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.

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Diabetes Education
Train the Trainer Series: The Diabetes Medical Management Plan

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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
This education video focuses on the Diabetes Medical Management Plan (DMMP) that is used by students in the school setting.

This video is intended for:

- Georgia School nurses who provide care for students with Type 1 or Type 2 Diabetes
- Parents and guardians of children with Type 1 or Type 2 Diabetes
Effective Diabetes Management is crucial:

1. For student’s immediate safety
2. For student’s long-term health
3. To ensure that they are ready to learn and fully participate in all school activities
4. To minimize the possibility that diabetes-related emergencies will disrupt the classroom

Diabetes Medical Management Plan

Children’s Healthcare of Atlanta Diabetes Center
Blood Glucose (BG) Monitoring

The first key area addressed is Blood Sugar Monitoring.

- Before meals
- Midmorning
- As needed for suspected low/high BG
- Mid-afternoon
- 2 hours after correction
- Before dismissal
Insulin Administration

**Insulin Administration**

**Basal**
- Long or intermediate acting
- Once or twice a day
- Control BS levels overnight and between meals

**Bolus**
- Rapid acting
- Cover the carbohydrate in a meal or snack
- Lower BS levels that are above target

What basal insulin is the child taking?

Children’s Healthcare of Atlanta Diabetes Center
### Insulin Administration

#### Insulin Administration

**INSULIN ADMINISTRATION:**

**MEAL INSULIN:** (Best if given right before eating. For small children, can give within 15-30 minutes of the first bite of food or right after meal)

<table>
<thead>
<tr>
<th>Break Fast:</th>
<th>1 unit per</th>
<th>grams carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch:</td>
<td>1 unit per</td>
<td>grams carbohydrate</td>
</tr>
</tbody>
</table>

**Fixed Dose per meal:**

<table>
<thead>
<tr>
<th>Breakfast:</th>
<th>Give</th>
<th>units/Eat</th>
<th>grams of carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch:</td>
<td>Give</td>
<td>units/Eat</td>
<td>grams of carbohydrate</td>
</tr>
</tbody>
</table>

**Insurance formularies often change moving from one brand of bolus insulin to another.**

- *(BG - ___) + ___ = extra units insulin to provide*
- *(BG from ___ to ___ = ___ units)*
- *(BG from ___ to ___ = ___ units)*
- *(BG from ___ to ___ = ___ units)*

**SNACK:**

- A snack will be provided each day at ___
- Carbohydrate coverage only for snack (No BG check required):
  - *(No coverage for snack)*
  - *(1 unit per ___ grams of carb)*
  - *(Fixed snack dose: Give ___ units/Eat ___ grams of carb)*

**PARENTAL AUTHORIZATION to Adjust Insulin Dose:**

- **YES**
  - Parents/guardians are authorized to increase or decrease insulin-to-carb ratio within the following range:
    - *(1 unit per prescribed grams of carbohydrate, ___/___ grams of carbohydrate)*

- **NO**
  - Parents/guardians are authorized to increase or decrease correction dose with the following range:
    - *(+/-___ units of insulin)*

- **YES**
  - Parents/guardians are authorized to increase or decrease fixed insulin dose with the following range:
    - *(+/-___ units of insulin)*

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### Meal Insulin

**INSULIN ADMINISTRATION:**

**MEAL INSULIN:** (Best if given right before eating. For small children, can give within 15-30 minutes of the first bite of food or right after meal)

<table>
<thead>
<tr>
<th>Breakfast:</th>
<th>1 unit per</th>
<th>grams carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch:</td>
<td>1 unit per</td>
<td>grams carbohydrate</td>
</tr>
</tbody>
</table>

**Insulin to Carbohydrate Ratio:**

<table>
<thead>
<tr>
<th>Breakfast:</th>
<th>Give</th>
<th>units/Eat</th>
<th>grams of carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch:</td>
<td>Give</td>
<td>units/Eat</td>
<td>grams of carbohydrate</td>
</tr>
</tbody>
</table>

**CORRECTION INSULIN:** (For high blood sugar. Add before MEAL INSULIN to CORRECTION INSULIN for TOTAL INSULIN dose.)

- **Use the following correction formula**
  - *(BG - ___) + ___ = extra units insulin to provide*

- **Sliding Scale:**
  - *(BG from ___ to ___ = ___ units)*
  - *(BG from ___ to ___ = ___ units)*
  - *(BG from ___ to ___ = ___ units)*
  - *(BG from ___ to ___ = ___ units)*

- **SNACK:**
  - A snack will be provided each day at ___
  - Carbohydrate coverage only for snack (No BG check required):
    - *(No coverage for snack)*
    - *(1 unit per ___ grams of carb)*
    - *(Fixed snack dose: Give ___ units/Eat ___ grams of carb)*

**PARENTAL AUTHORIZATION to Adjust Insulin Dose:**

- **YES**
  - Parents/guardians are authorized to increase or decrease insulin-to-carb ratio within the following range:
    - *(1 unit per prescribed grams of carbohydrate, ___/___ grams of carbohydrate)*

- **NO**
  - Parents/guardians are authorized to increase or decrease correction dose with the following range:
    - *(+/-___ units of insulin)*

- **YES**
  - Parents/guardians are authorized to increase or decrease fixed insulin dose with the following range:
    - *(+/-___ units of insulin)*
Insulin Administration

Correction Insulin

**INSULIN ADMINISTRATION:**
- Insulin delivery system: 🎈 Syringe or Pen or Pump
- Insulin type: 🎈 Humalog or Novolog or Apidra

**MEAL INSULIN:** (Best if given right before eating. For small children, can give within 15-30 minutes of the first bite of food or right after meal)
- **Insulin to Carbohydrate Ratio:**
  - Breakfast: 1 unit per _______ grams carbohydrate
  - Lunch: 1 unit per _______ grams carbohydrate
- **Fixed Dose per meal:**
  - Breakfast: Give ___ units Eat ___ grams of carbohydrate
  - Lunch: Give ___ units Eat ___ grams of carbohydrate

**CORRECTION INSULIN:** (For high blood sugar. Add before MEAL INSULIN to CORRECTION INSULIN for TOTAL INSULIN dose.)

- Use the following correction formula
  - For pre-meal blood sugar over ______
  - \((BG \cdot \_\_) \cdot \_\_ = \text{extra units insulin to provide}\)

- **Sliding Scale:**
  - BG from ___ to ___ = ___ units
  - BG from ___ to ___ = ___ units
  - BG from ___ to ___ = ___ units

**SNACK:**
- A snack will be provided each day at: ______
- Carbohydrate coverage only for snack (No BG check required):
- No coverage for snack
- 1 unit per ______ grams of carb
- Fixed snack dose: Give ___ units Eat ___ grams of carb

**PARENTAL AUTHORIZATION to Adjust Insulin Dose:**
- **YES** ☐ Parent/guardians are authorized to increase or decrease insulin-to-carb ratio within the following range:
  - 1 unit per prescribed grams of carbohydrate, +/- ______ grams of carbohydrate
- **YES** ☐ Parent/guardians are authorized to increase or decrease correction dose with the following range: +/- ______ units of insulin
- **YES** ☐ Parent/guardians are authorized to increase or decrease fixed insulin dose with the following range: +/- ______ units of insulin

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**Carbohydrate Counting**

\[ \text{Food Insulin units} + \text{Correction Insulin units} = \text{Total Meal Dose} \]

\[ 8 \text{ units insulin} \]

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**Diabetes Train the Trainer Series**
- Diabetes 101
- Carbohydrate Counting
- Physical Activity
- The Diabetes Medical Management Plan
- Taking Type 1 Diabetes to School

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Children’s Healthcare of Atlanta Diabetes Center
Insulin Administration

Snack

**INSULIN ADMINISTRATION:**

- Insulin delivery system: ☐ Syringe or ☐ Pen or ☐ Pump  Insulin type: ☐ Humalog or ☐ Novolog or ☐ Apidra

**MEAL INSULIN:** (Best if given right before eating. For small children, can give within 15-30 minutes of the first bite of food or right after meal)

- Breakfast: ☐ 1 unit per ________ grams carbohydrate  Fixed Dose per meal:
- Lunch: ☐ 1 unit per ________ grams carbohydrate  Breakfast: Give ___ units/Eat ___ grams of carbohydrate

**CORRECTION INSULIN:** (For high blood sugar. Add before MEAL INSULIN to CORRECTION INSULIN for TOTAL INSULIN dose.)

- Use the following correction formula
  - For pre-meal blood sugar over ________
  - Sliding Scale:
    - BG from ___ to ___ = _____ units
    - BG from ___ to ___ = _____ units
    - BG from ___ to ___ = _____ units
    - BG from ___ to ___ = _____ units
    - BG > ___ = _____ units

**SNACK:** ☐ A snack will be provided each day at: ☐ No coverage for snack

- Carbohydrate coverage only for snack (No BG check required)
- 1 unit per _____ grams of carbohydrate
- Fixed snack dose: Give ___ units/Eat ___ grams of carbohydrate

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**Parental Authorization**

- Parents/guardians are authorized to increase or decrease insulin-to-carb ratio within the following range: +_______ grams of carbohydrate
- Fixed Dose per meal:

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**Any permanent changes to dosing orders, an updated DMMP signed by the provider, must be obtained.**
Low Blood Glucose

Low blood glucose or hypoglycemia

MANAGEMENT OF LOW BLOOD GLUCOSE:

MILD low sugar: Alert and cooperative student (BG below)

- Never leave student alone
- Give 15 grams glucose; recheck in 15 minutes
- If BG remains below 70, retreat and recheck in 15 minutes
- Notify parent if not resolved
- If no meal is scheduled in the next hour, provide an additional snack with carbohydrate, fat, protein.

Never give insulin for carbohydrates taken to treat hypoglycemia.

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

Children’s Healthcare of Atlanta Diabetes Center
Low Blood Glucose

For more detailed information on hypoglycemia

Diabetes Train the Trainer Series

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

High Blood Glucose

Treatment for hyperglycemia (high blood sugar)

MANAGEMENT OF HIGH BLOOD GLUCOSE: (above _______ mg/dl)

- Sugar-free fluids/frequent bathroom privileges.
- If BG is greater than 300 and it’s been 2 hours since last dose, give HALF FULL correction formula noted above.
- If BG is greater than 300 and it’s been 4 hours since last dose, give FULL correction formula noted above.
- If BG is greater than ______, check for ketones. Notify parent if ketones are present.
- Child should be allowed to stay in school unless vomiting with moderate or large ketones present.

It is recommended that the student with moderate or large ketones or with symptoms of illness be released from school to be monitored closely by parent or guardian.
Physical Activity

We all should exercise daily. It makes everything in our body work better including insulin.

MANAGEMENT DURING PHYSICAL ACTIVITY:
Student shall have easy access to fast-acting carbohydrates, snacks, and blood glucose monitoring equipment during activities. Child should NOT exercise if blood glucose levels are below 50 mg/dl or above 300 mg/dl and urine contains moderate or large ketones.
- Check blood sugar right before physical education to determine need for additional snack.
- If BG is less than _____ mg/dl, eat 15-45 grams carbohydrate before, depending on intensity and length of exercise.
- Student may disconnect insulin pump for 1 hour or decrease basal rate by ______.
- For new activities: Check blood sugar before and after exercise only until a pattern for management is established.
- A snack is required prior to participation in physical education.

Emergency Notification

Notify parents of the following conditions:

NOTIFY PARENT of the following conditions: (If unable to reach parent, call diabetes provider office).

- a. Loss of consciousness or seizure (convulsion) immediately after calling 911 and administering glucagon.
- b. Blood sugars in excess of 300 mg/dl, when ketones present.
- c. Abdominal pain, nausea/vomiting, fever, diarrhea, altered breathing, altered level of consciousness.
Insulin Pump

Special Management

SPECIAL MANAGEMENT OF INSULIN PUMP:

- Contact Parent in event of:
  - Pump alarms or malfunctions
  - Detachment of dressing / infusion set out of place
  - Leakage of insulin
  - Student must give insulin injection
  - Student has to change site
  - Soreness or redness at site
  - Corrective measures do not return blood glucose to target range within _____ hrs.

- Parents will provide extra supplies including infusion sets, reservoirs, batteries, pump insulin, and syringes.

Management issues regarding the insulin pump:

- The computerized, bolus wizard or bolus calculator features in the pump should be used for insulin boluses.
- The pump settings should be reviewed for accuracy against the prescribed dosing noted in the student’s diabetes management plan.
- At minimum, you must be able to turn the pump off or know how to disconnect with a low blood sugar.

Insulin Pump

You need to know:

- How to bolus
- How to suspend
- How to check status of the pump and site
- How to review the history and confirm a bolus
- How to change batteries
- How to disconnect in case of severe low.

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

Keep the Insulin pump guide (it is online for download) and toll free number with the diabetes supplies.

Remember to request extra pump supplies for school.
Insulin Pump

The KISS protocol for hyperglycemia

- Ketones must be checked anytime sugar is > 250
- Inject insulin with a syringe
- Set and Site change
- Sugar checks and ketone checks

Continuous Glucose Monitor (CGM)

What is a CGM?
A CGM is a wearable device that tracks your blood sugar 24 hours a day and notifies you of highs and lows.

Three Part System:
- The Sensor is inserted underneath the skin
- The Transmitter fits onto the sensor and sends data wirelessly to a display device
- And The display device is where you can actually see the glucose activity. This could be a separate monitor, a cell phone or an insulin pump
Continuous Glucose Monitor (CGM)

Does CGM replace finger stick testing?

• Calibration is required daily
  • Typically two blood sugar checks are needed
• There is a sensor approved for dosing but many sensors continue to require a traditional finger stick
• Use your blood sugar meter if symptoms do not match the sensor reading

Special management of students using a CGM

Continuous Glucose Monitor (CGM):

- Yes
- No

Alarms set for:

- Low at _____
- High at _____

Respond to CGM alarms by checking blood sugar with a blood sugar meter. Treat using Management discussed on plan.
Assistance

This student requires assistance by the School Nurse or Trained Diabetes Personnel with the following aspects of diabetes management:

- Monitor and record blood glucose levels
- Respond to elevated or low blood glucose levels
- Administer glucagon when required
- Calculate and give insulin injections
- Administer oral medication
- Monitor blood or urine ketones
- Follow instructions regarding meals and snacks
- Follow instructions as related to physical activity
- Respond to CGM alarms by checking blood glucose with glucose meter. Treat using Management plan on page 1.
- Insulin pump management: administer insulin, inspect infusion site, contact parent for problems
- Provide other specified assistance:

Self-Care Management

This student may independently perform the following aspects of diabetes management:

- Monitor blood glucose:
  - in the classroom
  - in the designated clinic office
  - in any area of school and at any school related event
- Monitor urine or blood ketones
- Calculate and give own injections
- Calculate and give own injections with supervision
- Treat hypoglycemia (low blood sugar)
- Treat hyperglycemia (elevated blood sugar)
- Carry supplies for blood glucose monitoring
- Carry supplies for insulin administration
- Determine own snack/meal content
- Manage insulin pump
- Replace insulin pump infusion set
- Manage CGM

The specific tasks that a student has been authorized to perform independently will be addressed in this part of the management plan.

Self-care management is the goal.

Self-care must be authorized by the DMMP.
Self-Care Management

Georgia Department of Education guidelines

“A student with diabetes shall be permitted to perform blood glucose checks, administer insulin through the insulin delivery system the student uses, treat hypoglycemia and hyperglycemia, and otherwise attend to the monitoring and treatment of his or her diabetes in the classroom, in any area of the school or school grounds, and at any school related activity, and he or she shall be permitted to possess on his or her person at all times all necessary supplies and equipment to perform such monitoring and treatment functions.”

Location of Supplies

Supplies and Equipment

LOCATION OF SUPPLIES/EQUIPMENT: (Parent will provide and restock all supplies, snacks and low blood sugar treatment supplies.)
This section will be completed by school personnel and parent:

<table>
<thead>
<tr>
<th>Supplies</th>
<th>Clinic room</th>
<th>With student</th>
<th>Clinic room</th>
<th>With student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood glucose equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulin administration supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketone supplies</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Glucagon kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose gel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juice / low blood glucose snacks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All school support staff are responsible for knowing locations of supplies!
Signatures

I. (Parent/Guardian) __________________________ understand that all treatments and procedures may be performed by the student and/or Trained Diabetes Personnel within the school, or by EMS in the event of loss of consciousness or seizure. I also understand that the school is not responsible for damage, loss of equipment, or expenses utilized in these treatments and procedures. I give permission for the school and Trained Diabetes Personnel to contact my child’s diabetes provider for guidance and recommendations. I have reviewed this information form and agree with the indicated information. This document serves as the Diabetes Medical Management Plan as specified by Georgia state law.

PARENT/GUARDIAN SIGNATURE: ___________________________ DATE: __________

SCHOOL NURSE SIGNATURE: ___________________________ DATE: __________

Dr. Jones MD

This form is a PHYSICIAN ORDER.

SIGNATURE of AUTHORIZED PRESCRIBER: ___________________________ DATE: __________

Authorized Prescriber: MD, NP, PA

Name of Authorized Prescriber: ___________________________

Address: ___________________________

Phone: ___________________________

Summary

A Diabetes Medical Management Plan (DMMP)

- Outlines dosage, delivery system, and schedule for blood glucose monitoring
- Insulin and medication administration, glucagon administration, ketone monitoring
- Meals and snacks
- Physical activity
- Student’s usual symptoms of hypoglycemia and hyperglycemia, and their recognition and treatment
- Emergency contact information
- Addresses the student’s level of self-care and management
- Submitted to the school annually
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

- Children with Diabetes http://www.childrenwithdiabetes.com/d_0q_000.htm
- College Board http://www.collegeboard.com/ssd/student/eligible.html
- College Diabetes Network https://collegediabetesnetwork.org/
- School Advisory Toolkit (JDRF) http://www.jdrf.org/wp-content/docs/JDRF_School_Advisory_Toolkit.pdf
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