

## DIABETES CARE FOR SCHOOL – MEDICAL MANAGEMENT PLAN

**Patient Diagnosis:**

- Type 1 Diabetes       Other (Steroid Induced or CFRD)  
 Type 2 Diabetes with Insulin     Type 2 Diabetes Without Insulin

Most recent A1C: \_\_\_\_\_

Date: \_\_\_\_\_

### Blood Glucose Monitoring

Student may test independently:  Yes  No  Yes with Supervision

Continuous Glucose Monitor:  Yes  No  N/A \*See attached CGM guidelines

**CMG/Glucose check times:**

- |   |   |
|---|---|
| <input type="checkbox"/> Before meals   | <input type="checkbox"/> See glucose number to dose   |
| <input type="checkbox"/> Two hours after insulin dosing   | <input type="checkbox"/> Suspected hypoglycemia / hyperglycemia                             |
| <input type="checkbox"/> Before PE  | <input type="checkbox"/> Check prior to after school activity or patient getting on the bus |
| <input type="checkbox"/> Enter any finger stick into the pump and/or enter any meal CGM reading into the pump |   |
- Medication**

Student may self-manage all aspects of diabetes care at school:  Yes  No

Guardian authorized to adjust carbohydrate ratio, correction bolus, and basal rate/long-acting insulin by +/- 10%

Insulin Type:  Novolog  Humalog  Apidra  Fiasp      Delivery Method:  Insulin Pump  Injection  
 Pump Type: \_\_\_\_\_

Meal / carbohydrate bolus: \_\_\_\_\_ Units of insulin per \_\_\_\_\_ grams of carbohydrate at Breakfast

Meal / carbohydrate bolus: \_\_\_\_\_ Units of insulin per \_\_\_\_\_ grams of carbohydrate at Lunch

Administer at:  Meals  Snacks (if over \_\_\_\_\_ grams carbohydrate)

Correction bolus: \_\_\_\_\_ Units of insulin for every \_\_\_\_\_ mg/dl above \_\_\_\_\_ mg/dl

Administer at:  Meals  Snacks

### IF GLUCOMETER READS "HI", USE 600 mg/dl FOR CORRECTION CALCULATION

Example of meal time dosing of insulin. Please note students' ratios may not be the same as the example.

Meal bolus: 1 unit per 15 gram carbohydrates

Correction bolus: 1 unit for every 50 mg/dl above 150mg/dl

Carbs eaten: 72

72/15 = 4.8 units

Blood glucose: 245

245 - 150 = 95/50 = 1.9 units

Add together and round:

4.8 + 1.9 = 6.7 units → Round to nearest whole number → give 7 units

**\*The American Diabetes Association recommends pre-meal dosing for insulin to achieve better A1c results.**

**The school nurse may use his or her discretion in conjunction with the family.**

Basal insulin:  N/A  Lantus/Basaglar/Levemir/Tresiba \_\_\_\_\_ units:  at home  at school (BF/Lunch)

Insulin Pump: MN \_\_\_\_\_ units/hour  
 \_\_\_\_\_ am/pm \_\_\_\_\_ units/hour  
 \_\_\_\_\_ am/pm \_\_\_\_\_ units/hour

Student may give a correction \_\_\_\_\_ hours after last dose of insulin  
 Pump site may be changed if dislodged or malfunction is suspected  
 (continued hyperglycemia after 2 attempts to correct blood glucose)

Metformin  Yes  No Dose \_\_\_\_\_ mg  Daily  BID

### Hypoglycemia (blood glucose < 70 mg / dl)

If hypoglycemia is suspected, the student should be escorted for treatment and never left alone

Hypoglycemia (low blood sugar) is a potential medical emergency at school. Causes of hypoglycemia include:

- Getting too much insulin resulting from a miscalculation of insulin dose or miscounted carbohydrate amount
- Increased exercise without eating extra carbohydrates

Signs of hypoglycemia can vary from student to student. It also depends on how low the blood sugar is. The following are general signs of a low blood sugar:

Headache	Weakness	Irritability
Sweating	Confusion	Rapid heart rate
Shakiness/tremors	Personality Changes	

### Treatment of Hypoglycemia

If blood sugar under 70 mg/dl:

1. Give 15 grams fast-acting carb (4 oz juice, 3 glucose tablets, 2 rolls smarties, 1 tube glucose gel)
2. Wait 15 minutes and recheck blood sugar.
3. If blood sugar not above 70 mg/dl, retreat with 15 grams and recheck in 15 minutes.
4. After blood sugar above 70 mg/dl, give small snack (15 grams of carbohydrate plus protein) if it will be more than 30 minutes until a regularly scheduled meal/snack.
5. If low blood sugar occurs at meal time, you must get the blood sugar above 70 mg/dl before giving the meal. No correction dose will be required regardless of the blood sugar reading, but the carbohydrate/meal bolus will need to be given for the meal eaten.

**With severe hypoglycemia the student may become unconscious or have seizures requiring glucagon.**

- Glucagon (intramuscular)    Baqsimi (intranasal)    Gvoke (subcutaneous)

Glucagon is a hormone that stimulates the liver to release stored glucose resulting in a rise in blood sugar level. It is not given if the student is able to eat or drink. The most common side effects from this medication are headaches, nausea, and vomiting. Place patient on their side after administering any form of glucagon. If a student has a hypoglycemic emergency (unconscious or seizing) give glucagon 1<sup>st</sup> before checking blood sugar.

\*\*Glucagon cannot be overdosed\*\*

Give \_\_\_\_\_mg Glucagon via  Intramuscular  Intranasal  Subcutaneous

### Hyperglycemia (high blood sugar)

Hyperglycemia is not necessarily a medical emergency. Causes of hyperglycemia include:

- Not getting enough insulin resulting from a miscalculated insulin dose or carbohydrate count
- Decreased amount of physical activity normally engaged in
- Being ill
- Mental or emotional stress
- Missing an insulin dose

Signs of hyperglycemia can vary from student to student but may include:

Increased Thirst	Headache/Blurry Vision	Inability to Concentrate	Increased hunger
Increased Urination	Behavior Changes	Nausea	

### Treatment of Hyperglycemia

If blood sugar greater than 240 mg/dl:

1. Check urine for ketones.
2. Free access to water or carbohydrate free fluids.
3. Free access to the restroom.
4. Give correction dose of insulin. (If elevated at meal time)
5. Recheck blood sugar in 2 hours. If still elevated, contact parent/guardian for further instructions.

### Ketones

Ketones are the result of the body breaking down fat and muscle for energy when there is not enough insulin on board to facilitate getting glucose from the bloodstream into the cells. Ketone strips should be stored out of direct light and should be replaced after the bottle has been opened for 60 days. Ketones will turn the strip a light pink to a very dark purple. The following rules apply when checking ketones:

1. Ketones should be checked any time the blood sugar is greater than 240mg/dl or if the student is ill or vomiting.
2. If ketones are negative, recheck in 2 hours.
3. If ketones are trace – small, give age in oz of sugar free fluid every hour. Recheck ketones in 3 hours. (example: if student is 12, give 12 oz every hour)
4. If moderate – large ketones are present, contact parent/guardian immediately for further instructions. In general, the student will need to be closely monitored and this is best done one-on-one by the parent/guardian.
5. No exercise is allowed if ketones are present or the blood sugar is greater than 400 mg/dl.

If treating ketones at school, see attached ketone guidelines\*

### Special Considerations

#### School Parties

Students with diabetes may participate in school parties with the following considerations:

- If the carbohydrates in foods eaten at the party are greater than their meal bolus, an extra insulin injection will be required. (See meal/carbohydrate bolus on page 1)
- The student will need a carbohydrate-free drink available

#### Field Trips

It is important to remember students with diabetes must be able to manage their blood sugars while away from the main school campus and possibly away from the school nurse. They will need access to their glucometer, insulin and all related supplies. There must be at least one person attending the field trip who can perform/assist in carbohydrate counting, blood sugar monitoring, insulin injections and glucagon administration, if needed. They must also be able to recognize and treat low and high blood sugars.

#### PE / GYM / Recess

Participation in PE/gym class is allowed for the student with diabetes as long as the blood sugar is less than 400 mg/dl and there are no ketones present in the urine. Exercise uses blood sugar and helps sugar enter the cells to be used as energy. An extra snack may be required for PE/Gym/Recess unless it is something done daily and is already figured into your diabetes management. General guidelines include:

Type of Exercise:

If blood sugar is:

Added snack:

Low to moderate intensity  Short duration of 30 minutes or less (examples: walking, riding bicycle, or outside play)	Less than 100  100 or above	15 gm carbohydrate  An extra snack is not necessary
Moderate intensity  Duration of around 1 hour (examples: tennis, swimming, jogging, riding a bicycle, or dancing)	Less than 100  100 – 180  180 – 240	30 gm carbohydrate before exercise, plus 15 gm for each consecutive hours  15 gm carbohydrate  An extra snack is not necessary

**Additional Instructions:**

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Source Document Name: \_\_\_\_\_ Date of Document: \_\_\_\_\_  
 Transcribed for \_\_\_\_\_ by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

**THIS ORDER IS VALID FOR 1 CALENDAR YEAR FROM DATE OF SIGNATURE.**

**This physician / APRN order has been reviewed and approved by:**

\_\_\_\_\_  
Signature of Physician / APRN

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Physician / APRN

**RELEASE OF INFORMATION FOR SCHOOL AND AC ON FILE**    YES    NO      Date: \_\_\_\_\_

**Appendix Included:**  CGM  Closed Loop System  Sick Day Guidelines  Nutrition

**Arkansas Children's**

**Division of Endocrinology and Diabetes**

1 Children's Way., Slot 512-6, Little Rock, AR 72202-3591 (LR) | 2601 Gene George Blvd. Springdale, AR 72762 (NWA)  
 Telephone: 501-364-1430 Fax: 501-364-6299      Telephone: 479-725-6885 Fax: 479-725-6582

## DIABETES CARE FOR SCHOOL – Continuous Glucose Monitor Appendix

Continuous Glucose Monitor (CGM) is an external device that measures glucose in the interstitial fluid under the skin and transmits blood glucose readings to a secondary receiver. The device updates with a reading every 5 minutes and will give an arrow that indicates the glucose trend. Depending on the manufacturer, the device may be connected to an insulin pump, a cell phone, or a reader. Medical tape may be necessary to insure the integrity of the device as it can be worn from 7 – 14 days depending on the manufacturer.

**CGM Brand:**  Dexcom  Freestyle Libre  Medtronic Guardian  Other \_\_\_\_\_

1. Patient may dose off of CGM reading:  Yes  No

\*Verify CGM reading with a finger stick if the sensor is reading less than \_\_\_\_\_ or greater than \_\_\_\_\_ mg/dL

2. Patient may utilize arrow trends for treatment instructions:  Yes  No

\*Note that foods shown below contain protein to help stabilize the blood sugar. Use fast acting if below 70 mg/dL

3. Patient may use phone as receiver if necessary:  Yes

### TREATMENT OF HYPOGLYCEMIA UTILIZING CGM: SCHOOL AGE

<b>CGM SYMBOLS</b>		<b>&lt;70</b>	<b>70-100</b>	<b>101-120</b>	<b>121-150</b>	
	→	FOLLOW RULE OF 15	OBSERVE	OBSERVE	OBSERVE	→
	↓		Check BG Give 5 GM	OBSERVE	OBSERVE	↓
	↓		Check BG Give 5 GM	Check BG Give 5 GM	OBSERVE	↓
	↓↓		Check BG Give 10 GM	Check BG Give 10 GM	Check BG Give 5 GM	↓↓

\*BG = BLOOD GLUCOSE (BLOOD SUGAR)

\*GM = GRAMS

5 grams of carbohydrates			
2 saltine crackers and 1 oz of deli meat			
2 teaspoons of peanut butter and ½ cup celery sticks			
½ tube of Go-Gurt			
10 grams of carbohydrates			
1 clementine (Halo, Cutie) and 1 string cheese			
3oz of Reduced Fat Milk and ¼ cup Original Cheerios			
¼ cup of blueberries and ¼ cup of slivered almonds			

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1. Patient may dose off of CGM reading:  Yes  No

\*Verify CGM reading with a finger stick if the sensor is reading less than \_\_\_\_\_ or greater than \_\_\_\_\_ mg/dL

2. Patient may utilize arrow trends for treatment instructions:  Yes  No

\*Note that foods shown below contain protein to help stabilize the blood sugar. Use fast acting if below 70 mg/dL

3. Patient may use phone as receiver if necessary:  Yes

### TREATMENT OF HYPOGLYCEMIA UTILIZING CGM: TEENAGE

CGM SYMBOLS		<70	70-100	101-130	
	→	FOLLOW RULE OF 15	OBSERVE	OBSERVE	→
	↘		Check BG Give 5 GM	OBSERVE	↘
	↓		Check BG Give 5 GM	Check BG Give 5 GM	↓
	↓↓		Check BG Give 10 GM	Check BG Give 10 GM	↓↓

\*BG = BLOOD GLUCOSE (BLOOD SUGAR)

\*GM = GRAMS

5 grams of carbohydrates			
2 saltine crackers and 1 oz of deli meat			
2 teaspoons of peanut butter and ½ cup celery sticks			
½ tube of Go-Gurt			
10 grams of carbohydrates			
1 clementine (Halo, Cutie) and 1 string cheese			
3oz of Reduced Fat Milk and ½ cup Original Cheerios			
½ cup of blueberries and ½ cup of slivered almonds			

## DIABETES CARE FOR SCHOOL – Sick Day Guidelines Appendix

### Rules for treating ketones:

- Do not skip Lantus/Levemir/Basaglar (even if not eating or vomiting).
- Check ketones if blood sugar is > 240 or at time of illness, fever or **vomiting** (even once).
- Both fluids and insulin are needed to get rid of the ketones.
- If your student looks sick and is unable to drink, go to the nearest emergency room.
- If your student is sick with moderate to large ketones for > 6 hours with intervention, go to the nearest emergency room.
- Back-up rapid acting insulin should be kept at school (either vial and syringe or pen and pen needle)

### Instructions for Patients on Injections:

Large Urine Ketones -OR- Blood Ketones >1.5	<ol style="list-style-type: none"> <li>1. <b>Give insulin</b> until ketones are small (even overnight while asleep).           <ol style="list-style-type: none"> <li>A. &lt; 10 years old: every 3 hours 10 years or older: every 2 hours.</li> <li>B. Use blood sugar correction formula you normally use. (<b>Calculate Box B</b>). (Example: Blood sugar minus 150 divided by 50.)</li> <li>C. <b>ADD EXTRA insulin</b> to the calculated total above (even if the number is zero).             <ul style="list-style-type: none"> <li>&lt; 10 years old: Add 2 units to the total.</li> <li>10 years or older: Add 4 units to the total.</li> </ul> </li> </ol> </li> <li>2. Drink fluids “age in ounces” every hour until ketones are negative.           <ol style="list-style-type: none"> <li>A. Blood sugar at any point: &gt;180: Drink sugar free fluids like water, diet soda, or sugar free Kool-Aid. 100-180: Drink ½ water and ½ sugary fluids. &lt; 100: Drink sugary fluids like juice, regular soda, or Gatorade.</li> </ol> </li> <li>3. Check ketones in 2 hours.</li> </ol>
Moderate Urine Ketones -OR- Blood Ketones 1-1.5	<ol style="list-style-type: none"> <li>1. <b>Give insulin</b> until ketones are small (even overnight while asleep).           <ol style="list-style-type: none"> <li>A. &lt; 10 years old: every 3 hours 10 years or older: every 2 hours.</li> <li>B. Use blood sugar correction formula you normally use. (<b>Calculate Box B</b>). (Example: Blood sugar minus 150 divided by 50.)</li> </ol> </li> <li>2. Drink fluids “age in ounces” every hour until ketones are negative.           <ol style="list-style-type: none"> <li>(Example: Blood sugar minus 150 divided by 50.)</li> <li>A. Blood sugar at any point: &gt;180: Drink sugar free fluids like water, diet soda, or sugar free Kool-Aid. 100-180: Drink ½ water and ½ sugary fluids. &lt; 100: Drink sugary fluids like juice, regular soda, or Gatorade.</li> </ol> </li> <li>3. Check ketones in 2 hours.</li> </ol>

### Instructions for patients on pumps:

\*Large urine ketones -OR- blood ketones >1.5, change pump site immediately! Use fresh insulin\*

Use an insulin pen or insulin syringe to give injection if you suspect pump failure.

Moderate or Large Ketones -OR- Blood Ketones 1.0 or >	<ol style="list-style-type: none"> <li>1. Give an insulin bolus to correct the blood sugar using the insulin pump.</li> <li>2. Set a temporary basal rate + 20% for 12 hours.</li> <li>3. Drink fluids “Age in ounces” every hour until ketones are gone. (Example: If your child is 10 years old, he/she needs to drink 10 ounces every hour).           <ol style="list-style-type: none"> <li>A. Blood sugar at any point: &gt;180: Drink sugar free fluids like water, diet soda, or sugar free Kool-Aid. 100-180: Drink ½ water and ½ sugary fluids. &lt; 100: Drink sugary fluids like juice, regular soda, or Gatorade.</li> </ol> </li> <li>4. Check blood sugar in one hour:           <ol style="list-style-type: none"> <li>i. If blood sugar does not come down by 100:               <ol style="list-style-type: none"> <li>i. Give another correction dose <b>using an insulin pen or by insulin syringe</b>. (Example: Blood sugar minus 150 divided by 50).</li> <li>ii. If you have not already changed the pump site using fresh insulin, do it now.</li> </ol> </li> </ol> </li> <li>5. Check ketones in 2 hours.</li> </ol>
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## DIABETES CARE FOR SCHOOL – Nutrition Appendix

- 1. Patient subscribes to a diabetic diet, please restrict the following items:
  - a. Juice, Soda or other Sugar-Sweetened Beverages
  - b. 1 concentrated sweet per day
  
- 2. Limit calorie intake each day to \_\_\_\_\_ calories/meal
  
- 3. Limit carbohydrates at meals and snacks to: \_\_\_\_\_ per meal  
\_\_\_\_\_ per snack

**Additional notes or Restrictions:**

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## DIABETES CARE FOR SCHOOL – Hybrid Closed-Loop System

- Pump/CGM System:**
- Medtronic 670G in Auto Mode
  - Tandem X2 with Dexcom for Control IQ
  - DIY Pump/Closed Loop System

In a hybrid or semi-closed loop system, the insulin pump will read data transmitted from the Continuous Glucose Monitor and make decisions based on blood glucose trends. It's important to note that the patient will still need to enter carbohydrates for any food eaten. The system works to help prevent drastic spikes or drops in blood sugar by adjusting the basal (background) insulin therefore increasing time in range. Insulin on Board or Active Insulin is an important feature. This tells how much insulin is still working in the body from the last insulin dose. The pump may subtract out insulin based on how much is still working in the body or if the blood sugar is below target, this action is approved.

### Control IQ Quick Reference:

		Control-IQ	Sleep Activity	Exercise Activity
  <b>Delivers</b>	Delivers an automatic correction bolus if sensor glucose is predicted to be above ____ mg/dL	180	---	180
  <b>Increases</b>	Increases basal insulin delivery if sensor glucose is predicted to be above ____ mg/dL	160	120	160
  <b>Maintains</b>	Maintains active Personal Profile settings when sensor glucose is between ____ - ____ mg/dL	112.5 - 160	112.5 - 120	140 - 160
  <b>Decreases</b>	Decreases basal insulin delivery if sensor glucose is predicted to be below ____ mg/dL	112.5	112.5	140
  <b>Stops</b>	Stops basal insulin delivery if sensor glucose is predicted to be below ____ mg/dL	70	70	80

\*As measured by CGM.

### Medtronic 670 G Quick Reference:

#### **Important information about Auto Mode:**

- Basal insulin is delivered based on SGs.
- Auto Mode uses a target of 120 mg/dL.
- A student can temporarily change the target to 150 mg/dL, like for exercise.
- Carbs must be entered into the pump before meals.
- BG checks are necessary to calibrate the sensor.
- When a student enters a BG over 150 mg/dL, Auto Mode may recommend a correction bolus.
- A student may receive a BG required alert if the pump needs a BG for Auto Mode.