

Continuous Glucose Monitor (CGM) IHP Addendum

***Warning:** The FDA has not approved CGM's for treatment decisions, *glucose levels must be confirmed with a fingerstick blood glucose check using a meter before treatment.* A treatment decision is typically: a) Insulin administration for hyperglycemia and/or carbohydrate intake. b) Carbohydrates or insulin decreases to treat low blood glucose level. If student has symptoms of hypoglycemia, always check finger stick blood glucose level regardless of CGM. The blood glucose level is always the most accurate measurement.

Student: _____ **DOB:** _____ **Date of Plan:** _____
Physician: _____ **Phone:** _____ **Fax:** _____
School: _____ **Phone:** _____ **Fax:** _____

CGM Brand/Model: _____

CGM will alert audibly if interstitial glucose sugar is less than _____ or above _____ mg/dL.

Pending Low Blood Glucose or Hypoglycemia:

- CGM screen shows < _____ mg/dl with or without arrow(s)
- Test finger stick blood level and follow *Individualized Healthcare Plan and algorithm.*

Pending High Blood Glucose or Hyperglycemia:

- CGM screen shows > _____ mg/dl with or without arrow(s)
- Test finger stick blood glucose level and follow *Individualized Healthcare Plan and algorithm.*

Settings and Alarms Tool: Dexcom and Dexcom Integrated Pump Systems

Low Alert _____	High Alert _____
Fall Rate _____	Rise Rate _____
Snooze Low _____	Snooze High _____

Settings and Alarms Tool: Medtronic Integrated Pump System

Low Alert _____	High Alert _____	Threshold Suspend programmed at glucose level: _____ mg/dL as ordered by healthcare provider Parent initials: _____
Low Predict _____	High Predict _____	
Low Repeat _____	High Repeat _____	
Fall Rate _____	Rise Rate _____	

Notify Parent/Guardian:

- | | |
|-----------------------------------|-----------------------------------------------------------|
| ♦Glucose sensor becomes dislodged | ♦Soreness, redness or bleeding at infusion site |
| ♦Dislodged infusion Set | ♦Leakage of insulin at connection to CGM or infusion site |
| ♦CGM malfunction | ♦Repeated alarms |

Additional Information:

- Parents will calibrate CGM daily per manufacturing recommendations
- Sensors remain in place for ~ 3 days up to a week depending on the brand; the parent is responsible for changing the sensor and site.
- Parents will set the alarms and notify school nurse of the parameters (see above). Alarms should be used conservatively so as not to unnecessarily disrupt the student's school activities.

Parent: _____ Parent Signature: _____ Date/Updated: _____

School Nurse: _____ School Nurse Signature: _____ Date/Updated: _____

Form adapted from Colorado Kids with Diabetes Care and Prevention Collaborative

Continuous Glucose Monitor: Information and General Guidelines

A Continuous Glucose Monitor (CGM) reads glucose levels from a sensor in the interstitial fluid (in the subcutaneous or fatty tissue). The purpose of CGM is to provide information about whether glucose levels are rising, falling or remaining steady. The benefit to knowing how sensor glucose levels are trending is to have forewarning to significant changes in blood glucose levels between finger sticks. This also provides information for dosing and treatment adjustments when confirmed with finger stick blood glucose levels.

CGM is referred to as a “sensor” and its readings are called interstitial glucose or sensor glucose (SG) levels. It has a variance from blood glucose (BG), typically within 20% of a finger stick blood glucose. The variance can be greater due to rapidly moving glucose levels and/or calibration quality and timing. It can be programmed to alert (vibrate or alarm) for high and low glucose levels. CGM is meant to provide additional glucose information and trending information. **It is not approved for use in making treatment decisions.**

CGMs contain three parts: 1) **Glucose sensor:** Placed under skin into the subcutaneous or fatty tissue by the user with an inserter. The sensor contains an electrode that creates a small current to detect changes in glucose level. 2) **Transmitter:** Connects to the sensor to send results to the receiver. 3) **Receiver:** Shows the glucose results and allows you to operate the CGM. (May be within pump)

Alert Settings: CGM alerts for low or high glucose levels and additional warnings for predications and trends. The CGM will alert for the following reasons depending on settings and product:

- **Low or High Limit:** Sensor glucose level is less than or above set limit(s).
- **Low or High Predict:** Sensor is predicting that sensor glucose level will reach set limit in designated amount of time.
- **Fall Rate or Rise Rate Alert:** Sensor glucose level is falling or rising at set rate of mg/dL/min.
- **Low or High Repeat/“Snooze”:** Sensor glucose level remains above or below set limit for designated amount of time.
- **Calibrate or Cal Reminder:** Needs a finger stick blood glucose reading to continue operating. This is for the sensor glucose to measure or calibrate to as blood glucose is the most accurate and gold standard. Parent should guide calibration schedule and be encouraged to manage at home as much as possible.
- **Threshold Suspend:** Basal insulin stops and pump alerts for sensor glucose level below this set limit; follow prompts on screen (Medtronic Enlite only) and check finger stick blood glucose level.

Arrows: The CGM has arrow(s) to indicate the speed at which the glucose levels are rising or falling. Generally speaking, these arrows indicate the following:

- **Single arrow** straight down or straight up means that the sensor glucose is **falling or rising steadily**.
- **Double arrows** straight down or straight up mean that the sensor glucose is **falling or rising rapidly**. (Note: This would not be a proper time to calibrate sensor due to rapidly moving glucose levels which would make the calibration less accurate causing wider variances between SG and BG.)
- **Angled or 45 degree arrow** pointing down or up means that the sensor glucose is **falling or rising slowly** (currently only applies to Dexcom and Dexcom integrated pump systems).

Actions for Alerts: General Guidelines

- When the CGM alerts for low or high sensor glucose levels, TEST FINGER STICK BLOOD GLUCOSE IMMEDIATELY and treat according to Individualized Healthcare Plan (IHP) and algorithm for blood glucose level.
- CGM screen shows <70 mg/dL (with or without arrows): Test finger stick blood glucose level to confirm and if blood glucose is <70 mg/dL, refer to IHP and algorithm for blood glucose treatment.
- CGM screen shows <100 mg/dL with downward arrow(s): Test finger stick blood glucose level to confirm and if blood glucose is between 70-100 mg/dL, refer to IHP and algorithm for blood glucose treatment.
- CGM screen shows 100-200 mg/dL (with or without arrows): Continue diabetes management per IHP unless student is symptomatic.
- CGM screen shows >200 mg/dL with upward arrow(s): Test finger stick blood glucose level to confirm. If blood glucose is 200-250, recheck in one hour and if blood glucose is 251 or higher, recheck in 30 minutes to reevaluate and refer to IHP and algorithm for blood glucose treatment.