

LOS ANGELES UNIFIED SCHOOL DISTRICT
Medical Services Division
District Nursing Services Branch

CONTINUOUS GLUCOSE MONITORING (CGM) IN SCHOOL SETTING

I. GENERAL GUIDELINES

A. PURPOSE

1. The CGM measures the students' glucose levels at designated times during the school day to manage Diabetes properly. CGM is a powerful tool that tracks glucose levels through a device attached to the body. It provides real-time updates every 2-5 minutes, empowering individuals to see real-time trends and take action to prevent low and high glucose levels, which can cause serious health issues.
2. CGM may also be integrated with insulin pumps for automated insulin adjustments based on CGM readings.

B. GENERAL INFORMATION

1. The CGM consists of a thin, flexible sensor that is placed under the skin, a transmitter that communicates with the sensor, and a receiver or another device that displays blood glucose readings.
2. The CGM sensor measures glucose levels in the interstitial fluid and uses this information to estimate sensor glucose levels while blood glucose monitor (BGM) measures blood glucose levels in the blood. The readings may differ slightly due to the different methods of measurement.
3. The glucose first enters the bloodstream and then travels into the interstitial fluid, creating a lag time of about 5-15 minutes between the BGM and CGM glucose levels.
4. The CGM uses Bluetooth to connect to a smartphone so that users can access their CGM data. Caregivers can also view the data and receive customizable alarms.
5. The Diabetes Medical Management Plan (DMMP)/provider's orders should indicate:
 - a. The use of CGM for routine/periodic and emergent glucose monitoring and specify when a BGM should be used instead.
 - b. Any special circumstances when a sensor reading should not be used for dosing.
 - c. When to check CGM reading

- d. Instructions for using trend arrows and other advanced CGM features, as applicable.
- e. Interventions in responding to trend arrows and alarms provided by CGM.
- f. State whether remote monitoring by school staff is medically necessary for the safety of the student; otherwise, the monitor is kept with the student.
6. Parents should ensure their child has a device to display CGM data and communicate alarms (setting) to the school nurse and/or school staff (e.g. receiver, smart device, or insulin pump).
7. After receiving the protocols from the student's health care provider and after training, the school district should inform parents that CGM readings will be checked at the ordered times and alarms will be addressed promptly in accordance with the order.
8. The school and parent should discuss CGM remote monitoring based on DMMP/provider's orders.
9. Blood Glucose Meter should always be accessible as a backup in case any issues arise. Situations when a BGM might be needed as outlined on DMMP/provider's orders:
 - a. CGM Malfunctions:
 - If the sensor becomes detached or fails.
 - When there are inconsistent or intermittent gaps in CGM data.
 - If the student experiences symptoms that do not match the CGM readings.
 - When sensor readings are unavailable for any reason.
 - b. Specific Circumstances for BGM Use:
 - During the first 12 hours of wearing a new sensor (when CGM accuracy may be lower).
 - To confirm low (hypoglycemia) or high (hyperglycemia) blood glucose readings if required by the student's Diabetes Medical Management Plan (DMMP) or medical provider's orders.

C. PERSONNEL

1. Licensed Nursing Provider or School Physician
2. Designated and trained school personnel under the direct or indirect supervision of the school nurse.
3. Students monitored by trained, designated school personnel as appropriate.
4. Students who are designated as independent for these purposes by their licensed healthcare provider.

D. EQUIPMENT

1. Provided by Parent:
 - a. Receiver/smartphone/Controller
 - b. CGM
 - c. Blood Glucose Meter

- d. Finger-lancing device with disposable lancets
 - e. Blood glucose testing strips for specific electronic meter
 - f. Portable/temporary sharps container if testing outside of health office (firm plastic container with tightly closing lid (e.g. empty test strip canister).
 - g. Antiseptic wipes (e.g. Alcohol wipes) if used
 - h. Ketostix
2. Provided by School:
- a. Disposable non-latex gloves
 - b. Plastic bag (if the device comes off)
 - c. Cotton ball or tissues
 - d. Sharps container
 - e. Plastic bag for disposal of waste

II. **PROCEDURE**

- A. Check CGM readings at the ordered times to reduce interruptions during class hours.
- B. Confirm CGM results with BGM under the following conditions as indicated in the DMMP/provider's orders:
 - 1. If CGM alerts for hypoglycemia and hyperglycemia
 - 2. If there is no sensor glucose value
 - 3. If the student is symptomatic
 - 4. If two trend arrows are pointing either up or down
 - 5. When in doubt
- C. School staff should not use personal devices to monitor students.
- D. Do not calibrate.
- E. Ensure a prompt response to alarms:
 - 1. Hypoglycemia (Low Blood Glucose):
 - a. Remotely monitoring the CGM should not replace other strategies to identify and Manage hypoglycemia as outlined in the student's DMMP/provider's orders.
 - b. Follow the DMMP/provider's orders for treatment related to low CGM alarms, including whether a confirmatory BGM measurement is needed. Test blood glucose if the individual has symptoms of hypoglycemia that do not match the CGM reading.
 - c. After low glucose treatment, improvement may not show on CGM immediately due to sensor lag times. To avoid over-treating lows, use a blood glucose meter reading before treating again if the sensor reading remains low.
 - d. If a student using CGM shows symptoms of hypoglycemia, and a blood glucose meter is not accessible to confirm their blood glucose level, the priority is to treat the low blood glucose level according to the DMMP/provider's orders.

2. Hyperglycemia (High Blood Glucose) and Ketones:
The student's DMMP/provider's orders will specify a high sensor reading threshold which may require action that could include checking a confirmatory BGM measurement, encouraging water intake, administering an insulin correction dose, and/or checking for urine ketones.
- F. Concerns related to CGM supplies:
1. If a CGM sensor falls off at school, put all parts of the sensor into a sealable plastic bag to send home.
 - a. Until the sensor is replaced, monitor the student with a BGM.
 - b. Student's family replaces the sensor if the student cannot insert a new one.
 2. Students who are independent to self-manage their diabetes should be permitted to insert a new sensor at school, as outlined in the DMMP/provider's orders.
 3. Check the supplies at school regularly to ensure they have not expired.
- G. Understanding trend arrows from manufacturer:

What do the arrows means?



minute

Increasing/decreasing less than 1 mg/dL each



minutes

Glucose could increase/decrease 30-60 mg/dL in 30



minutes

Glucose could increase/decrease 60-90 mg/dL in 30



in 30 minutes

Glucose could increase/decrease more than 90 mg/dL

H. Types of CGMs:

DEVICE NAME	Dexcom G6 Dexcom G7	Freestyle Freestyle Libre 2 Libre 3	Medtronic Medtronic Guardian 3 Guardian 4
READING FREQUENCY	Transmit result q5 min	Measures q min Records q15 min	Transmit result q5 min
LOCATION FOR PLACEMENT	Abdomen Back of upper arm Upper buttocks	Back of upper arm	Abdomen; Back of upper arm
WARM UP	2 hours 30 minutes	1 hour	2 hours
WEAR TIME	10 days	14 days	7 days
APPROVED FOR DOSING	Yes	Yes	No Yes
CALIBRATION REQUIRED	No	No	Yes No
INTERFERING MEDICATIONS	Tylenol >400 mg/day Hydroxyurea	Vitamin C >500 mg/day Salicylic acid	Tylenol
RECEIVER OPTIONS	Receiver Smartpen T: Slim x2 Tandem Mobi Beta Bionics Omnipod 5 Dexcom	Receiver Smartphone T: Slim x2	Smartphone 780G pump 670G pump 770G pump
REMOTE MONITORING	Dexcom follow	LibreLinkUp	CareLink Connect
LINKS Information for Patients	LINK - https://www.dexcom.com/g6-cgm-system LINK - https://provider.dexcom.com/products/g6-personal-cgm	LINK https://www.freestyle.abbott/us-en/products/freestyle-libre-2.html	Information for Patients LINK Information for HCPs LINK
Information for HCP	LINK LINK	LINK https://www.freestyleprovider.abbott/us-en/freestyle-libre-2.html	LINK

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American Diabetes Association Safe at School: Guidance for the Use of Continuous Glucose Monitoring in School Setting.

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Discover Dexcom Continuous Glucose Monitoring (CGM) Technology

<https://provider.dexcom.com/dexcom-cgm>

Guardian Connect continuous glucose monitoring (CGM)

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Guidance for the Use of Continuous Glucose Monitoring in School Setting

<https://diabetes.org/sites/default/files/2024-06/CGMguidane-6-20-24.pdf>