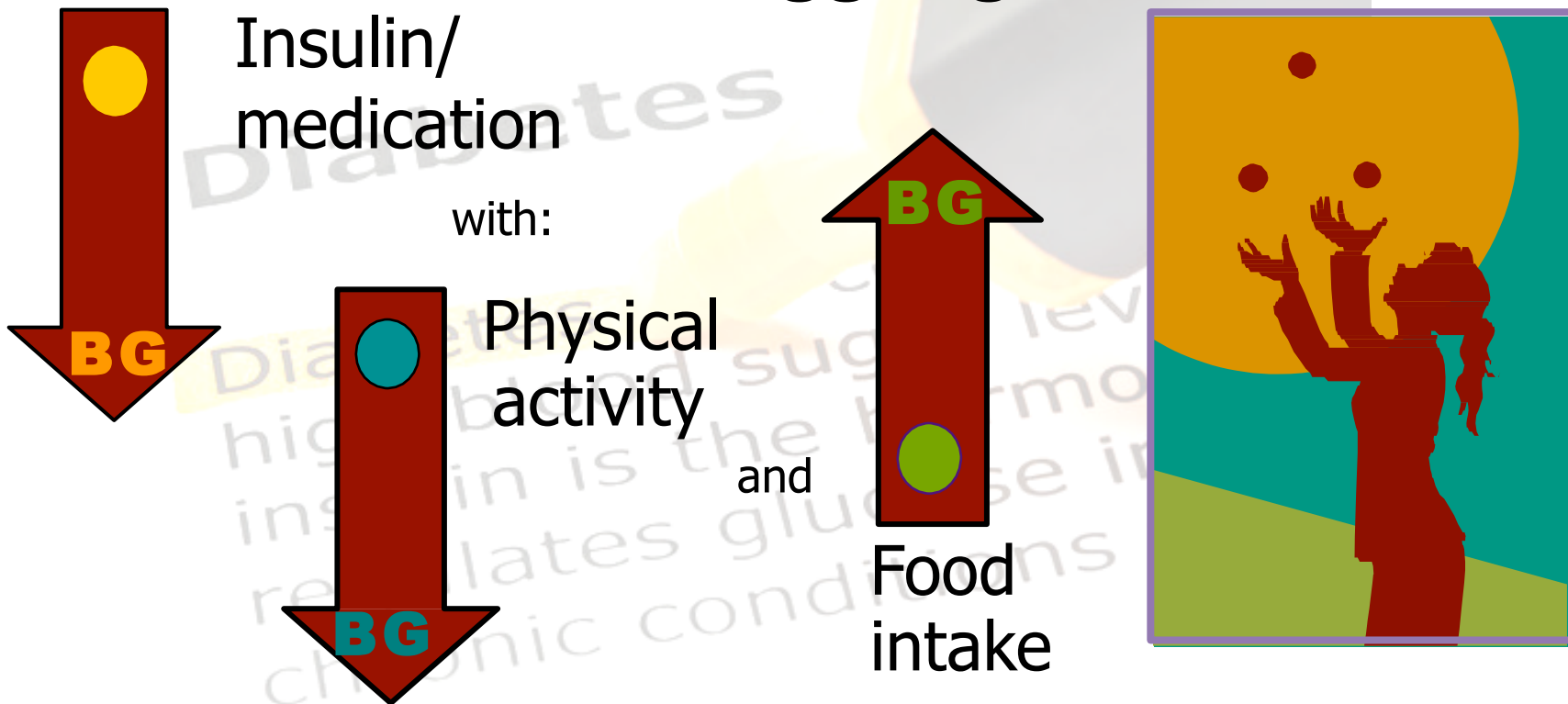


GOAL

⋮
Maintain target
blood glucose

Diabetes Management

Constant Juggling - 24/7



Routine Care:

- Many students will be able to handle all or almost all routine diabetes care by themselves
- Some students will need qualified school staff to perform or assist with routine diabetes care

Emergency Care:

- ALL students with diabetes will need help in the event of an emergency situation

Both low (hypoglycemia) and high (hyperglycemia) blood glucose levels can cause problems for students with diabetes.

HYPoglycemia Vocabulary

Glucose - simple sugar found in the blood; fuel that all body cells need to function

HYPoglycemia - a LOW level of glucose in the blood

Quick-acting glucose - sources of simple sugar that raises blood glucose levels, like juice, regular soda, glucose tabs or gel, hard candy

Glucose tablets or gel - special products that deliver a pre-measured amount of pure glucose. They are a fast-acting form of glucose used to counteract hypoglycemia

Carbohydrate - source of energy for the body, which raises blood glucose level

Glucagon - hormone given by injection that raises level of glucose in the blood

HYPoglycemia = LOW Glucose (sugar)

Onset:

- sudden, must be treated immediately
- may progress to unconsciousness if not treated
- can result in brain damage or death

Student Care Plan should specify signs and action steps at each level of severity:

- mild
- moderate
- severe

Hypoglycemia: Possible Signs & Symptoms

Mild Symptoms

Hunger	Sleepiness
Shakiness	Changed behavior
Weakness	Sweating
Paleness	Anxiety
Blurry vision	Dilated pupils
Increase heart rate or palpitations	

Moderate to Severe Symptoms

Yawning	Confusion
Irritability/frustration	Restlessness
Extreme tiredness/fatigue	Dazed appearance
Inability to swallow	Unconsciousness/coma
Sudden crying	Seizures

Hypoglycemia: Possible Causes

- Too much insulin
- Too little food or delayed meal or snack
- Extra/unanticipated physical activity
- Illness
- Medications
- Stress

Hypoglycemia: Risks & Complications

- Early recognition and intervention can prevent an emergency
- Greatest immediate danger
- Not always preventable
- Impairs cognitive and motor functioning

Severe Hypoglycemia Symptoms

- Convulsions (seizures)
- Loss of consciousness
- Inability to swallow

HYPERGlycemia Vocabulary

HYPERGlycemia - too HIGH a level of glucose in the blood

Ketones - (ketone bodies) Chemicals that the body makes when there is not enough insulin in the blood and the body must break down fat for its energy

Diabetic ketoacidosis (DKA) - An acute metabolic complication of diabetes characterized by excess acid in the blood which can be life threatening

Ketone testing - a procedure for measuring the level of ketones in the urine or blood

Glucose - a simple sugar found in the blood. The fuel that all body cells need to function

HYPERGlycemia = HIGH Glucose (Sugar)

Onset:

- Usually slow to develop to severe levels
- More rapid with pump failure/malfunction, illness, infection
- Can mimic flu-like symptoms
- Greatest danger: may lead to diabetic ketoacidosis (DKA) if not treated

Student Care Plan will specify signs and action steps at each level of severity:

- Mild
- Moderate
- Severe

Hyperglycemia: Possible Signs & Symptoms

Severe Symptoms

Labored breathing	Confusion
Profound weakness	Unconscious

Moderate Symptoms

Dry mouth	Vomiting
Stomach cramps	Nausea

Mild Symptoms

Lack of concentration	Thirst
Frequent urination	Flushing of skin
Sweet, fruity breath	Blurred vision
Weight loss	Increased hunger
Stomach pains	Fatigue/sleepiness

Hyperglycemia: Possible Causes

- Late, missed or too little insulin
- Food intake exceeds insulin coverage
- Decreased physical activity
- Expired or improperly stored insulin
- Illness, injury
- Stress
- Other hormones or medications
- Hormone fluctuations, including menstrual periods
- Any combination of the above

Monitoring Blood Sugar

Students with diabetes will monitor their blood sugars both at designated times and randomly throughout the school day. This is accomplished using a small device called a glucometer and requires a finger stick. Students must be allowed to do this as needed.

Blood Glucose Monitoring

GOAL:

- maintain blood glucose within target range

IMMEDIATE BENEFIT:

- maximize learning and participation
- identification, treatment, and prevention of lows and highs

LONG-TERM BENEFIT:

- decrease risk of long-term complications
- maximize health

CHALLENGE:

- many variables impact blood glucose

Any Time, Any Place Monitoring

For students who can self-check:

- Improved blood glucose control
- Safer for student
- Student gains independence
- Less stigma
- Less time out of class
- Assists decision making in response to result

Needs of Children With Diabetes in School Setting...

- A medically safe environment for students with diabetes
- Equal access to educational and school-sponsored opportunities

Federal Laws: Equal Access

- **Section 504** - Section 504 of the Rehabilitation Act of 1973
- **ADA** - Americans with Disabilities Act
- **IDEA** - Individuals with Disabilities Education Act

Federal Protections

- Prohibits discrimination against people with disabilities by public schools and most private schools
- Students must be given equal opportunity
- Related aids and services are required to meet the individual needs of a student with a disability

Information for Teachers

- Students with hyperglycemia or hypoglycemia often do not concentrate well.
- Students should have adequate time for taking medication, checking blood glucose, and eating.
- During academic testing, provide accommodations as per 504 plan or IEP
 - *Check blood glucose before and during testing, per plan*
 - *Access to food/drink and restroom*
 - *If a serious high or low blood glucose episode occurs, students should be excused with an opportunity for retake*

Written Plans

- Diabetes Medical Management Plan (DMMP)
- Individualized Health Care Plan (IHP)
- Quick Reference Emergency Plan
- 504 Plan
- Individualized Education Program (IEP)

****Please see your school nurse for additional information*

If you have any questions or concerns, please contact a school or district administrator. Thank you.