This is general information and not specific medical advice for you, your child, or loved one. Always consult your doctor or other healthcare provider if you have any questions or concerns. Call 911 or go to the nearest emergency department in case of an urgent concern or emergency.

Diabetes Education
Train the Trainer Series:
Diabetes 101

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Diabetes Education
Children's Healthcare of Atlanta

Reflection

As you go through this video, please pause to review the content and think about how you would apply this information to your school setting.

Introduction

The audience for this video is Georgia school nurses who care for students with a diabetes diagnosis.

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Diabetes 101

Definition of Diabetes

Diabetes Management Basics

Diabetes Management at School

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Definition of Diabetes

Diabetes Statistics

The Numbers

- More than 29.1 million people (9.3%) have diabetes:
  - Diagnosed with diabetes - 21 million
  - Undiagnosed but have diabetes - 8.1 million
  - Undiagnosed but have Pre-diabetes - 86.0 million

Children

- 1 in 86,300 children have diabetes
- 1 in 400-600 children have Type 1
- 2 million adolescent ages 12-19 have pre-diabetes*
- 1 in 3 children born today will probably develop diabetes*
- **43% of GA 3rd graders are overweight or obese. (59% of adults)**
- CDC: 8-45% of new onsets are likely Type 2

**Type 2 Diabetes*

Definition of Diabetes

Diabetes is a metabolic disorder which is:

- Chronic and progressive
- Characterized by abnormal metabolism of carbohydrates, proteins and fats
- Associated with long term damage to organs such as the eyes, kidneys, nerves, heart and blood vessels

Definition of Diabetes

Glucose builds up in the blood because:

- Too little insulin is made
- Cells cannot use the insulin
- The liver releases too much glucose
  - **High blood sugar (hyperglycemia) occurs because the release of glucose by the liver and uptake by the cells no longer matches**

Why does this happen?

Normal Metabolism (Liver)

The Liver

Maintains blood glucose between meals

- Glycogenolysis (breakdown of glycogen to glucose)
- Gluconeogenesis (glucose made from protein and fat)
- Turns off after a meal due to glucagon suppression

Releases glucose in response to glucagon when blood glucose is low

The liver can release this glucose into our bloodstream in response to

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Normal Metabolism (Insulin)

Insulin is:

- A hormone made by beta cells in the pancreas
- Carries glucose from our blood to our cells to be used as energy; to the liver for storage
- Prevents the release of liver glycogen and fat breakdown
  - Stores excess calories as fat

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Normal Metabolism -Other Hormones

Glucagon – Secreted by the pancreas in response to low blood sugar or stress; stimulates glucose release by the liver which increase blood sugar

Incretins (Intestinal Hormones) – GIP and GLP-1* are released following a meal and increase beta cells sensitivity to glucose

Peptide-YY – reduces food intake

Endocannabinoid system – increases food intake

**gastric inhibitory peptide (GIP) and glucagon-like peptide-1(GLP-1)*

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Normal Metabolism

Normal Blood Sugar and Hemoglobin A1c

Normal Blood Sugar	60-120 mg/dL
Normal *Hemoglobin A1c	4.5-5.4 percent

*Average blood sugar over 3 months

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Types of Diabetes

Type 1	Autoimmune/Insulin dependent diabetes
Type 2	Insulin Resistant/non-insulin dependent
Other	Atypical, CFRD, Steroid Induced, Gestational

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Type 1 Diabetes

Type 1	Autoimmune/Insulin dependent diabetes

Type	Age	Body Type	Insulin Function	Why?	Treatment
1	< 30	Normal wt. Lean Wt. loss at diagnosis	Zero or very little insulin	Gene Autoimmune Environment/virus trigger	Always requires Insulin No cure

About 1 out of every 350 to 500 people younger than 20.

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Type 2 Diabetes

Type 2 — Insulin Resistant/non-insulin dependent

Type	Age	Body Type	Insulin Function	Why?	Treatment
2	> 30	Normal wt. or overweight	Insulin not working… insulin resistance	Heredity (strong family history) Weight gain/overweight Sedentary life style	Diet Exercise Oral meds Insulin

When someone has type 2, they usually have a strong family history of type 2 diabetes.

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Glycemic Control (T1DM)

Plasma BG goal Range		A1c	Rationale
Before Meals	Bedtime/overnight		
90 – 130 mg/dL (5.0 – 7.2 mmol/L)	90 – 150 mg/dL (5.0 – 8.3 mmol/L)	<7.5%	A1c < 7.0% is reasonable if achieved without excess hypoglycemia

- Goals should be *individualized* and lower goals may be reasonable based on benefit-risk assessment
- Blood sugar goals should be modified in children with frequent hypoglycemia unawareness
- Postprandial blood sugar values should be measured when there is a discrepancy between preprandial blood sugar values and A1c levels and to help assess glycemia in people with basal-bolus regimens
- The ADA recommends an A1c of < 7.5% across all pediatric age groups

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Factors Affecting Blood Sugar Levels

Raise Blood Sugar
Food/Carbohydrates
Hormones/Stress/Illness
Medications like steroids

Blood sugar levels will rise and fall during the school day. Why?

Lower Blood Sugar
Insulin
Type 2 medications
Activity/PE/Recess

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Diabetes Management Basics

Balance

Balance between:

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Blood Sugar - Monitors

Features vary:

- Sample size ● Wait Time ● Alternate-site testing capacity
- Communication with other devices – pumps, continuous glucose monitors

Become familiar with the operation of the meter.
There is a 1-800 number on back of meter

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Blood Sugar - Lancing Devices

There are also a number of different lancing devices on the market. Be sure you know how to use the lancing devices your students have and check for adequate supplies.

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Blood Sugar Monitoring Steps

Step by step instructions for standard glucose monitor kit:

1. Gather blood sugar monitoring supplies:
   - Lancing Device
   - Lancet
   - Test strips
   - Meter
2. Student washes and dries hands
3. If assisting student, put on gloves
4. Place test strip in meter
5. Hold the lancing device to side of finger; press button to stick finger
6. Apply blood to the strip according to meter directions
7. Look at blood sugar result on meter and record

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Blood Sugar Monitoring Tips

When testing blood sugar:

TiPS

- Alcohol not recommended for testing
- Sides of fingertips should be used
- Alternative sites can be used as well
  - Not if a low is suspected – always use side of fingertip
- Use control solution when opening a new bottle of strips and if you suspect error in reading
- Check expiration date on the testing strips

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Ketone Testing

Check for ketones:

Injections: when BS >300 or sick

Pump: when BS >250 or sick

The procedure is similar to checking for blood sugar. They will insert the ketone strip into the special meter, prick their finger and place the drop of blood on the test strip.

Note:

Vials of ketone strips expire 6 month after opening

Ketone Testing Procedure

Steps to check for ketones:

1. Gather supplies
2. Child urinates in clean cup

3. Wear gloves, if performed by someone other than student
4. Dip the ketone test strip in cup with urine

5. Shake off excess urine, **wait** 15 seconds
6. Read and record results. Refer to the students DMMP to act on the results.

Checking for Blood Ketones

Special monitors and strips to check for blood ketones:

- Be sure you know how your students will check and that you have all the needed supplies.
- The procedure is similar to checking for blood sugar. They will insert the ketone strip into the special meter, prick their finger and place the drop of blood on the test strip.

Ketones Testing

Blood Ketone Result Ranges		
Reading	Result	Action

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Types of Insulin

3 Insulin Types

mealtime and background

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Bolus Insulin (Mealtime Insulin)

The Bolus insulin's most kids use at mealtime are:

- Rapid acting
- Taken before meals
- Work 5-15 minutes after injecting
- Last 2-5 hours

Apidra, Novolog, Humalog

Some children take their insulin immediately after eating because:

1. Don't know what they are going to eat
2. Don't eat all the carbohydrates
3. Risk of hypoglycemia

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Basal Insulin (Background Insulin)

Things to know about basal insulin:

- Lantus, Basaglar, Levemir, NPH
  - (take at the same time daily)
- Background insulin needed 24 hours per day
- Controls glucose overnight and between meals
- Lantus, Basaglar, or Levemir are usually taken once daily
- NPH maybe taken 1-2 times/day
- Covers moderate amounts of glucose from protein

Basal/Bolus Insulin Regimen

Basal/Bolus insulin is also called MDI (Multiple Daily Injections)

Advantages:

+ Flexible timing, frequency and food quantities

Most children use this insulin dosing methods

Limitations:

- Requires basic math and use a calculator
- Check blood sugars 4 times/day
  - More frequent insulin shots
  - 3-5 shots/day rapid-acting
    - (Apidra/Humalog/Novolog)
  - 1 shot of long acting (Lantus/Levemir)

Snacks optional – no peak

Premixed Insulin

Combination of basal and bolus insulin's:

- NovoLog Mix 70/30, Humalog Mix 75/25
  - Premixed is **cloudy**. Roll the bottle between your hands to mix.
- Requires 2 injections daily at the same time each day
- May still require Rapid Acting Insulin (NovoLog, Humalog) at lunch if a correction is needed
- Requires eating a set amount of carbohydrates during meals
- Requires set times for meals and snacks
- Requires snacks to cover the insulin peaks

Diabetes Management Basics Insulin

Type of insulin	Insulin	When it starts working	When it works the hardest	How long it lasts	When to take it
Rapid-acting	Humalog, Novolog and Apidra	5 to 15 minutes	1 to 2 hours	2 to 5 hours	Right before eating
Short-acting	Regular	30 to 60 minutes	2 to 4 hours	6 to 8 hours	30 minutes before eating
Intermediate-acting	NPH	1 to 2 hours	4 to 8 hours	10 to 20 hours	Varies. Take it at the same time each day
Mixed insulin (Intermediate & Rapid-acting	Novolog 70/30 Humalog 75/25	5 to 15 minutes	1-6 hours	10 to 20 hours	Right before eating. Take it at the same time each day
Long-acting	Lantus, Levemir	1 to 2 hours	No peak	Up to 24 hours	Varies. Take it at the same time each day

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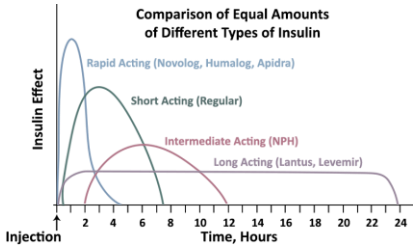
Insulin Action



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Insulin Storage

Opened insulin vials or pens:

- Store at room temperature (36 - 86 degrees Fahrenheit)
- Discard vials after 28-30 days

Unopened vials or pens:

- Store in a refrigerator
- Good until their expiration date
- Do not freeze

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Insulin Injection Tips

Insulin works best when it is injected into a layer of fat under the skin, above the muscle tissue.

- "If you can pinch a half an inch of fat" – for injections
- "If you can pinch an inch of fat" – for most pump sites
- Rotate sites: abdomen, thighs, buttocks, and upper arms
- Inject at least two inches away from navel, scars, and moles
- Student should help choose injection site

Insulin Pens Examples

Needles: http://www.novonordisk.com

Insulin Pens

Other items to know:

- Pen needles come in different lengths
- Insulin pens are either disposable or reusable
- "Air Shot"- dial 2 units, hold pen straight up
- Never leave the pen needle on pen
- Some pens will allow ½ unit dosing

Needles: http://www.novonordisk.com

Insulin Pumps

The five major pump companies are:

- Animas
- Minimed
- Accu-Check
- Tandem
- OmniPod

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How Insulin Pumps Work

Basal Rate:

Continuous delivery of insulin in tiny amounts programmed in units per hour

Meal Bolus:

Insulin for meals or snacks given based on amount of CHO to be eaten before a meal or snack

Correction or Supplemental Bolus:

An extra bolus of insulin given to correct for a high blood sugar

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Insulin Pump Tips

- Keep Insulin pump guide and toll free number with supplies

TiPS

- Request extra supplies to be kept at school:
  - Extra insulin
  - Syringes or insulin pen device to administer insulin if needed
  - Extra pump supplies: infusion sets/pods, inserter, reservoirs, batteries

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Pump Basics

Facts Beneficial to School Nurses

School Nurses will need to know pump basics:

- How to bolus
- How to suspend
- How to check status of the pump and site
- How to review history/confirm a bolus
- How to change batteries

If the pump infusion set or pod is no longer functional, and the student is unable to re-insert their own infusion set/pod, a parent or guardian will be contacted to come to school to re-insert the infusion set or pod.

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Diabetes 101 – Part 1

Definition of Diabetes

Diabetes Management Basics

Diabetes Management at School

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Diabetes Management at School

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Reflection

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Primary Goal

DIABETES MEDICAL MANAGEMENT PLAN (DMMP)

(Diabetes Care Plan for School)

- Signed by health care provider
- Basis for all diabetes care at school
  - Routine care
  - Emergency care

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Additional Goals

Additional goals for the management of diabetes at the school include:

- Early recognition and treatment of hypoglycemia and hyperglycemia
- Having diabetes trained staff available at all times during school day and during any school sponsored events
- Providing children with diabetes equal access to educational and school sponsored opportunities

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Role of the School Nurse

The school nurse is essential in:

- Planning
- Implementing
- Evaluating routine and emergency diabetes care at school

Georgia law allows the training of unlicensed, assistive personnel to deliver routine and emergency diabetes care at school.

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Role of the School Nurse

continued

The licensed professional nurse remains the ideal healthcare provider to:

- Liaison with the family, student, school staff and Endocrinologist to develop Individual Health Plans (IHPs)
- Implement IHPs based on DMMPs
- Provide diabetes training
- Evaluate DMMP effectiveness

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Role of the School Nurse

continued

Other responsibilities of the school nurse are:

- Interpret the Diabetes Medical Management Plan
- Collaborate with school team, student and parents develop appropriate IHP, with routine/emergency care
- Train and evaluate school staff in diabetes care as delegated by the school principal
- Collaborate with school team, student and parents in the development of 504 and/or IEP as needed
- Advocate for the student with diabetes

The role of the school nurse does not end with a meeting at the beginning of the school year. In some districts, the school nurse will be the direct care provider at ... daily basis. In others, she will be coordinat... ng routine and any emergency care prov... ed assistive personnel as delegated by the ... ator.

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Trained Diabetes Caregiver

Tasks at School

- Communication with registered
- Urine or blood ketone testing
- Blood sugar checks
- Early recognition/treatment of hypoglycemia and hyperglycemia
- Be an advocate for the student with diabetes

This list is only a general guideline for diabetes care tasks at school. Many students will be able to handle all or almost all routine diabetes care by themselves. Some students will need school staff to perform or assist with routine diabetes care. It is always a good idea to closely supervise and assist the care of any newly diagnosed patients as needed.

Blood Sugar - Monitoring

School Nurse Role:

- Work with the student, family, and school staff to interpret doctor's orders
- Review the DMMP to determine times for routine daily blood sugar checks
- Determine medically appropriate additional checks
- Plan for urgent checks and necessary treatment

Blood Sugar - Accommodations

Accommodations:

- A student should be permitted to check blood sugar and respond to the results at any time during the school day
- The treatment for a blood sugar number should be pre-determined prior to the beginning of classes
- The student should be allowed to check and treat in the classroom if indicated on the DMMP

Blood Sugar - Management

We will discuss:

- Checking blood sugar
- Equipment
- Timing of blood sugar checks
- Tips for school

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Blood Sugar Monitoring Tips

continued

It is very important to:

- Not over-react to numbers
- Say "in range" or "out of range" vs "good" or "bad"
- Do not ask, "WHAT DID YOU EAT?!"
- Ask "Do you remember taking your insulin this morning?"

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Target Ranges

Target ranges are individualized, but here are some age specific examples:

Blood Sugar Before Meals	
Age	**Target Range**
0-5 years	100-200
6-11 years	80-180
12 years and over	70-150

Note: Students may have a wider target range at school for adequate concentration and performance.

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Target Ranges - School

School Target:

A range at which it is reasonable to expect adequate concentration and performance at school.

- 90 to 180
- 80 to 200

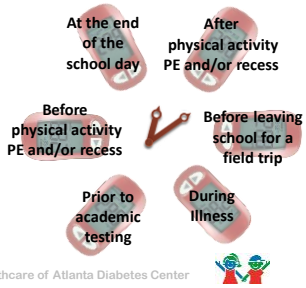
Keeping Blood Sugar In Target Range

General recommendations for blood sugar testing times:

- Before eating meals
- Whenever there are symptoms of hypoglycemia or hyperglycemia
- When feeling sick or "funny" at school

Keeping Blood Sugar In Target Range

Additional time to consider checking blood sugar school:



Keeping Blood Sugar In Target Range

continued

Stay tuned in to the student's daily schedule:

- Collaborate with the family
- Regular blood sugar checks based on DMMP and Student Schedule
- Identify patterns
- Extra checks may be helpful for newly diagnosed students

Hypoglycemia Recognition

The symptoms of hypoglycemia can vary from person to person, and can change over time.

During the early stages of low blood sugar, symptoms may be:

- Sweating
- Shakiness
- Hunger
- Anxiety
- Fatigue
- Pale skin color
- Yawning
- Irritability

Hypoglycemia Recognition

continued

With mild to moderate symptoms of hypoglycemia, it is essential to act promptly in order to avoid a more severe reaction and possible emergency situation.

If untreated, symptoms can become more severe, and can include:

- Difficulty walking
- Extreme weakness
- Dazed or "spaced out" appearance
- Bizarre behavior or personality changes
- Confusion
- Unconsciousness or seizure

Situations to Avoid

Prevention of hypoglycemia at school is essential for the student's well-being and academic performance.

Think Ahead!

Example 1:

- Lunch is delayed

Example 2:

- Physical activity

Remember – exercise can lower blood sugar up to 24 hours!

Hypoglycemia Treatment

FIRST -

Check blood sugar if meter is available.

However, if no meter is available, treat for hypoglycemia on the spot. If untreated, hypoglycemia may progress to more serious events.

NEVER -

Send a student with suspected hypoglycemia anywhere alone.

Hypoglycemia Treatment

continued

If the blood sugar is < 70 and the symptoms are mild, treat with the 'Rule of 15':

- Give 15 grams of fast acting carbohydrates
- Wait 15 minutes and recheck blood sugar
- If the blood sugar is still < 70:
  - Give another 15 grams of fast acting carbohydrates
  - Recheck blood sugar in 15 minutes
  - Repeat up to 3 times – if blood sugar is not in range after this, contact parent

Hypoglycemia Treatment

continued

15 gm Fast Acting Carbs:

4 oz. Fruit Juice	3-4 Glucose Tablets	1 Tbsp. sugar	1 Tbsp. Honey	4 oz. Regular Soda (Not Diet)	1 Tube of Glucose Gel	1 Tube of Cake-Mate Gel

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Unconscious or Seizure

If the child is having a seizure or is unconscious, it is better to use Glucagon in these situations.

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Glucagon Emergency Kit

Contents:

- 1 mg of freeze-dried glucagon (Vial)
- 1 ml of water for reconstitution (Syringe)

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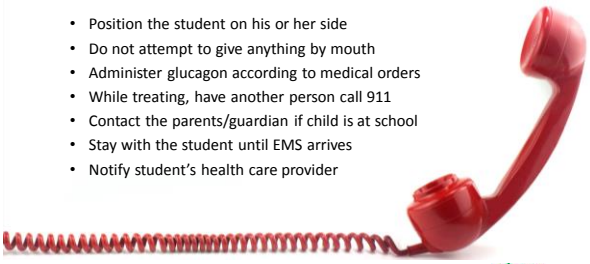
Use of Glucagon Emergency Kit

- Position the student on his or her side
- Do not attempt to give anything by mouth
- Administer glucagon according to medical orders
- While treating, have another person call 911
- Contact the parents/guardian if child is at school
- Stay with the student until EMS arrives
- Notify student's health care provider



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Glucagon Emergency Kit

Special Considerations:

- It may take 10-20 minutes for the student to regain consciousness
- Nausea or vomiting may occur
- Check blood sugar
- Give sips of juice or soda when alert enough to swallow
- After 10 minutes or so, encourage solid foods

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Hypoglycemic Unawareness

Blood sugar below 70 without symptoms is *Hypoglycemic Unawareness*

Hypoglycemia unawareness can occur in those who:

- Frequently have hypoglycemia episodes
- Have had diabetes for a long time
- Are young children and/or are newly diagnosed and may not have learned to recognize the symptoms

These individuals may no longer produce the adrenaline response that is responsible for the early warning signs and symptoms of hypoglycemia. When a young child or newly diagnosed child experiences hypoglycemia, it is very important to acknowledge their symptoms and remind them to notify someone if they feel them again. It is not uncommon for the first episodes of hypoglycemia to occur at school after being diagnosed.

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Hyperglycemia

Symptoms

- Excessive urination (polyuria)
- Excessive thirst (polydipsia)
- Excessive hunger (polyphagia)
- Weight Loss
- Fatigue
- Blurry vision

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Hyperglycemia: Behavioral/Cognitive Changes

The effect may include behavioral or cognitive changes such as:

- Decreased interests
- Impaired short term memory
- Decreased attention span
- Irritable or temper flare up
- Overall decreased school performance

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Hyperglycemia: Possible Causes

Possible Causes

- Late, missed or too little insulin
- Insulin pump malfunction/insertion set out
- Food intake exceeds insulin coverage
- Illness or injury
- Stress
- Medications
- Other hormones, such as menstrual period

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Hyperglycemia Management at School

Always refer to the student's orders (DMMP) first.

- **Insulin** - Corrective dose of rapid or short acting insulin
- **Hydrate** - Water, non-sugar drinks or electrolyte fluids
- **Monitor** - Check blood sugar and urine ketones



Hyperglycemia Management at School

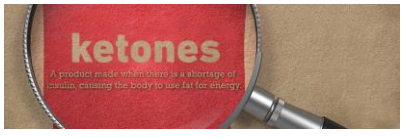
Communicate

Contact parents if the child is ill, vomiting, lethargic, having trouble breathing or has moderate to large ketones.

Contact doctor if unable to reach parent, or if you feel parent is unable, or unwilling to implement safe care and physician communication.

EMS may be indicated if unable to reach parent or doctor, or if severe symptoms persist (difficulty breathing, etc.).

Hyperglycemia Management: Ketones



Ketones will be passed into the urine and can build up in the blood and body tissues. The longer ketones are allowed to build up, the more likely they will result in acidosis.

- There is not enough insulin
- The body needs more energy
- Stress hormones
- Glucose is not available in the blood

- DKA – Diabetic Ketoacidosis
- Diabetic Ketoacidosis can progress to an emergency situation

Diabetic Ketoacidosis (DKA)

Two things to remember about blood sugar management are:

1. Hyperglycemia **is NOT** considered an emergency
2. Hyperglycemia **IS** an emergency if symptoms of Diabetic Ketoacidosis develop

Diabetic Ketoacidosis: Signs & Symptoms

- Hyperglycemia with moderate to large ketones
- Vomiting
- Stomach pain
- Drowsiness
- Sweet, fruity odor to the breath
- Thirst and frequent urination
- Deep and/or labored breathing (call 911)
- If not treated, can result in coma

Diabetic Ketoacidosis: Causes

Severe insulin deficiency:

- Missed doses
- Illness/severe stress
- Pump malfunction:

In pump cases: **Diabetic Ketoacidosis may suddenly occur**

In non-pump cases: **Diabetic Ketoacidosis does not occur suddenly**

- Symptoms may gradually occur over days or weeks with continued untreated hyperglycemia.

Diabetic Ketoacidosis: Special Concerns

Hyperglycemia is more urgent for students on pumps.

- Diabetic Ketoacidosis can begin to occur within 2-3 hours
- Indicates a pump malfunction or disconnect

KISS PROTOCOL

- **K**etones must be checked anytime sugar is > 250
- **I**nject insulin with a syringe
- **S**et and Site change
- **S**ugar checks and ketone checks

"WHEN IN DOUBT, CHANGE YOUR SET OUT!"

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Treating Hyperglycemia

The steps for treating hyperglycemia with a pump:

1. Make sure the pump and tubing are working.
2. If blood sugar > 250, check for ketones.
3. If ketones are present, contact the Endocrinologist.
4. At school, always follow the DMMP orders and communicate with the parent.

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Treating Hyperglycemia

continued

If Ketones are present:

Have the student drink water and consult the DMMP.	Continue to test blood sugar and ketones every hour until blood sugar is in target range and no ketones.	Continue to take correction insulin injections (as directed by your Endocrinologist) until your blood sugar reaches target range.	If your blood sugar is less than 200 and ketones are present, additional insulin is usually required.	Contact the student's parent and/or healthcare provider according to the DMMP for specific guidelines.

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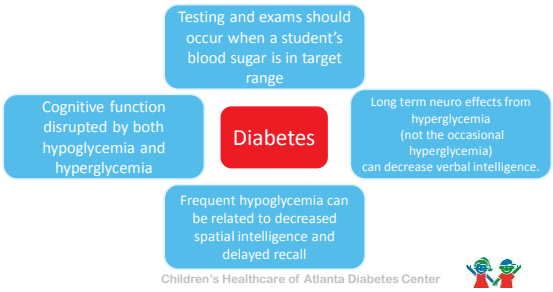
Possible Academic Concerns with Diabetes



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Classroom Accommodations with Diabetes

Examples of typical classroom accommodations:

- Access to water and bathroom at all times

- Blood sugar testing and treatment may be allowed in the classroom if age appropriate and approved in DMMP
- Access to snacks at all times

- No academic or other penalty for medical absences related to diabetes

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Classroom Accommodations with Diabetes continued

Accommodations specific to standardized testing:

- Check blood sugar before and during testing, if specified in their plan
- Have access to food, drink, and restroom during the testing period
- Be excused from testing with an opportunity for retake later, should a serious high or low blood sugar episode occur

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Classroom Accommodations with Diabetes
continued

- Full participation in all academic and extracurricular activities
- System in place to provide accommodations during standardized testing
- Never send a student who is symptomatic with actual or suspected hypoglycemia or hyperglycemia anywhere alone
- Adequately trained staff available to student at all times, including field trips and other school-sponsored events


Age Specific Care at School (3-5)

Ages 3-5

- Cannot think abstractly
- Does not understand "getting shots is to keep you healthy"
- Needs constant reinforcement that diabetes care (injections and finger sticks) is not a punishment

Diabetes Responsibilities

- School staff will need to perform all tasks
- Child may gradually learn to cooperate
- May be inconsistent with food choices – insulin may need to be given after meals

Age Specific Care at School (6-7)

Ages 6-7

- Cannot think abstractly
- Self centered
- Home responsibilities may increase as they begin to read

Diabetes Responsibilities

- School staff will need to perform and supervise all tasks
- Child may slowly learn to cooperate and begin to make some choices; select finger for a blood test, wash hands, etc.
- May begin to recognize signs of hypoglycemia

Age Specific Care at School (8-12)

Ages 8-12

- Thinks more concretely
- More logical and understanding
- More curious, social and responsible

Diabetes Responsibilities

- Can learn to do blood sugars, begin initial carbohydrate counting, administer insulin with supervision
- Can recognize and treat hypoglycemia
- Can remember snacks and make food choices, but may need reminders or alarms

Age Specific Care at School (13-18)

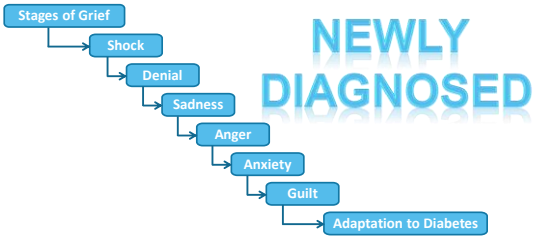
Ages 13-18

- More independent, but behavior varies
- Able to think abstractly
- Body image and friends more important
- Experimentation with alcohol and street drugs

Diabetes Responsibilities

- Capable of doing majority of blood sugar tests, carbohydrate counting, insulin, pump tasks, but require supervision with dosage
- Gradually understand good blood sugar control to prevent complications

Psychological Impact of Diabetes



Psychological Impact of Diabetes continued

The First Difficult Year…

"Adjustment to a diagnosis of diabetes takes 6–9 months for children and 9–12 months for parents. Diabetes control and usual family functioning are difficult during this period."

Diabetes Spectrum, January 2003 vol. 16 no. 1 7-12

Diabetes is 24/7

Diabetes never takes a vacation…

- 5 or more injections a day
- 5 or more sticks for blood sugar a day
- Counting EVERY carbohydrate eaten
- Supplies/Snacks
- Constant juggling of food, insulin, exercise, blood sugar numbers to stay in balance

Summary

- **Defined Diabetes**
- **Explored the basics of diabetes management**
- **Covered the diabetes management at school**

Diabetes Train the Trainer Series

For more information visit:
www.choa.org/medical-services/diabetes

- ☑ Diabetes 101
- ☐ Carbohydrate Counting
- ☐ Physical Activity
- ☐ The Diabetes Medical Management Plan
- ☐ Taking Type 1 Diabetes to School

Resources

- http://www.choa.org/Childrens-Hospital-Services/Diabetes/Diabetes-Resources
- Safe at School: http://www.diabetes.org
- Kaufman, F. (2002). Diabetes at school. *Clinical Diabetes, 20, 91-94.*
- *Diabetes Spectrum January 2003 vol. 16 no. 1 7-12*
- *Diabetes Care 32:1001–1006, 2009*
- *Pediatric Diabetes Volume 11, Issue 2, pages 134–141, March 2012*
- *P.E.D.S Pediatric Education for Diabetes in Schools National Version*
- Juvenile Diabetes Research Foundation: http://www.jdrf.org
- National Institute of Health, Helping the Student with Diabetes Succeed, a Guide for School Personnel: http://nih.gov/
- College Board: http://www.collegeboard.com/ssd/student/eligible.html
- School Advisory Toolkit: http://www.jdrf.org
- Chase, Peter. (2012). Understanding Diabetes, 11th Ed.

Children's Healthcare of Atlanta

For more information on any of the Trainer the Trainer topics:

- Visit us at: www.choa.org
- Call us at: (404) 785-KIDS

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