

Diabetes Basics

Care for Students Living with T1D



DIABETES IS HARD.
GETTING HELP SHOULDN'T BE.

WELCOME

Objectives

- Understand diabetes, signs and symptoms
- Understand general management
- Understand glucose monitoring and insulin administration techniques
- Understand IHP/IEHP Procedures, specific issues and related actions

Understanding Diabetes Slides

- **Increased Incidence of Diabetes by Race**
- **What is Diabetes?**
- **Symptoms of Diabetes**

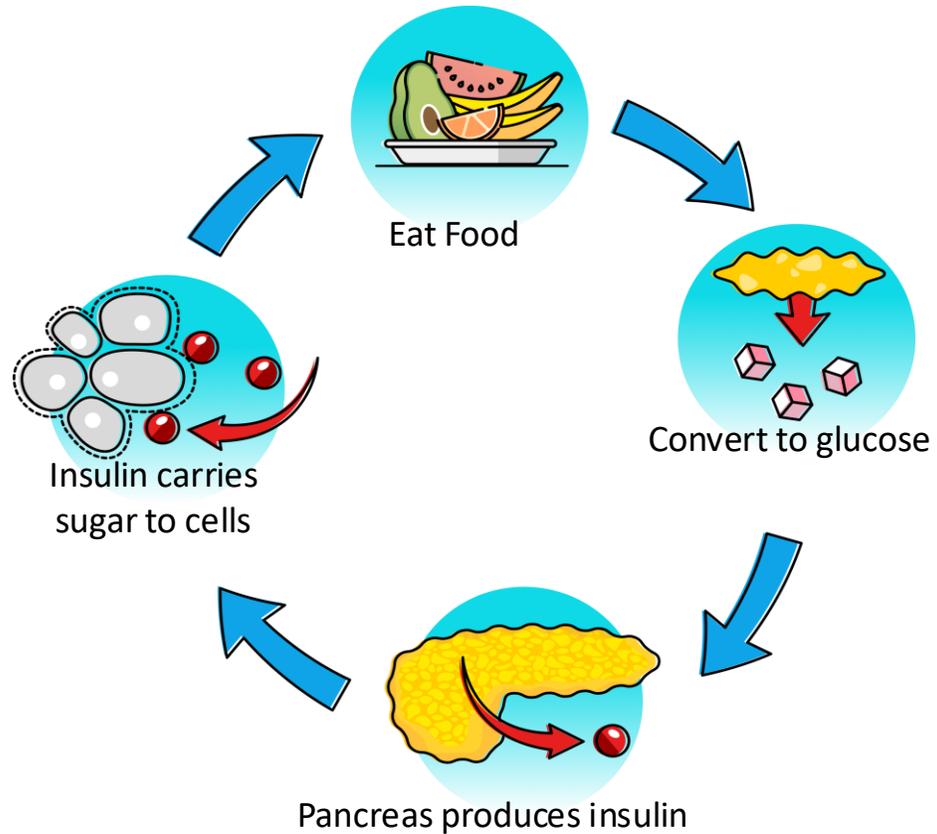
Increased Incidence by Race

- Non-Hispanic white children and adolescents continue to have the highest incidence of T1D
- However, there is a significant increase in incidence of T1D in children and adolescents in the races below:
 - Non-Hispanic Black *
 - Non-Hispanic Asian *
 - Pacific Islanders *
 - Hispanic *

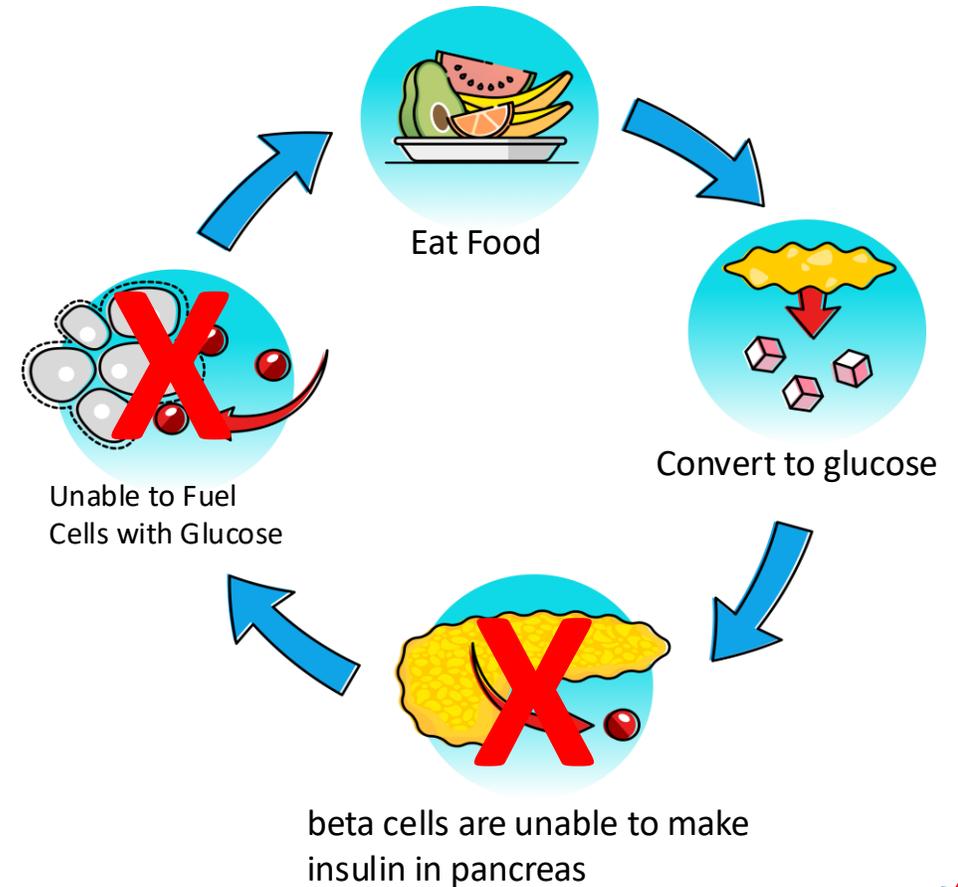
** T2D is also on the rise in these populations*

What is Diabetes?

Regular Metabolism



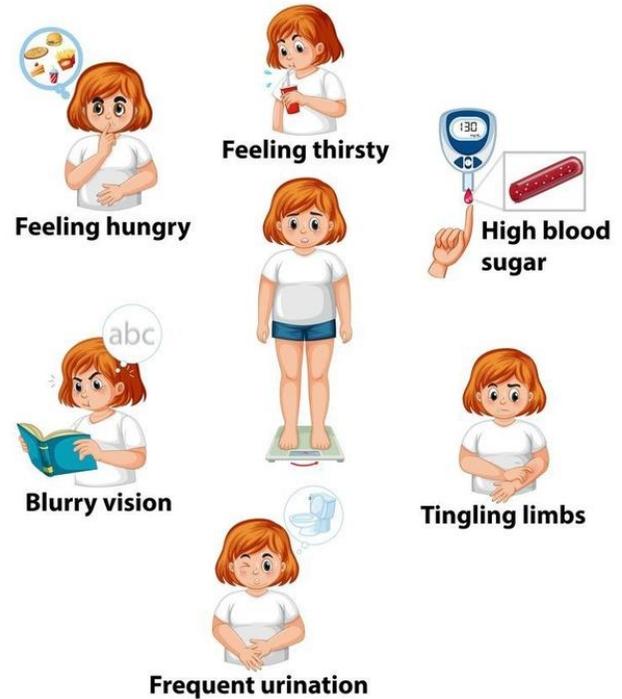
T1D Metabolism



Symptoms

- Frequent thirst
- Frequent urination
- Fatigue/feeling extremely tired
- Hunger (despite eating regularly)
- Blurry vision
- Slow to heal cuts/bruises
- Numbness or tingling in hands or feet
- Weight loss despite eating often (seen in type 1)

DIABETES SYMPTOMS



T1D Management

- **Daily Self Management**
- **Student Rights 504 Plan**
- **Glucose Monitoring Types**
- **Insulin Administration**

Understanding Daily Self-Management

Your students with T1D have a LOT to manage on a daily basis!

- Glucose Monitoring – they may have a CGM or a glucose meter
- Nutrition – they need to understand how certain foods raise their blood sugar levels; they may need to carb count to match their insulin prior to meals & snacks
- Insulin – they are insulin dependent; the student may use various methods to deliver their insulin.
- Physical Activity – Students have to know when to reduce insulin & what to eat before & after activity to prevent hypoglycemia.



Through all of these daily management tools they are trying to achieve normal blood sugar levels to prevent hypoglycemia and hyperglycemia

Monitoring Types



- **Glucose Meter** is a finger stick with a lancet (lancet is on the right side of picture); place blood onto test strip and insert strip to meter to read the number.
- Gives the person an idea of what their blood sugar is at THAT moment



- **CGM** = continuous glucose monitor; sensor is worn on underside of arm or belly & connects to SMART device such as a phone.
- CGM is used continuously and doesn't require a fingerstick.
- May alarm if too low or too high

Insulin Delivery Methods



Syringe & Vial:

- least expensive
- Need to measure exact dose & may have multiple syringes & vials for insulin



Pens:

- Needle is in the pen
- Dial in for dose; easier to use than syringe



Smart Pens:

- Tracks dosing of insulin & how much insulin is on board
- May have additional safety features



Insulin Pumps:

- Eliminates need for multiple daily injections of insulin
- Some may connect to CGM

Student Rights 504 Plan

- Can go to BR at any time
- Can go to the nurse at any time
- May eat snacks and have fluids at any time
- To check blood glucose level/how or when is in IHP (may need telephone)
- Know where supplies be located
- Extra time on assignments and tests due to absences and/or health related issues
- To be absent or late to school due to health-related issues and not penalized

IHP/IEHP Procedures and Potential Issues

- IHP Information
- Issue Area: Low and High Sugar
- Hypoglycemia Problem Solving
- Hyperglycemia Problem Solving

Individualized Health Plan (IHP)

- Hypoglycemia symptoms for student with recommended treatment
- Frequency of glucose testing; **typical patterns**
- Insulin and glucagon orders (type, timing, dosage)
- Times of meals/snacks and exercise
- Guidance related to sports and exercise, trips and parties
- Any medical issues that might impact learning
- Specific information about education provided
- Student self-management plan
- Nutritional needs and preferences
- Other protocols as needed

Issue Area: Low and High Blood Sugar

- Blood sugar below or above target range is considered hypoglycemia or hyperglycemia, respectively.
- *Risks associated with hypoglycemia:* changes in cognitive functioning interfering with students' ability to learn and participate (school performance), risks with driving (older students)
- *Risks associated with hyperglycemia:* changes in cognitive functioning, macrovascular complications (long term complications), microvascular complications (long term complications)

Mild Hypoglycemia

Glucose level: below 70 mg/dL

Symptoms:

- Shakiness or trembling of hands
- Weakness such as inability to participate in gym class
- Confusion or difficulty focusing during class
- Rapid Heart Rate that feels like anxiety
- Dizziness
- Headache
- Sweating that is noticeably abnormal
- Hunger

Causes: Physical Activity, Timing, composition of meals & insulin dosing

Treatment: Self treat or get treated using 15/15 rule



Treatment: 15-15 Rule

When to Initiate:

- Symptoms of hypoglycemia are present and/or glucose reading indicates low glucose level (<70 mg/dL)
- If hypoglycemia is suspected & unable to confirm with glucose measurement, assume low & treat glucose.
- If student is able to take food or drink by mouth.

Examples of 15 gm Fast acting Carb:

- 4 ounces of juice/soda
- 3 glucose tabs
- 3-4 starbursts
- Fun size pack of skittles
- 2 pkg smarties
- 1 tube glucose gel
- 3 sugar packets
- 1 Tbsp honey



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15-15 Rule for hypoglycemia

When blood sugar drops <70mg/dl TAKE ACTION:

- Choose 16 grams of a quick acting carbohydrate source that is easy to measure
- Eat or drink item, wait 15 minutes, and recheck your blood sugar
- If sugar is still below 70mg/dl, repeat this process until its above70mg/dl
- Once this level is reached, eat a regular meal or a balanced snack which includes carbohydrates, protein and fats to help prevent another event

TIPS

- Be attentive to blood sugar and act immediately
- Carry a "hypoglycemia kit" when you leave the house
- Always keep supplies at your bedside table
- Do not choose foods with fat or protein
- Choose non-perishable fast acting carbohydrates

Options: Student can use their go bag or go to nurse.

Severe Hypoglycemia

Glucose level: Drops to ≤ 54 mg/dL

Medical Emergency

If student is unresponsive treat with glucagon

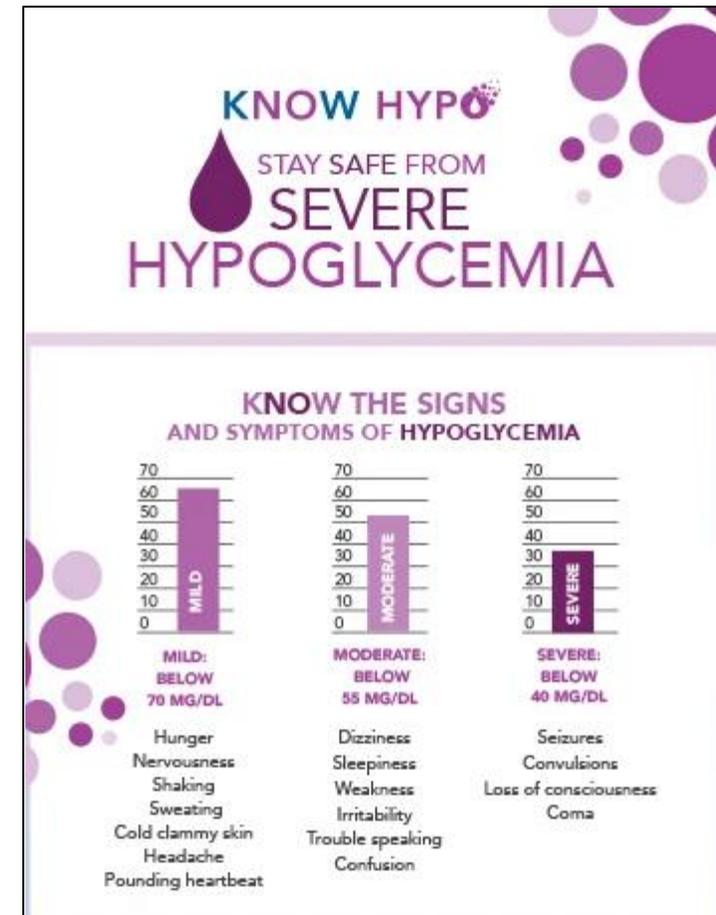
Symptoms:

- Double vision or blurry vision
- Slurred speech
- Difficulty with coordination during an activity
- Not oriented to time and place
- Seizures
- Loss of consciousness

Causes: A condition in which autonomic symptoms and neurological symptoms typically present in hypoglycemia, become hardly noticeable.

- This may be due to altered brain glucose sensing
- Impaired hormonal counter regulation
- Impaired autonomic & neuroglycopenic symptoms

Student needs attention; support by connecting student with school nurse!



Emergency Action: Administer Glucagon

When?

- Symptoms such as unconsciousness, seizures, or extreme lethargy.

What to do?

- Place on side & administer glucagon according to instructions
- Immediately after treating student, call 911 & parents
- A response should be clear within 15 minutes of administration; if not, a second dose should be considered.
- Once consciousness is regained, 15g of carbohydrate should be consumed.
- Glucose should be monitored for up to 2 hours after administration of glucagon.

*Reactions may occur

Glucagon Delegates are appointed to handle this.

Zegalogue



Baqsimi



Hyperglycemia: Symptoms & Treatment

Glucose level: Sugar rises to >180 mg/dL

Early Symptoms:

- Increased thirst
- Frequent urination
- Dry mouth
- Blurred vision
- Fatigue or drowsiness
- Headache
- Increased hunger

Severe Symptoms:

- Fruity-smelling breath
- Nausea or vomiting
- Shortness of breath
- Confusion or disorientation
- Flushed, hot, dry skin
- Rapid heartbeat
- Abdominal pain

Treatment:

- Check BG via monitoring device to confirm
- Increase intake of water and SF fluids
- Send to nurse – may help identify reason for hyperglycemia & initiate protocol based on IHP

HYPERGLICEMIA SYMPTOMS



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In Summary

As educators, administrators, and support staff, you have an important role in fostering a safe, healthy & inclusive community for your students at your school. You are often the first line of defense when it comes to the safety of your students.

- **Know the symptoms of low & high blood sugar**
- **Know your student's treatment plan & have the IHP accessible and the tools for treating lows & highs accessible as well**
- **Be aware of your student's specific needs – this will help with connecting with them throughout the year.**
- **Stay connected with your nurse – they are an invaluable resource!**

Questions



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THANK YOU!

If you are interested in the speaking points for this presentation, please contact the Diabetes Foundation.



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