

Standards of Care for Diabetes Management in the School Setting & Licensed Child Care Facilities – Colorado 2024

These are general standards of care for children with Type 1 Diabetes, which are integrated and to be used with Colorado Provider Orders (aka Diabetes Medical Management Plan [DMMP]) to create Individualized Health Plans (IHP). Children diagnosed with Type 2 Diabetes who are receiving medical therapies described may utilize these standards. The child's diabetes health care provider may individualize and indicate exceptions to these standards on the child's individual orders/DMMP.

www.coloradokidswithdiabetes.org



Introduction:

- Under federal and state laws (see *Resources* Section), all schools (including religious schools), camps, child care facilities and community programs **which receive federal funding** and/or are places of public accommodation such as many private schools, child care facilities, and camp and community programs are prohibited from discriminating against children with disabilities such as diabetes.
- These schools/child care facilities have an obligation under federal and many states' laws to provide care so that children with disabilities such as diabetes can safely and fully access the setting, including all school-sponsored events such as extracurricular activities, field trips, overnight trips, and out of state trips.
- The school nurse (SN)/Child Care Health Consultant (CCHC) leads the "team" to ensure that appropriate and timely care prescribed by the child's individualized DMMP is provided to children enabling the school/child care facility to meet its obligations under federal and state laws.
- The SN should be aware of their contracted responsibilities for all school-sponsored events.

References:

<https://know-the-ada.com/ada-and-public-accommodations-guide>, www.diabetes.org/safeatschool or contact 1-800-DIABETES or AskADA@diabetes.org for information and guidance.

1. Communication:

- To facilitate appropriate execution of the Diabetes Health Care Provider's orders/DMMP and to ensure safety of the child, the SN/CCHC will have authorization to exchange health information with the health care provider to assist in developing, updating and carrying out the IHP. Authorization for this coordination of care is per parent-signed diabetes health care provider orders/DMMP and IHP, which aligns with both HIPAA (Health Insurance Portability and Accountability Act) and FERPA (Family Educational Rights to Privacy Act) regulations. The SN/CCHC and health care provider may seek consultation with Colorado's Diabetes Resource Nurses (www.coloradokidswithdiabetes.org) for support and assistance in providing diabetes care in the school and child care setting.
- Communication of care of the student/child will occur following FERPA guidelines. <https://studentprivacy.ed.gov/resources/joint-guidance-application-ferpa-and-hipaa-student-health-records> Communication of glucose readings and coordination of care between child, SN/CCHC, health care providers, school staff/teachers and/or parents may include a variety of options, e.g. cell phone applications, web-based applications, email, and texting, which will be noted in the child's DMMP/IHP/Section 504 plan/IEP (Individualized Education Program) or an agreement with the child care facility. Due to frequent integration between Continuous Glucose Monitors (CGMs) and insulin pumps, smart devices such as phones are considered a medical necessity and need to be accessible to the student at all times.
- Schools are strongly encouraged to provide internet access if available as remote monitoring is becoming standard pediatric care. The American Diabetes Association's position is that schools have an obligation to make Wi-Fi accessible to students to meet medical needs. Shared cellular data plans and/or Wi-Fi may need to

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be provided by the parents as necessary for cellphone service and/or remote site monitoring if school Wi-Fi guest sign in is not available.

- Parents and SNs will create a communication plan regarding diabetes care while at school (e.g. communicating changes in dosing from parent to SN/CCHC) using logs, texting/emails or through the independent child's communication with parent and/or SN. SNs/CCHCs should be aware of all communication arrangements.
- Substitute teachers will be notified of student's diagnosis and plan of care.
- **References for exchange of health info:** <https://www.hhs.gov/hipaa/for-professionals/faq/517/does-hipaa-allow-a-health-care-provider-to-disclose-information-to-a-school-nurse/index.html> For more general info go to <https://www.hhs.gov/hipaa/for-professionals/faq/ferpa-and-hipaa/index.html>

2. Additional Information/504 Plan:

- The child's IHP developed by the SN/CCHC must be consistent with the DMMP or provider order and developed in collaboration with the parent/guardian(s). (See The Delegatory Clause of the Colorado Nurse Practice Act [12-38-101 C.R.S] and 1.13 [Rules and Regulations Regarding the Delegation of Nursing Tasks](#) (3 CCR 716))
- All educational facilities including camps and child care programs should be aware of the legal protections afforded children with diabetes including the ability to carry any needed diabetes management supplies such as a cellphone for operation of CGM/pump. [Commonly Asked Questions about Child Care Centers and the Americans with Disabilities Act](#)
- Section 504 Plan (generally for school age children): Section 504 of the Rehabilitation Act of 1973, an Individualized Education Program (IEP): Individuals with Disabilities Education Act (IDEA) or other written accommodation plan: Prohibits discrimination in any program or activity (academic, nonacademic, extracurricular) that receives federal funding and applies to all public *and* private schools including religious schools that receive federal money. The identification for Section 504/IEP services must be based upon evaluations and conducted by a team of individuals knowledgeable about the child, including the parents, SN/CCHC, administration, teachers, etc. It should be consistent with and incorporate the provider orders/DMMP for reference (please communicate with providers if discrepancies occur).
- For more information about Section 504 Protections for students with diabetes, see: <https://www2.ed.gov/about/offices/list/ocr/docs/ocr-factsheet-diabetes-202402.pdf>

3. Screening for and Stages of Type 1 Diabetes (T1D)

- Please refer to Addendum A for detailed information
- For more information on where screening for type 1 diabetes is available, visit ASKtheExperts.org.

4. Diabetes Health Care Provider Orders/DMMP:

- The orders/DMMP should be obtained annually at the start of each school year and on an ongoing basis as needed or annually/ongoing based on enrollment in a child care facility for coordination of care.
- For manual daily injections (MDI) or non-automated insulin devices (AID) insulin administration, routine dosing should follow the DMMP. Parentally recommended modifications of +/- 3 units per dose are permissible on an occasional basis in accordance with CO Nursing Delegation Rules 1.13. If dosing is being routinely adjusted, then new DMMP dosing orders should be obtained. *
- Barbara Davis Center, Children's Hospital Colorado Health Care Provider orders/DMMP and the American Diabetes Association DMMP are approved by this collaborative and acceptable for the administration, delegation and supervision of medication. Therefore, additional school or district specific medication forms are NOT necessary unless they contain additional information not specified for this child's diabetes care or are needed for the care of another chronic condition.
- The health care provider may individualize the DMMP per the child's individual needs, which may vary from the *Standards of Care* but fall within reasonable and safe accommodations.

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- **Students with new onset diabetes may require frequent insulin dose adjustments** which are communicated from clinic to parents. Parents may share updated insulin doses (ratios, correction factors, glucose targets, etc) with school health personnel. Once a new and consistent dose setting has been established, an updated order should be obtained.

5. Monitoring Glucose Levels:

- **Standard Target Ranges:** The student's target ranges are indicated by the health care provider on the orders/DMMP. If the target range is not indicated, use the current standard of 70-180 mg/dL. *Children and Adolescents: Standards of Medical Care in Diabetes-2024: (Diabetes Care Volume 47, Supplement 1, January 2024)* <https://doi.org/10.2337/dc24-S014>
- **Notification to Parents*:**
Low < target range and **High** > 300 mg/dL (unless otherwise indicated on Provider orders/DMMP)
**See Hypoglycemia and Hyperglycemia Sections for notification recommendations*
- The frequency of routine glucose monitoring should take into consideration the child's schedule and participation in classroom learning/activities. Too frequent glucose monitoring may impact learning and school participation. On average, a child would have routine glucose monitoring 1-3 times during the school day unless otherwise indicated on orders/DMMP.

6. Hypoglycemia: General Guidelines for all children with or without a pump:

- **Refer to Table 1 (Page 12)**
- The child should be treated **immediately and onsite** (i.e. classroom, playground, school bus) if symptomatic or if glucose is below *Target Range*. If the child needs to go to the health office, the student should be accompanied by a responsible person (to be determined in collaboration with the parent, child and SN/CCHC) as indicated in the child's IHP and/or Section 504 plan.
- The SN/CCHC should encourage the parent to contact the health care provider for insulin dose adjustments if hypoglycemia occurs frequently (when there are 3 or more days per week with 3 or more glucose readings **below target range** at the *same time* of day).
- The amount of carbohydrates used in treatment of mild-moderate hypoglycemia (with or without pump) is based on the child's sensitivity to carbohydrates and may be individualized by the parents/guardians and/or specified in the provider's orders/DMMP.
- Do not give insulin for carbohydrates (do not enter in pump) given to treat low glucose levels. The SN/CCHC should discuss with the parent whether the child is given an insulin bolus for snacks immediately following hypoglycemia (SN/CCHC to make note on the IHP).
- **Notify Parents after a child has been treated for hypoglycemia to avoid delaying treatment. However, in the case of mild hypoglycemia (greater than 60 mg/dL and NO symptoms), the parent may indicate they want to be contacted prior to treatment to determine treatment. This should be indicated on the child's IHP. If parent cannot be contacted, then treatment should be provided immediately per Table 1 (Page 12).**

7. Hyperglycemia: General Guidelines:

- **Student on Injections: Refer to Table 2 (Page 13)**
- **Student on Insulin Pump: Refer to Table 3 (Page 14)**
- The SN/CCHC should take into consideration upcoming activities including PE, lunch dosing, walking home, after school activities, etc. when giving insulin corrections.
- For all children (with or without pump), the SN/CCHC should encourage the parent to contact the health care provider for insulin dose adjustments if hyperglycemia occurs frequently (when there are 3 or more days per week with 3 or more glucose readings **above target range** at the *same time* of day).
- Check ketones whenever student has symptoms of illness, nausea, vomiting, and/or stomachache. If the school is unable to test for ketones, and the child has any of these symptoms, notify the SN/CCHC. At this point, the child should be treated/monitored by parent/guardian outside of school. The presence of ketones may

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indicate impending diabetic ketoacidosis (DKA). If symptoms of nausea, vomiting and/or stomachache persist or worsen while at school, and the parent is unable to be contacted, call 911.

- **Exercise and School Attendance: Refer to Table 4 (Page 15)**
 - Always check glucose and/or ketones (if supplies are available) before exercise if the child is not feeling well or is experiencing moderate to severe symptoms* of hyperglycemia and/or DKA
*Moderate to severe symptoms include stomach ache, nausea, vomiting, labored breathing, slurred speech, change in mental status, dehydration.
 - Potential pump malfunction: The concern for a student on a pump w/ hyperglycemia is a malfunctioning pump/infusion site failure and the risk of quickly going into DKA. Unlicensed Assistive Personnel (UAP) should contact SN/CCHC for further instructions re: insulin by injection or new infusion set by parent or independent student.
 - If pump calculator is not working, the SN/CCHC may calculate and give insulin according to the child's insulin dosing using this formula for glucose corrections, meal dosing, or both:*

Formula:
$$\frac{(\text{Current BG} - \text{target})}{\text{Sensitivity or Correction Factor}} + \frac{\text{Grams of Carbohydrates}}{\text{Carbohydrate Ratio}} = \text{Units of Insulin}$$

Example:
$$\frac{(275-150)}{50} + \frac{60}{15} = 6.5 \text{ Units}$$

**When using a Medtronic pump, use upper target for “target”*

**Once the dose is calculated, the SN/CCHC may reference previous doses to verify the calculated dose is in the child's range.*

**Alternatively, the SN/CCHC may contact the health care provider for a one-time order for insulin dosing or correction if carb ratio/correction factor dosing is not provided on orders/DMMP.*

8. Exercise in the School Setting

- Aerobic exercise may increase the chance of hypoglycemia, due to increased uptake of glucose by the muscles during exercise and increased insulin sensitivity that can occur with exercise and may last for up to several hours post exercise. Some students paradoxically experience hyperglycemia during or right after exercise, though they are still at risk of hypoglycemia later on.
- Strategies for managing glucose levels and reducing chance of hypoglycemia are highly individualized, and based on prior experience/trial and error, and the type and duration of exercise. For some students it is possible they may not need to adjust their usual routine if the exercise is mild in intensity or if it is primarily an anaerobic activity.
- Strategies to help manage glucose levels around exercise and help prevent hypoglycemia may include:
 - Small carbohydrate snacks (e.g.: 15 g granola bar) prior to exercise*
 - Small carbohydrate snack during exercise (e.g.: 5-15 g as needed- granola bar or sips of regular Gatorade)*
 - **Using pump features designed to minimize hypoglycemia during activities:** Reducing insulin delivery in the 1-2 hours prior to exercise using the “temp basal” feature in a manual insulin pump or “exercise”/” activity”/”temp target” feature in an AID system is safe and appropriate to use in the school setting. The SN/CCHC is encouraged to train and delegate the use of these features to help reduce the risk of hypoglycemia for the student as needed.

*** No insulin should be given for carbs intake prior to or during exercise**

9. Insulin Management

Rapid-acting insulins are interchangeable (e.g. Humalog/Admelog/Lispro [insulin lispro], Novolog [insulin aspart], Apidra [insulin glulisine]) unless child is allergic to a certain brand or otherwise indicated on provider orders/DMMP. Ultra-rapid insulins (e.g. Fiasp [insulin aspart], Lyumjev [insulin lispro-aabc]) act and peak sooner than rapid-acting insulins and would require new orders.

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* Diluted insulin can be supported in the school setting if the dilution was done by a health care provider/pharmacist and is indicated on the DMMP/provider orders.

- The parent and/or UAP should notify the SN/CCHC for changes in insulin dosing so the IHP can be updated per orders/DMMP and any further delegation can occur.
- In the school/child care setting, fast-acting insulin is generally given 5-15 minutes prior to lunchtime, unless otherwise indicated on provider orders/DMMP. Since it is difficult to determine precisely when the child will actually eat their meal at school due to varying factors, fast-acting insulin is not given earlier than 10-15 minutes to avoid an episode of hypoglycemia. Ultra-rapid insulins should be administered immediately prior to the meal/snack.
- The two-digit rule (a rule using the first 2 digits of the blood glucose reading to determine how much in advance to give insulin prior to a meal, e.g. if blood glucose is 200 then give insulin 20 minutes before eating) for giving insulin prior to meals is not practical in the school setting due to the inability to predict the exact timing of the meal.
- Refer to the child's individualized orders/DMMP for snack dosing.
- After 28 days, opened vials/cartridges/pens of insulin will begin to lose their potency and be susceptible to bacteria contamination; therefore the insulin should no longer be used in the school/child care setting.
 - SN/CCHC should notify parent of insulin and glucagon expiration dates in advance so parents can bring in new medication.
 - Please check with parents to see if they would like the expired insulin to be returned to them or discarded.
- Long-acting insulin may be given during school when indicated by the provider (e.g. when adherence to insulin regimen is not occurring at home).

10. Pump Management

- The computerized feature/calculator of the pump should be used for insulin boluses.
- **Bolusing for carb intake (Carb Bolus):** all carbohydrate grams (with the exception of treatment for hypoglycemia) should be entered into the pump for delivery of pump-recommended boluses.
- **Bolus for correcting glucose levels (Glucose Correction Bolus):** Add glucose value to bolus calculator, as long as it has been at least 2 hours since the last bolus was given
- Parents/guardians are responsible for ensuring all pump settings align with orders/DMMP.
- The pump bolus calculator rarely should be overridden, nor fake carbs entered (e.g. in dosing changes). Encourage parents to follow-up with their health care provider for insulin pump dose adjustments if frequent overrides are being requested.
- **UAPs must always get approval from their SN/CCHC to override pump insulin calculations.**
- In the event of pump infusion set malfunctions, the school staff should contact the SN/CCHC for further instructions regarding insulin dosing.
 - Insulin will be given by injection if pump site fails unless parent or independent child is available to change out site immediately.
 - The SN/CCHC will coordinate this with parents/guardians.

11. Continuous Glucose Monitors/Integrated Continuous Glucose Monitors (CGM/iCGM)

- CGM systems use a sensor under the skin to monitor glucose levels (ongoing or short term) in interstitial fluid. Some CGMs need to be calibrated using a finger stick glucose reading when readings are stable, typically outside of school. Parents/independent children are responsible for changing sensor/site. Calibrations may need to occur in school if prompted by CGM and should ideally occur when the blood glucose levels are stable (not rising or falling rapidly), typically before meals, not after meals.
- The FDA has currently approved **non-adjunctive use** of the G6 & G7 CGM, Freestyle Libre 2, 2 Plus, and 3 iCGMs, and Medtronic Guardian 4 continuous glucose monitors. Please refer to the *Collaborative Guidelines for CGM/iCGM Therapeutic Dosing in the School Setting –Colorado 2023*, www.coloradokidswithdiabetes.org.

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- **Use of CGM in the school/child care setting:**
 - Use of CGM by SNs and staff is becoming more common and continuing to evolve. The **benefits of a CGM** in the school/child care setting include real-time, dynamic glucose information, which enhances the safety of the child and their diabetes control.
 - Remote monitoring of CGM alerts and arrow trends may be appropriate, and the SN/CCHC should support the use of CGMs and determine the parameters of use with the 504 team so there is little disruption to the student’s school activities, thereby enhancing their education.
 - Parent(s) or schools may provide the remote monitoring device. School-provided devices often can monitor several students on one device.
 - **SN/CCHC/UAP personal devices should never be used for remote monitoring.**
 - In the event of CGM malfunction (eg: comes off body), BG meter will be used unless the parent or independent child is available to change out site immediately.
 - The SN/CCHC will coordinate this with parents/guardians.
- **Alerts and Alarms:**
 - The use of the CGM in the school setting includes being aware of and responding to certain alarms. The recommendation is for using alarms sparingly and setting alarms for blood glucose levels that require an immediate action/response (e.g. when sensor glucose is < 80 or > 250 mg/dL.) This will help the child avoid alarm fatigue and enhance learning by avoiding unnecessary disruption to their learning in the classroom.
 - UAPs should respond to low and high glucose alarms rather than the constantly fluctuating trends and numbers with the goal of ensuring timely interventions for the safety of the student.
 - Parents are responsible for setting the alarms and notifying the SN/child care health consultant of the parameters. The alarm for less than (<) 55 mg/dL is hard coded and cannot be turned off.
 - Predictive alarms: actions and/or treatment will be determined by parent and SN.
 - Trend Arrows: The health care provider may indicate on the DMMP the use of trend arrows at mealtime in determining insulin dosing/treatment. These trend arrows vary per manufacturer and may be used in individualized treatment decisions as agreed upon by the SN, parent and provider.
 - School and child care staff are responsible for keeping all children safe in the school setting. School staff do not have the staffing capacity to support unique requests for frequent glucose pattern management techniques at school (e.g. sugar surfing). Diabetes care at school will be provided in accordance with the regimen prescribed in the child’s DMMP/provider orders.
- Certain CGMs (ex: Medtronic Guardian 3 & 4) have wording on use of acetaminophen (Tylenol) possibly causing interference with SGs while using these devices. If the child needs this medication during the school day, contact parents for instruction.

12. Automated Insulin Delivery (AID) Devices in the school setting:

- AID systems are insulin pumps that are integrated with a CGM and automatically increase or decrease basal insulin delivery in response to sensor glucose values
- Advanced hybrid AID systems are “next-generation” systems that not only adjust basal insulin delivery but also have the capacity to deliver automatic correction boluses.
- All AID devices still require carb input or meal announcements for insulin dosing for food intake and require sensor glucose values to continue to operate in automated mode.

13. Clinical Research/Trials in the school setting:

- Students with all stages of type 1 diabetes may participate in clinical research trials. These trials may be evaluating new insulin pumps and/or CGMs. These trials may also be evaluating the ability of a medication to preserve endogenous insulin production in early-stage or newly diagnosed individuals.
- Collaboration with parents, children, health care providers and SNs to individualize use and treatment with new and emerging technology is important.
- When students are participating in clinical trials the SN/CCHC should follow medical orders to know how to provide support.

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- Some patients with early-stage type 1 diabetes will enroll in prevention trials and use investigational medications. In this case, the family will need to share the potential side effects and possible concerns associated with the investigational agent.
- 14. Do-It-Yourself (DIY) Artificial Pancreas (AP) Systems** (e.g. looping): DIY automated insulin delivery systems are not cleared or approved by the FDA, and the Collaborative does not endorse their use due to concerns regarding tampering with a medical device, outside the bounds of rigorous scientific research, potential coding errors, and/or potential malfunctions. **HOWEVER**, the SN and school staff may support the student with a DIY AP system **if the student has a current DMMP/provider order that indicates the DIY system**. Support may include inputting glucose and carbohydrate numbers into the pump for insulin dosing and hypo-hyperglycemia management.
- **“Remote” bolusing** (over the internet bolusing such as by the parent from their home), which can be a part of a DIY system will not be supported in the school due to concerns about safety and the overall unknown about the potential errors. If a parent/guardian chooses to “remote” bolus, the SN will provide support to the student during emergency care as per the Emergency Action Plan.
- 15. Multiple Interventions Per Day Outside of DMMP/Provider Orders and/or overriding insulin pump:** In general, regarding care when parents request multiple interventions per day to override or change the DMMP and/or insulin pump’s dose calculations - this type of care is beyond “reasonable accommodations” due to the frequent disruptions to the child’s education and the potential for error (e.g. causing hypoglycemia). Therefore, the SN and school staff cannot provide this type of care in the school or child care setting. *However, the SN and school staff may provide hypo-hyperglycemia treatment for the child per Tables 1, 2 & 3 or per DMMP. Note: This does not include the occasional changes to insulin dosing as noted above in #3 Diabetes Healthcare Provider Orders/DMMP.*
- 16. Self-Care Management:** Ability level is to be determined by the parent and provider with consultation from the SN and specified on the provider orders/DMMP (which may direct parent and SN to set ability level) and then applied to the school setting as specified in the IHP. All children regardless of age or expertise require a plan (e.g. Emergency Action plan, and/or hypo/hyperglycemia flow sheet) and may need assistance with hypoglycemia and illness.
- 17. Bus Transportation to Home/Walking Home:** Prior to riding a bus or walking home, the child’s glucose levels should be above 80 mg/dL (unless otherwise indicated in DMMP/IHP) and stable (no down arrow on CGM unless above target). For hyperglycemia, if the glucose level is above target range but child’s ketone levels are negative-small (check ketones per Tables 2 & 3) and child is asymptomatic, the child may ride the bus or walk home unless otherwise indicated on DMMP/IHP.
- 18. Mental Health Considerations:** Children who have been in day treatment, hospitalized, or have active mental health concerns (e.g. suicide watch) should have a transition plan in place prior to returning to school. The providers, social workers, parents, school staff and SN/CCHC should collaborate to develop the transition plan (e.g. determine safe use of pump, BG monitoring, insulin administrative oversight by school staff). Mental health concerns for any student should always be addressed following district/school specific procedures for Multi Systems Student Support. <https://www.cde.state.co.us/fedprograms/districtwide-comtss>
- 19. Non-adherence to diabetes care:** For children not adhering to treatment (not checking BG, not taking insulin, not checking ketones), the SN/CCHC, parent, and providers should communicate concerns and collaborate on problem-solving interventions as soon as possible.
- 20. Children with private duty nurses:** If a child has a private duty nurse, the *Standards of Care* may be individualized or exempt at the discretion of the parents and/or health care provider and per any agreement with the school district.

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21. Emergency Preparedness: Schools, child care programs and parents should develop a plan to have emergency diabetes supplies available for the child in the event of fires, tornados, lockdowns, evacuations, etc. and practice the emergency plan during the school drills. The specifics of the plan may be addressed on the child’s Section 504 plan.

NOTE: SNs and CCHC’s should determine their individual scope of practice regarding new diabetes treatment therapies and/or diabetes care practices. https://www.colorado.gov/pacific/dora/Nursing_laws.

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REFERENCES:

- Abraham, M. B., Karges, B., Dovc, K., Naranjo, D., Arbelaez, A. M., Mbogo, J., Javelikar, G., Jones, T. W., & Mahmud, F. H. (2022). ISPAD Clinical Practice Consensus Guidelines 2022: Assessment and management of hypoglycemia in children and adolescents with diabetes. *Pediatric Diabetes*, 23(8), 1322.
- American Academy of Pediatrics. (2021). *Diabetes Management in Schools*. Retrieved March 23, 2024 from <https://www.aap.org/en/patient-care/school-health/management-of-chronic-conditions-in-schools/diabetes-management-in-schools/>
- American Association of Diabetes Educators. (2016). Management of Children with Diabetes in the School Setting. In *Position Statement*. https://www.diabeteseducator.org/docs/default-source/practice/practice-resources/position-statements/diabetes-in-the-school-setting-position-statement_final.pdf?sfvrsn=4.
- American Diabetes Association. (2022). Helping the Student with Diabetes Succeed: A Guide for School Personnel. Retrieved July 18, 2024 <https://diabetes.org/sites/default/files/2023-10/School-guide-final-11-16-22.pdf>
- American Diabetes Association (June 2024). Guidance for the Use of Continuous Glucose Monitoring in the School Setting. Retrieved July 18, 2024. <https://diabetes.org/sites/default/files/2024-06/CGMguidane-6-20-24.pdf>
- American Diabetes Association. (2023). Safe at School®: School Support for Students with Diabetes Participating in Clinical Trials. Retrieved June 13, 2024, from <https://diabetes.org/sites/default/files/2023-10/clinical-trial-guidance-6-20-23.pdf>
- American Diabetes Association. (2024). Standards of Diabetes Care-2024. *Diabetes Care*, 47. <https://doi.org/https://doi.org/10.2337/dc24-SINT>
- American Diabetes Association, Professional Practice Committee. (2023). 14. Children and Adolescents: Standards of Care in Diabetes—2024. *Diabetes Care*, 47(Supplement_1), S258-S281. <https://doi.org/10.2337/dc24-S014>
- Battelino, T., Alexander, C. M., Amiel, S. A., Arreaza-Rubin, G., Beck, R. W., Bergenstal, R. M., ... & Phillip, M. (2023). Continuous glucose monitoring and metrics for clinical trials: an international consensus statement. *The Lancet Diabetes & endocrinology*, 11(1), 42-57. [https://doi.org/10.1016/S2213-8587\(22\)00319-9](https://doi.org/10.1016/S2213-8587(22)00319-9)
- Chase, H. P., & Messer, L. H. (no date). *Understanding Insulin Pumps, Continuous Glucose Monitors and the Artificial Pancreas* (3 ed.). Children's Diabetes Foundation.
- Cox, C., Jameson, P., & Ferguson, S. (2019). Management of Children With Diabetes in the School Setting. *45*(1), 54-59. <https://doi.org/https://doi.org/10.1177/0145721718754810>
- ElSayed, N. A., Aleppo, G., Aroda, V. R., Bannuru, R. R., Brown, F. M., Bruemmer, D., Collins, B. S., Hilliard, M. E., Isaacs, D., & Johnson, E. L. (2023). 7. Diabetes technology: standards of care in diabetes—2023. *Diabetes Care*, 46(Supplement_1), S111-S127.
- Frohnert, B. I., & Chase, H. P. (2022). *Understanding Diabetes* (15 ed.). Children's Diabetes Foundation.
- Jackson, C. C., Albanese-O'Neill, A., Butler, K. L., Chiang, J. L., Deeb, L. C., Hathaway, K., Kraus, E., Weissberg-Benchell, J., Yatvin, A. L., & Siminerio, L. M. (2015). Diabetes Care in the School Setting: A Position Statement of the American Diabetes Association. *Diabetes Care*, 38(10), 1958-1963. <https://doi.org/10.2337/dc15-1418>
- Lawrence, S. E., Albanese-O'Neill, A., Besançon, S., Black, T., Bratina, N., Chaney, D., Cogen, F. R., Cummings, E. A., Moreau, E., & Pierce, J. S. (2022). ISPAD Clinical Practice Consensus Guidelines 2022: Management and support of children and adolescents with diabetes in school. *Pediatric Diabetes*, 23(8), 1478-1495.
- March, C., Sherman, J., Bannuru, R. R., Fischer, A., Gabbay, R. A., Rodriguez, H., Rodriguez, J., Weissberg-Benchell, J., Woodward, C., & ElSayed, N. A. (2023). Care of young children with diabetes in the childcare and community setting: a statement of the American Diabetes Association. *Diabetes Care*, 46(12), 2102-2111. <https://doi.org/https://doi.org/10.2337/dci23-0083>
- National Association of SNs. (2021). *School Nursing Evidence-Based Clinical Practice Guideline: Students with Type 1 Diabetes* (L. Wilt, B. E. Jameson, & E. D. Maughan, Eds.). National Association of SNs.
- National Association of SNs. (2024). Position Statement: School-sponsored trips – Equitably addressing student health needs. In <https://www.nasn.org/nasn-resources/professional-practice-documents/position-statements/ps-trips>.
- Sherr, J. L., Schoelwer, M., Dos Santos, T. J., Reddy, L., Biester, T., Galderisi, A., van Dyk, J. C., Hilliard, M. E., Berget, C., & DiMeglio, L. A. (2022). ISPAD clinical practice consensus guidelines 2022: diabetes technologies: insulin delivery. *Pediatric Diabetes*, 23(8), 1406-1431.
- Tauschmann, M., Forlenza, G., Hood, K., Cardona-Hernandez, R., Giani, E., Hendrieckx, C., DeSalvo, D. J., Laffel, L. M., Saboo, B., & Wheeler, B. J. (2022). ISPAD clinical practice consensus guidelines 2022: diabetes technologies: glucose monitoring. *Pediatric Diabetes*, 23(8), 1390-1405. <https://doi.org/10.1111/pedi.13451>

RESOURCES:

- Child Care Facility Licensing Rules and Regulations, (2024). https://drive.google.com/file/d/1aJKN54VTC_-8MIX4yLlkbem9ImoVDG1O/view
- Rules and Regulations Regarding the Delegation of Nursing Tasks 3CCR 716-1, 1.13 G 3 CCR 716-1, (2024). <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=11428&fileName=3%20CCR%20716-1>
- Nursing Scope of Practice Algorithm, (no date). <https://dpo.colorado.gov/Nursing/Laws>, Medical Rules and Regulations, (2023). <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=11211&fileName=3%20CCR%20713-1>

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Addendum A: Current and Emerging Therapies & Technologies

Diabetes therapies and technologies continue to change at a rapid pace, and it is important for the SN/CCHC to stay current with devices and therapies that their students with diabetes are involved with in order to support and help manage these students safely and effectively.

Addendum A now includes information on emerging therapies that students and families with T1D might be involved in and that the SN/CCHC will need to provide support for in the school and child care settings. It also includes links to resource guides/videos for diabetes technologies that are currently or soon to be FDA approved and most often seen in the school and child care settings.

For all current and updated diabetes technology information:

- PANTHERprogram.org
- This site includes pdf forms for current insulin pumps on the US market
- All forms are printable

For Medtronic InPen Smart Pen:

- General Information: <https://www.youtube.com/watch?v=ZNyGkqMFYyg>
- Using the app's dose calculator: <https://www.youtube.com/watch?v=OyFq45IqwWI>
- Installing a cartridge and delivering an insulin dose: <https://www.medtronicdiabetes.com/inpen-training>

For Medtronic iPort Patch:

- <https://www.medtronicdiabetes.com/products/i-port-advance>

Screening For and Stages of T1D:

- **Screening for T1D:** Students with type 1 diabetes can be identified before they develop symptoms by measuring markers in the blood called islet autoantibodies. It is recommended that children who have a relative with T1D are screened because they are at high risk (~1 in 20). However, any child may benefit from screening for T1D, as 9 out of 10 children who develop it do not have a family history. Islet autoantibodies can be ordered by a healthcare provider or through a research study. **For more information on where screening for T1D is available, visit ASKtheExperts.org.**
- **Stages of T1D:** When a person has two or more islet autoantibodies, the immune system is attacking the insulin-producing beta-cells, and they will eventually require insulin treatment for survival.
 - Support for students with early-stage type 1 diabetes is different than for patients who already have stage 3 type 1 diabetes.
 - Stage 1 type 1 diabetes is defined by the presence of multiple islet autoantibodies.
 - Stage 2 type 1 diabetes is defined by multiple diabetes autoantibodies plus dysglycemia that does not yet reach the threshold for needing insulin.
 - When early stage type 1 diabetes is discovered, individuals are monitored for progression. The goals for screening and monitoring for progression are to recognize stage 3 type 1 diabetes early and to avoid diabetic ketoacidosis.
 - If the student has symptoms of type 1 diabetes (increased urination, increased thirst), inform the legal guardian(s) and recommend that they check their glucose level.
- **Therapies Used**
 - Students with early-stage type 1 diabetes may intermittently wear CGMs and/or check glucose levels at home. CGMs are worn for data collection purposes and values will be reviewed by a healthcare provider at the end of sensor wear. For sensor glucose values below 55 mg/dL, the CGM will alarm because this feature is required by the FDA for CGM. In people who are not

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taking insulin, the body can raise the blood glucose in response to normal lows. However, if the sensor glucose value is below 55 mg/dL or the student feels hungry or has symptoms of low blood glucose, give a small snack.

- Patients aged 8 or older with stage 2 type 1 diabetes may receive teplizumab (Tzield), an FDA-approved treatment that may delay the onset of stage 3 type 1 diabetes. This medication is given intravenously for 30 minutes for 14 consecutive days. Some students will attend school during the infusion period, and others will arrange to complete schoolwork remotely. Infection risk is highest during treatment and present for ~4 weeks post-treatment. When attending school while there is a higher risk for infection, we suggest that the school follows standard infection precautions per CDC guidelines (<https://www.cdc.gov/orr/school-preparedness/infection-prevention/actions.html>) and that the classroom has hand sanitizer readily available that is used upon entry to the classroom.

Table 1: Hypoglycemia
Glucose < (less than) 70 mg/dL or lower than target indicated in orders/DMMP

Scenario	Action
<p><u>Student reports feeling “low,” symptoms are noted by staff, or CGM is alarming low.</u></p>	<ul style="list-style-type: none"> ● Check blood glucose (BG) with glucometer or use CGM (if non-adjunctive). If < (less than) 80 mg/dL, check fingerstick. If CGM reads “LO” then check fingerstick ● If no meter/sensor is available assume BG is low and treat per symptoms
<p><u>Mild Symptoms with or without BG below target range or Meter reads “LO”:</u></p> <p>Symptoms may include but are not limited to: Dizziness, irritability, moodiness, anxiety, hunger, shakiness, sweating (usually cold sweat), rapid heart beat</p>	<ul style="list-style-type: none"> ● Up to 5 years old: treat with ~5-7 g fast-acting carbs* ● Over 5 years old: treat with ~10-15 g fast-acting carbs <ul style="list-style-type: none"> ○ Amount of carbs should be individualized and included on the IHP ● <i>Do not give insulin for carbs given to treat hypoglycemia</i> ● Recheck BG in 10-15 min (15-20 min for CGM). Once glucose level is above 70 mg/dL, and child is asymptomatic, child may return to class ● If still below <i>Target Range</i>, repeat steps until within target range ● Once in <i>Target Range</i>, consult IHP regarding follow-up snack instructions per parent ● Follow Snack/Meal Protocol (below)
<p><u>Moderate Hypoglycemic Symptoms with or without BG target below target range:</u></p> <p>Symptoms may include but are not limited to: Confusion, headache, poor coordination</p>	<ul style="list-style-type: none"> ● Follow the same steps for “Mild Symptoms” above ● Follow Snack/Meal Protocol (below) ● If the child is unable to drink or eat, this is severe hypoglycemia. Proceed to “Severe Symptoms” below
<p><u>Severe Symptoms with or without BG below target range:</u></p> <p>Symptoms may include but are not limited to: Severe drowsiness, fainting, loss of consciousness, seizures, unable or unwilling to eat or drink or take glucose gel</p>	<ul style="list-style-type: none"> ● Call 911! ● Check BG with glucometer if available ● Administer glucagon per manufacturer’s instructions, orders/DMMP <ul style="list-style-type: none"> ○ Trained personnel should be available for administration of glucagon ● Contact parent

In all cases, notify parents after the student has been treated per DMMP/IHP.

- Fast-acting carbohydrates may include but are not limited to: juice, glucose tablets, Skittles, honey, regular soda, etc.
- Complex Carb Snack can include crackers and cheese, meat and crackers, apple and cheese, etc.
- ***Snack/Meal Protocol: Do not give insulin (do not enter in pump) for carbohydrates given to treat symptoms of and/or documented low glucose levels. Refer to IHP for insulin dosing for follow-up snacks.***

At mealtime, after blood glucose is within target range, send the student to lunch and give insulin after eating (If on an automated insulin delivery system, the meal bolus may need to be given before meal –see DMMP), based on the grams of carbs only unless otherwise indicated on orders/DMMP. **For Pumps: Immediately after eating**, enter grams of carbs eaten into pump and use the pump calculator to determine amount of insulin to be given unless otherwise indicated on orders/DMMP, The BG should not be entered into the pump when determining insulin dose after a low event.

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**Table 2: Hyperglycemia for Students on Injections:
Glucose > (greater than) target as indicated in orders/DMMP**

Scenario	Action
<p>Glucose 150-300 mg/dL Before Meal</p>	<ul style="list-style-type: none"> • Give correction per orders/DMMP correction table
<p>Glucose 150-300 mg/dL Outside of Mealtime</p> <p>OR Glucose > (greater than) 300 mg/dL once and non-symptomatic*</p>	<ul style="list-style-type: none"> • Non-Medical staff call SN for instruction • If < 3 hours since last insulin dose, wait and retest at 3 hours • If 3 hours or more since last insulin, give correction per DMMP <ul style="list-style-type: none"> ○ If correction given between breakfast and lunch, give only carb dose at lunch ○ If correction given after lunch inform parent/guardian when correction was given
<p>Glucose > 300 mg/dL for at least 2 hours of duration</p> <p>OR *symptomatic as described above</p> <p>OR meter reads “HI”</p> <ul style="list-style-type: none"> • Use highest reading meter goes to (400-600 mg/dL) 	<ul style="list-style-type: none"> • Non-Medical staff call SN for instruction • Check ketones <ul style="list-style-type: none"> • Ketones negative (less than 0.6 on meter) <ul style="list-style-type: none"> ○ Give correction per DMMP if it has been at least 3 hours since last correction • Ketones trace to small (0.6-0.9) <ul style="list-style-type: none"> ○ Give correction per DMMP if it has been at least 3 hours since last correction ○ Encourage oral fluids ○ Recheck in 2 hours • Ketones moderate to large (1.0 or greater) <ul style="list-style-type: none"> ○ Call parent/guardian as child should be treated at home ○ If unable to reach parent, monitor and call diabetes care provider for assistance ○ Encourage oral fluids ○ See note below • If Unable to check for ketones or child is symptomatic, follow plan for Table 4: Exercise and School Attendance
<ul style="list-style-type: none"> • Glucose readings may come from CGM or fingerstick unless indicated otherwise. • If at any time a child (with or without a pump) has moderate to large ketones or blood ketones \geq (greater than or equal to) 1.0 mmol/L and the student has labored breathing, change in mental status and/or may be dehydrated – call 911. • <i>Symptomatic:</i> Flu-like symptoms, nausea and/or vomiting, abdominal pain, severe drowsiness, rapid, shallow or deep breathing, confusion. 	

**Table 3: Hyperglycemia for Students on Insulin Pump:
Glucose > (greater than) target as indicated in orders/DMMP**

Scenario	Action
Glucose 150-300 mg/dL before meal	<ul style="list-style-type: none"> Give correction plus carb dose per pump calculator
Glucose 150-300 mg/dL outside of mealtime	<ul style="list-style-type: none"> Non-Medical staff call SN for instruction If > (greater than) 2 hours since last insulin dose, give correction per pump calculator
Glucose > 300 mg/dL before meal Non-symptomatic*	<ul style="list-style-type: none"> Give correction plus carb dose per pump calculator Recheck glucose in 2 hours If Glucose remains > 300 mg/dL at recheck, follow instructions below
Glucose > 300 mg/dL outside of mealtime Non-symptomatic*	<ul style="list-style-type: none"> If > 2 hours since last insulin dose, give correction per pump calculator Recheck in 2 hours If glucose remains > 300 mg/dL at recheck, follow instructions below as insulin may need to be given manually and/or site changed by parent or independent student
Glucose > 300 mg/dL for at least 2 hours of duration OR *symptomatic as described above OR meter reads “HI” <ul style="list-style-type: none"> Use highest reading meter goes to (400-600 mg/dL) 	<ul style="list-style-type: none"> Non-Medical staff call SN/CCHC for instruction Check ketones* <ul style="list-style-type: none"> Ketones negative (less than 0.6 mmol/L) <ul style="list-style-type: none"> If > 2 hours since last insulin dose, give correction per pump calculator Recheck glucose in 2 hours. if > 250 mg/dL recheck ketones Ketones trace to small (0.6-1.0 mmol/L) <ul style="list-style-type: none"> Encourage oral fluids If >2 hours since last bolus, give correction per pump calculator Retest glucose and ketones in 2 hours Ketones moderate or greater (> 1.0 mmol/L) <ul style="list-style-type: none"> Call parent/guardian as child should be treated at home If unable to reach parent, monitor and call diabetes care provider for assistance. Encourage oral fluids See note below <p>* If unable to check for ketones or child is symptomatic, follow plan in Table 4 below.</p>
<ul style="list-style-type: none"> Glucose readings may come from CGM or fingerstick unless indicated otherwise. If at any time a child (with or without a pump) has moderate to large ketones or blood ketones ≥ 1.0 mmol/L and the student has labored breathing, change in mental status, and/or may be dehydrated – call 911. <i>Symptomatic:</i> Flu-like symptoms, nausea and/or vomiting, abdominal pain, severe drowsiness, rapid, shallow or deep breathing, confusion. 	

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Table 4: Hyperglycemia & Exercise and School Attendance:

*Definition of *Symptomatic* as used below: Flu-like symptoms, nausea and/or vomiting, abdominal pain, severe drowsiness, rapid, shallow or deep breathing, confusion.

Key: < (less than) > (greater than)

IF Child's Symptoms & BG level are...	and Ketone Level is ... then	Exercise	Stay in School
> 300 mg/dL first time, no symptoms	Not required <i>unless on pump</i>	Yes	Yes
> 300 mg/dL - 2 consecutive times (for 2 hours or more in duration), no symptoms	Negative to small	Yes	Yes
> 300 mg/dL <i>with symptoms*</i>	Negative or any ketones	No	No
> 300 mg/dL, with or without symptoms and urine ketones are moderate-large or blood ketones are ≥ 1.0	Urine: Moderate-Large or blood ketones ≥ 1.0 mmol/L	No	No
> 300 mg/dL, 2 consecutive times (for 2 hours or more in duration), <i>no symptoms</i>	<i>Unable to check ketones</i>	No	Yes
> 300 mg/dL, with symptoms*	<i>Unable to check ketones</i>	No	No

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