



Guidelines for Insulin Dosing using the Dexcom G5 CGM System In the School Setting

On December 20, 2016, the FDA approved the Dexcom G5 Mobile Continuous Glucose Monitoring (CGM) System (Dexcom G5) for insulin dosing for patients ages 2 years and older. The Dexcom G5 is the **only** CGM system that has been FDA approved for this use. The Dexcom G4 and other CGM systems are not approved for this use. Therefore, not all students will use their CGM to make treatment decisions.

Based on FDA guidelines, the Dexcom G5 data can be used to make treatment decisions without confirmation by blood glucose meter as long as certain criteria are met. These criteria include:

- The Dexcom G5 must be calibrated according to the manufacturer’s instructions (see below). This includes appropriate self-monitoring blood glucose (“SMBG”) technique.
- The student has not taken acetaminophen.
- The Dexcom G5 receiver or the student’s Dexcom G5 Mobile App must display both a glucose value AND a trend arrow.
- The student is not “stacking” insulin doses (taking correction insulin doses too close together).
- The student is not having symptoms that do not match the Dexcom G5 data.

Dexcom provides clinical guidance available at Dexcom.com/guides.

At this time there appears to be very limited clinical evidence guiding safe and appropriate use of the Dexcom G5 for insulin dosing especially as it pertains to the school setting. Blood glucose management decisions based on the Dexcom G5 data should be individualized for each student as prescribed in their Diabetes Medical Management Plan (“DMMP”). It is recommended that trends/trend arrows not be used to make treatment decisions at this time in the school setting until further research is completed and reviewed. The following recommendations have been developed to assist the school nurse and other trained school personnel in their support of students using the Dexcom G5 for insulin dosing. These recommendations will be reviewed and updated as needed.

General:

- The Dexcom G5 should be calibrated twice a day (every 12 hours) when blood glucose is stable. Meter blood glucose readings should not be used if trend arrows on the Dexcom G5 indicate rapidly rising or falling glucose levels (one or two arrows pointing up or down), and not when the student is about to eat. Calibration is usually done at home and can be verified in the calibration history. Calibrations should be done with the same blood glucose meter at all times.
- If the DexCom G5 is not calibrated at least every 12 hours, and if appropriate SMBG technique is not used, the CGM data should not be used to make treatment decisions.
- Acetaminophen (Tylenol) can falsely elevate Dexcom G5 values. Dexcom G5 readings should not be

used for dosing within 4-8 hours of acetaminophen administration. Be cautious as many combination “cold and flu” medications contain acetaminophen without having “Tylenol” in the name.

- Dexcom G5 CGM data may not be accurate if insulin doses are too close together (stacking).
- A blood glucose meter can be used anytime for treatment decisions, and should be used when symptoms do not match Dexcom G5 reading.
- The DMMP may require a blood glucose value for treatment decisions.

Meals:

- For meal based correction boluses, the Dexcom G5 value may be used in place of using a blood glucose meter provided the value is in the range of 80 to 250 mg/dL. If the Dexcom G5 value is less than 80 mg/dL or greater than 250 mg/dL, then a blood glucose meter should be used and correction dosing should occur based on the meter value as per the student’s DMMP (see DMMP for specific recommendations).

Hypoglycemia (low blood glucose)

- If a student feels that his/her blood glucose is low or if the Dexcom G5 displays < 80 mg/dL, then check blood glucose with a meter and provide rapid acting carbohydrates based on the blood glucose reading and symptoms and recheck in 15 min. If still low, repeat the above.
- If the Dexcom G5 displays hypoglycemia, but the student is not symptomatic, confirm blood glucose with a meter, if available, prior to treating. Treat according to the meter value as per the student’s DMMP.
- Remember that if a student is sent to the school nurse’s office, another person should accompany the student if hypoglycemic. If the student is hypoglycemic, treatment should be provided immediately without the need to travel to the clinic.

Hyperglycemia (high blood glucose)

- If the Dexcom G5 value is >250 mg/dL, then check BG with meter and correct based on the meter value, as per the DMMP.
- If the Dexcom G5 value is >300 mg/dL, check for serum or urine ketones and treat as per the DMMP.

For more training resources and tools go to diabetes.org/safeatschooltraining

Adapted with permission from the Colorado Kids with Diabetes Care and Prevention Collaborative and the University of Florida
Diabetes Center 3/1/17

