



APEG POSITION STATEMENT ON THE USE OF CONTINUOUS GLUCOSE MONITORING SYSTEMS FOR CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES AT SCHOOL AND PRESCHOOL (JUNE 2019)

- Many students are now using a Continuous Glucose Monitoring System (CGMS) as part of their routine diabetes management
- CGMS provide extra information about trends in glucose levels, but are not essential management tools, unless part of a hybrid closed loop system
- CGMS technology is to support student/parents and should be managed by student/parents
- CGMS technology should cause minimal disruption to learning or classroom activities
- School Staff are not expected to do more than the routine care indicated in the students Diabetes Management Plan (DMP)

A CGMS measures glucose levels continuously to provide more information about glucose patterns and trends throughout the day and night. The CGMS works through a sensor inserted under the skin that measures the level of glucose in the interstitial fluid (fluid in the tissue). The sensor is disposable and changed by the student/parent every 7-14 days at home. The sensor readings are transmitted to a receiver (dedicated receiver, insulin pump, smartphone or iDevice). The receiver needs to be within close proximity to receive the sensor information, although data is stored for several hours if out of range. Although CGMS is an excellent tool, for various reasons the sensor glucose (SG) may not always closely match the blood glucose (BG). Students should always have a blood glucose monitor with them at school.

Access to CGMS equipment at school:

- Students using CGMS require access to their receiver (dedicated receiver, insulin pump, smartphone or iDevice) at all times when at school, including during exams/tests
- It is the student's responsibility to carry their receiver at school. If the receiver is a mobile phone, this should not be used for anything other than CGM during school hours. For students in primary school this may be kept on the teacher's desk
- Insertion of the CGMS sensor will be performed by the student/parent at home. School Staff are not required to reinsert the sensor if it falls out during school hours, but should keep the device safe and notify the parent/carer that the sensor is out as soon as is practicable
- Calibration of the CGMS should ideally be performed out of school hours

Monitoring of glucose levels and CGMS alarms at school:

- School Staff are not expected to do more than the routine glucose checks documented in the student's DMP
- School staff are not required to have a CGM follow app on their phone/computer
- Parents should ensure CGM alarms are kept to a minimum at school, so they do not disrupt the student's learning and school activities. A low glucose alarm is recommended, but high glucose alarms and trend alarms are generally best turned off at school
- While it is important that the student/school staff respond to a low glucose alarm (according to the student's DMP), it is the responsibility of the student/parent to monitor and respond to other alarms and CGM information
- Students using a Hybrid Closed Loop System (e.g. Medtronic 670G) may be required to perform and enter an extra BG (when requested by the pump) at times other than routine checks.

Distant monitoring of CGM data by family members:

- If family members have access to CGM data during school hours, they should only contact the school and/or the student if they can foresee an emergency situation
- The use of CGMS should not lead to frequent phone calls to the school to make adjustments that would not ordinarily be required for any student with diabetes
- If the school has concerns about over-use of these apps, they should discuss with the family or seek advice from the student's treating Diabetes Team



Hypoglycaemia management:

- A low blood glucose level can occur at any time and may be detected in the following ways:
 - Symptoms of hypoglycaemia
 - BG < 4mmol/L on routine BG check
 - CGM alert that SG < 4mmol/L
- If the student receives a CGM alert that their SG is <4mmol/L and they have symptoms of hypoglycaemia, the low glucose level should be treated immediately according to the student's DMP
- If the student receives a CGM alert that their SG is <4mmol/L and they have no symptoms of hypoglycaemia, the SG level should be immediately confirmed with a BG check and if the BG < 4mmol/L, treated immediately according to the student's DMP
- The follow-up management of a low glucose level must be based on BG levels not SG levels, as the SG lags behind the BG by up to 10 minutes

Prevention of hypoglycaemia:

- A SG (and SG trend) check prior to physical activity may be recommended to guide management of physical activity at school. This should be documented in the student's DMP

Hyperglycaemia management:

- A high glucose level does not require immediate attention unless the student is unwell
 - If a high SG is detected at the time of a routine check, it should be managed according to the student's DMP
 - If a high SG is detected at other times and the child is unwell, it should be confirmed with a BG and treated according to the student's DMP
 - If a high SG is detected at other times and the child is well, a BG can be delayed until the next routine check or class break

Insulin treatment decisions at school:

- For various reasons, the SG does not always closely match the BG. Therefore insulin dose calculations for injection or pump bolus doses at school, are generally made based on a fingerprick BG level
- Insulin dose calculations for injection or pump bolus doses at school can be made based on a SG level for some students using certain types of CGM, if this approach is documented in the student's DMP
- If insulin dose adjustments based on SG are recommended in the students DMP, clear advice on when to check the SG with a fingerprick BG should be documented. This may include high or low SG levels, rising or falling SG as indicated by trend arrows or suspected SG inaccuracy

Hybrid Closed Loop Systems:

- Hybrid closed loop systems automatically adjust insulin delivery based on SG data, to help prevent low and high glucose levels. These devices are largely reliable and it is likely their use will increase and become more sophisticated in years to come. However, once more, it is not part of the role of school staff to check for pump suspensions or over-ride or re-set the pump
- Students using a Hybrid Closed Loop System (e.g. Medtronic 670G) may be required to perform and enter an extra BG when requested by the pump at times other than routine checks



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