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# Helping the Student with Diabetes Succeed: A GUIDE FOR SCHOOL PERSONNEL



*ADA's Helping the Student with Diabetes Succeed:  
A Guide for School Personnel*  
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## A Note About this Guide from the American Diabetes Association

The Safe at School® Working Group of the American Diabetes Association® (ADA) is pleased to provide this updated guide reflecting important changes in diabetes technology and treatment in the school setting, including an updated Diabetes Medical Management Plan (DMMP). In early 2020, the National Diabetes Education Program (NDEP) decided to sunset the NDEP brand including the school guide, *Helping the Student with Diabetes Succeed: A Guide for School Personnel*. The ADA has taken on leadership of this project to align with best practices in the school setting and legal protections for students with diabetes.

Since its first publication in 2003, the guide has been a critical resource for school nurses, diabetes providers, and policy makers nationwide to ensure that students with diabetes receive care in accordance with best practice and are treated fairly in accordance with federal and state laws. The ADA is committed to ensuring the guide continues to be the preeminent authority on diabetes care in the school setting.

In addition to this updated version being available on **the ADA's website**, new and supplemental resources will continually be updated on the website as well. As always, our goal is to provide schools, diabetes care health care providers, families, and others with current recommendations and information to ensure the implementation of measures and policies that support optimal diabetes care in the school setting. We are confident that this important resource will continue to provide the most effective path to this goal.

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Learn more about Safe at School at [diabetes.org/safeatschool](https://diabetes.org/safeatschool).

Discover training resources at [diabetes.org/sastraining](https://diabetes.org/sastraining).

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## Acknowledgments

Many members of the ADA's Safe at School Working Group have worked tirelessly to update and add new information to our guide, *Helping the Student with Diabetes Succeed: A Guide for School Personnel* (2022).

Their contributions and the sharing of their expertise, dedication, and assistance were invaluable.

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While the American Diabetes Association attempts to ensure that all information is accurate and current, this general information about potential legal protections and medical best practices is not a substitute for individualized legal, medical, or other expert advice and assistance. The American Diabetes Association, its staff and volunteers, do not provide legal or medical advice or representation. For detailed legal advice or representation, contact and consult an independent attorney, and for health care consultation and advice, consult with a professional health care provider.

# Introduction

Diabetes is one of the most common chronic diseases in school-aged children, affecting about 283,000 people under age 20 in the United States. According to **recent estimates**, about 23,500 youths are diagnosed with type 1 and type 2 diabetes each year. It is important to remember that these students are individuals first--who just happen to have diabetes. Please avoid the use of the label “diabetic” when referring to all students with diabetes.

Diabetes is a serious chronic disease in which blood glucose (blood sugar) levels are above normal due to defects in insulin production, insulin action, or both. As the sixth leading cause of death by disease in the United States, long-term complications of diabetes include heart disease, stroke, blindness, kidney failure, nerve disease, gum disease, and amputation of the foot or leg. Although there is no cure, diabetes can be managed and complications can be delayed or prevented.

Diabetes must be managed 24 hours a day, 7 days a week. For students with type 1 diabetes and for some with type 2 diabetes, that means careful monitoring of their blood glucose levels and administering multiple doses of insulin by injection or with an insulin pump throughout the school day to optimize their blood glucose and minimize complications. Coordination and collaboration among members of the school health team, the student’s parents/guardians, and the student’s personal diabetes health care team are essential for helping students manage their diabetes in the school setting.

Diabetes is a serious chronic disease in which blood glucose (blood sugar) levels are above normal due to defects in insulin production, insulin action, or both.

Diabetes must be managed 24 hours a day, 7 days a week.

MEMBERS OF THE SCHOOL HEALTH TEAM	MEMBERS OF THE STUDENT’S PERSONAL DIABETES HEALTH CARE TEAM
<ul style="list-style-type: none"><li>■ Student with diabetes</li><li>■ Parents/guardians</li><li>■ School nurse</li><li>■ Other school health care personnel such as the district school health coordinator and physician</li><li>■ Trained diabetes personnel</li><li>■ Administrators</li><li>■ Principal</li><li>■ 504/IEP coordinator</li><li>■ Office staff</li><li>■ Student’s teacher(s)</li><li>■ School psychologist or guidance counselor</li><li>■ Coach, bus driver, lunchroom, and other school staff members</li></ul>	<ul style="list-style-type: none"><li>■ Student with diabetes</li><li>■ Parents/guardians</li><li>■ Medical doctor/advanced practice provider</li><li>■ Nurse</li><li>■ Registered dietitian nutritionist</li><li>■ Diabetes care and education specialist</li><li>■ Other clinical diabetes care team members, such as behavioral and other specialists</li></ul>



## Purpose of the School Guide

The purpose of this guide is to educate school personnel about effective diabetes management and to share a set of practices that enable school personnel to ensure a safe learning environment for students with diabetes, particularly those who use insulin to manage the disease. The school health team and the training approach for school-based diabetes management explained in this guide builds on what most schools are already doing to support children with chronic diseases.

**The practices shared in this guide are not necessarily required by the federal laws enforced by the U.S. Department of Education and/or the U.S. Department of Justice for each student with diabetes.** This guide can be used, however, in determining how to address the needs of students with diabetes. The individual situation of any particular student with diabetes will affect what is legally required for that student.

In addition, this guide does not address state and local laws, because the requirements of these laws may vary from state to state and school district to school district. This guide should be used in conjunction with federal as well as state and local laws, and in accordance with the student's individualized Diabetes Medical Management Plan (DMMP).

**The diabetes management and practices in this guide may be adapted for the childcare setting.** (See *Care of Young Children With Diabetes in the Child Care Setting: A Position Statement of the American Diabetes Association* Diabetes Care 2014;37:2834–2842 | DOI: 10.2337/dc14-1676)

### Effective diabetes management is crucial for:

- The immediate safety of students with diabetes
- The long-term health of students with diabetes
- Ensuring students with diabetes are ready to learn and to participate fully in school activities
- Minimizing the possibility that diabetes-related emergencies will disrupt classroom/educational activities

This guide should be used in conjunction with federal as well as state and local laws, and in accordance with the student's individualized Diabetes Medical Management Plan (DMMP).

Diabetes management training for school personnel is essential to ensure effective school-based diabetes management. Three levels of training are needed.

## LEVEL 1

**All school personnel should receive training** that provides a basic understanding of diabetes, how to recognize and respond to the signs and symptoms of low blood glucose (hypoglycemia) and high blood glucose (hyperglycemia), and who to contact immediately in case of an emergency.

## LEVEL 2

**Classroom teachers and all school personnel who have responsibility for students with diabetes throughout the school day** should receive Level 1 training plus additional training to carry out their individual roles and responsibilities and to know what to do in case of a diabetes emergency.

## LEVEL 3

**One or more school staff members should receive in-depth training about diabetes and routine and emergency care for each student with diabetes** from a school nurse, a certified diabetes care and education specialist (CDCES), or other qualified health care professional with experience in diabetes. This training will help ensure that a school staff member is always available to help all students with diabetes in case of an emergency and to help younger or less experienced students or those with additional physical, developmental, or emotional impairments perform diabetes care tasks (e.g., administering insulin, monitoring blood glucose levels, etc.).

Nonmedical school personnel who receive Level 3 training, called “trained diabetes personnel” in this guide, can be supervised by the school nurse to perform diabetes care tasks safely in the school setting. In your school, these individuals may be known as unlicensed assistive personnel, assistive personnel, paraprofessionals, trained nonmedical personnel, or designated trained school staff.

## Organization of the School Guide

Organized in six sections, the guide includes background information and tools for school personnel to help students manage diabetes effectively.

### 1

#### DIABETES OVERVIEW

Provides key information about diabetes, how the disease is managed, health care and education plans for students with diabetes, and the essential elements for planning and implementing effective diabetes management in school. The Diabetes Overview also addresses psychosocial issues, the importance of diabetes self-management, and the typical ages at which children are able to perform various diabetes care tasks with and without supervision.

Users of previous editions of the School Guide will find updated information on:

- Diabetes technologies, equipment, supplies, smartphone applications, and web-based platforms to assist in glucose monitoring and insulin administration
- Meal planning, carbohydrate (carb) counting, and insulin-to-carb dosing/ratios
- Psychosocial aspects of diabetes care and information on transition to independent management
- Resources and materials related to topics in the Diabetes Overview

The Diabetes Overview should be distributed to all school personnel who may be responsible for the safety of students with diabetes.

### 2

#### ACTIONS FOR SCHOOL PERSONNEL, PARENTS/GUARDIANS, AND STUDENTS

Defines the roles and responsibilities of administrators, school nurses, key school staff members, the parents/guardians, and the student with diabetes—the members of the school health team. The Actions pages should be distributed to all school personnel who may be responsible for the safety of students with diabetes throughout the school day and at school-sponsored activities.

### 3

#### TOOLS FOR EFFECTIVE DIABETES MANAGEMENT

Contains important tools for helping schools implement effective diabetes management: a sample DMMP and emergency care plans for hypoglycemia and hyperglycemia.

- The **DMMP** is completed by the student's personal diabetes health care team and contains the medical orders that are the basis for the student's health care and education plans.
- The **emergency care plans for hypoglycemia and hyperglycemia**, based on the medical orders, summarize how to recognize and treat hypoglycemia and hyperglycemia and who to contact for help. These plans, developed by the school nurse, should be distributed to all school personnel who have responsibility for students with diabetes during the school day and during school-sponsored activities.

## 4

### **SCHOOL RESPONSIBILITIES UNDER FEDERAL LAWS**

Provides an overview of federal laws that address schools' responsibilities for students with diabetes, including confidentiality requirements. In applying the laws, schools must consider each student on an individualized basis. What is appropriate for one student may not be appropriate for another student.

## 5

### **GLOSSARY OF DIABETES TERMS**

Provides comprehensive explanations of the medical and technical terms used in this guide.

## 6

### **ADDITIONAL READING**

Lists publications related to diabetes in children and diabetes management in the school setting.

# Diabetes Overview

## What Is Diabetes?

**Diabetes is a chronic disease in which blood glucose (blood sugar) levels are above normal.**

Glucose, an important source of energy for the body, is made by the body from food that primarily contains carbohydrate. Insulin, a hormone made in the pancreas, allows glucose in the blood to enter the body's cells where it is used for energy.

**Diabetes occurs when the pancreas produces little or no insulin or when the body's cells are not able to access and/or use insulin properly.**

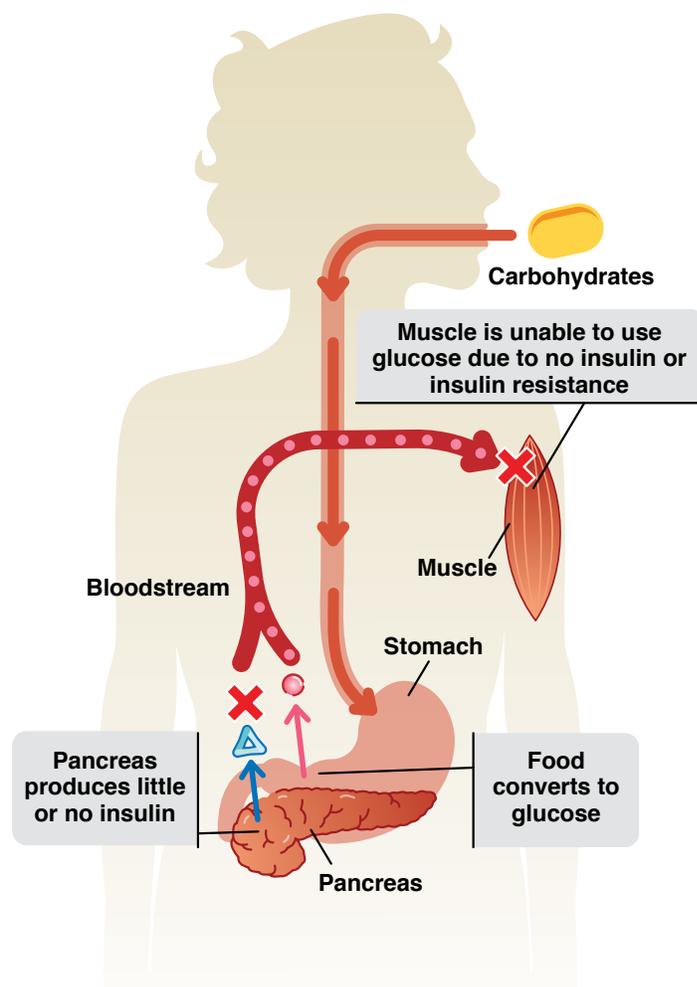
As a result, glucose cannot enter the cells and be used as energy for the body. Glucose builds up in the blood and is transported to the kidney, where it is eliminated from the body in the urine. Thus, the body loses its main source of energy even though the blood contains large amounts of glucose. The additional glucose in the urine causes additional loss of water, giving rise to more frequent urination.

When insulin is no longer made by the body, it must be provided by another source—insulin injections, an insulin pump, or by insulin inhalation. When the body does not use insulin properly, people with diabetes may take insulin or other glucose lowering medications. **Neither insulin nor other medications, however, are cures for diabetes, they only help to manage the disease.**

Treating diabetes is important. Over the years, ongoing high blood glucose can lead to serious health problems. If not managed effectively, diabetes can affect the blood vessels, eyes, kidneys, nerves, gums, and teeth, making it the leading cause of adult blindness, kidney failure, and non-traumatic lower-limb amputations. Poorly managed diabetes also increases a person's risk for heart disease and stroke.

Some of these problems can occur in teens and young adults who develop diabetes during childhood. The good news is that research shows these problems can be greatly reduced, delayed, or possibly prevented through intensive treatment that keeps blood glucose levels near normal.

**The three main types of diabetes are type 1, type 2, and gestational diabetes.**



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## TYPE 1 DIABETES

Type 1 diabetes, formerly called juvenile diabetes or insulin-dependent diabetes, is a disease of the immune system, the body's system for fighting infection. In people with type 1 diabetes, the immune system attacks the beta cells (the insulin-producing cells of the pancreas) and severely damages and destroys them. Because the pancreas can no longer produce enough insulin, people with type 1 diabetes must take insulin daily to live.

Type 1 diabetes can occur at any age, but onset of the disease occurs most often in children and young adults. Most cases of diabetes in children under age 10 are type 1 diabetes. In adults, type 1 diabetes accounts for 5 to 10 percent of all cases of diagnosed diabetes.

### SYMPTOMS

The symptoms of type 1 diabetes are due to an increase in the level of glucose in the blood and consequently in the urine, and include increased thirst and urination, unexplained weight loss, blurred vision, and fatigue. These symptoms may be mistaken for severe flu or another rapid-onset illness. If not diagnosed and treated with insulin, the student with type 1 diabetes can lapse into a life-threatening condition known as **diabetic ketoacidosis** or DKA. Signs of DKA include vomiting, sleepiness, fruity breath, difficulty breathing, and if untreated, coma and death.

### RISK FACTORS

Although scientists have made much progress in predicting who is at risk for type 1 diabetes, they have not yet identified all the triggers that cause the immune system to attack the pancreas' beta cells. Type 1 diabetes is due to a combination of genetic and environmental factors (such as viral infections) that are beyond the individual's control. Researchers are working to further identify these factors and to control the autoimmune process that leads to type 1 diabetes.

## TYPE 2 DIABETES

Type 2 diabetes, formerly called adult-onset diabetes, is the most common form of the disease in adults. However, people can develop type 2 diabetes at any age, even during childhood, but risk for type 2 diabetes increases as people get older (increased risk is notable at age 40). A progressive disease, type 2 diabetes usually begins with insulin resistance, a condition in which cells do not respond to insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. Over time, however, the pancreas loses its ability to secrete enough insulin to control blood glucose levels after meals, overnight or during periods of fasting.

Managing type 2 diabetes requires maintaining a healthy weight and/or weight loss if overweight. Lifestyle changes such as making healthy food choices and getting regular physical activity are essential. In addition, people with type 2 diabetes may take insulin and/or other blood glucose-lowering medications to manage their diabetes.

**Type 1 Diabetes TrialNet** is an international network of researchers who are exploring ways to prevent, delay, and reverse the progression of type 1 diabetes.

## SYMPTOMS

Symptoms of type 2 diabetes may be similar to those of type 1 diabetes. A person may feel very tired or thirsty and urinate frequently due to high blood glucose levels. Other symptoms include unexplained weight loss and blurred vision. High blood pressure and elevated blood lipids (cholesterol) are associated with insulin resistance. In addition, physical signs of insulin resistance may appear, such as acanthosis nigricans, a condition in which the skin around the neck, armpits, or groin looks dark, thick, and feels velvety. This condition may be mistaken for poor hygiene.

Some children or adolescents (and adults) with type 2 diabetes may not have recognized symptoms when they are diagnosed. For that reason, it is important for the parents/guardians to know the risk factors of type 2 diabetes and to talk to their health care professionals about screening children or teens who are at high risk for type 2 diabetes.

## RISK FACTORS

The key risk factors for type 2 diabetes in youth begin with genetic risk, which is easiest to identify by having a family member who has type 2 diabetes. Other risk factors include eating a diet with excess calories and having limited physical activity leading to being overweight or obese. In addition, type 2 diabetes is more common in certain racial and ethnic groups such as African Americans, Hispanics/Latinos, American Indians, Alaska Natives, Asian Americans, Native Hawaiians and other Pacific Islanders. Other risk factors include having a mother who had diabetes during her pregnancy, having high blood pressure, high cholesterol, abnormal lipid levels, polycystic ovary syndrome, and being inactive.

For children and teens at risk, health care professionals can encourage, support, and educate the entire family to make lifestyle changes that may delay—or prevent—the onset of type 2 diabetes. Changes include reaching and maintaining a healthy weight by making healthy food choices and engaging in regular physical activity.

## GESTATIONAL DIABETES

Diabetes can develop during pregnancy, which is called gestational diabetes (GDM) and is caused by the hormones of pregnancy. These hormones can cause insulin resistance or a shortage of insulin. Although gestational diabetes usually goes away after the baby is born, a female who has had it is at increased risk for developing diabetes later in life. In addition, the offspring of a pregnancy affected by gestational diabetes is at increased risk for obesity and developing type 2 diabetes.

## OTHER TYPES OF DIABETES:

Besides type 1, type 2 and gestational diabetes, there are other less common forms of diabetes that include maturity onset diabetes of youth (MODY), cystic fibrosis related diabetes (CFRD), medication-induced diabetes, and diabetes due to surgical pancreatectomy.

1. **MODY** is caused by an autosomal dominant gene that runs in families. The most common types do not require insulin and can generally be managed with or without oral medication. Some less common forms of MODY do require insulin and can be associated with birth defects. Genetic testing is required to make the diagnosis.

- 2. CFRD** occurs in people diagnosed with cystic fibrosis and is due to the destruction of both the digestive and endocrine cells of the pancreas. The loss of beta cells in the islets of the pancreas results in high blood glucose levels and requires insulin administration.
- 3. Medication-induced diabetes** occurs secondary to medications employed in the treatment of different diseases including cancers, kidney disease, and other illnesses that may cause hyperglycemia and require insulin administration. Many patients will still require insulin therapy despite no longer taking the medication.
- 4. A pancreatectomy** removes all or part of the pancreas and typically the islet cells required for insulin secretion, thus requiring the need to administer insulin to effectively metabolize glucose.

## What Is Effective Diabetes Management at School?

Maintaining optimal blood glucose targets

Assisting the student with performing diabetes care tasks

Designating trained diabetes personnel

### MAINTAINING OPTIMAL BLOOD GLUCOSE MANAGEMENT

The goal of effective diabetes management is to **keep blood glucose levels within a target range** determined by the student's personal diabetes health care team.

Optimal blood glucose targets help promote normal growth and development and to prevent the immediate dangers of blood glucose levels that are too high or too low. Maintaining blood glucose levels within the target range also can help to optimize the student's ability to learn by avoiding the effects of **hypoglycemia** (low blood glucose) and **hyperglycemia** (high blood glucose) on cognition, attention, behavior, and athletic ability. In the long term, effective diabetes management helps to prevent or delay the serious complications of diabetes such as heart disease, stroke, blindness, kidney failure, gum disease, nerve disease, and amputations of the foot or leg.

The key to maintaining optimal blood glucose management is to carefully balance food intake, physical activity, **insulin**, and/or other medication(s). **Generally, food with carbohydrates increases blood glucose levels, while physical activity, insulin, and diabetes medications lower blood glucose levels.** Several other factors, such as growth and puberty, physical stress, illness, injury, and emotional stress hormones can also influence blood glucose levels.



Managing blood glucose is a constant juggling act—**24 hours a day, 7 days a week.**



Many students with diabetes check their blood glucose levels throughout the day with a **blood glucose meter** and, increasingly, a **continuous glucose monitor (CGM)**. When blood glucose levels are too low or too high, corrective actions need to be taken.

## ASSISTING THE STUDENT WITH PERFORMING DIABETES CARE TASKS

**Diabetes management is a constant task 24 hours a day, 7 days a week.**

Many students will be able to handle all or almost all of their nonemergency diabetes care tasks independently. Others, because of age, developmental level, inexperience, or other barriers to self-management, will need supervision and/or help from school personnel (**see *Assisting the Student in the Transition to Diabetes Self-Management***).

**All students with diabetes will need help during an emergency, which may happen at any time.** School personnel need to be prepared to provide diabetes care at school and at all school-sponsored activities in which a student with diabetes participates.

The school nurse is the most appropriate person in the school setting to provide care for a student with diabetes. Many schools, however, do not have a full-time nurse, and sometimes a single nurse must cover more than one school. Moreover, even when a nurse is assigned to a school full time, they may not always be available during the school day, during extracurricular activities, or on field trips.

In circumstances where a nurse is absent or unavailable, the school remains responsible for arranging and implementing the agreed upon diabetes care that is necessary to enable the child to participate in school and school-related activities.

**Low blood glucose levels**, which can be life-threatening, present the **greatest immediate danger** to students with diabetes.

The school nurse or another qualified health care professional plays a major role in selecting and training appropriate staff and providing professional supervision and consultation regarding routine and emergency care of the student with diabetes.

## DESIGNATING TRAINED DIABETES PERSONNEL

Nonmedical school personnel—called “trained diabetes personnel” in this guide—can be trained and supervised to perform diabetes care tasks safely in the school setting. School staff who may be trained to provide diabetes care include:

- Health aides
- Teachers
- Physical education personnel
- School principals
- School secretaries
- School psychologists or guidance counselors
- Food service personnel
- And other appropriate personnel

Some schools may call these individuals unlicensed assistive personnel, assistive personnel, paraprofessionals, or trained nonmedical personnel. Trained diabetes personnel may have these responsibilities as a part of their listed job responsibilities or may be identified from existing school staff who are willing to serve in this role.

The school or district nurse has a critical role in training and supervising trained diabetes personnel to ensure the health and safety of students with diabetes. In addition, a student’s health care provider (i.e., diabetes doctor or advanced practice provider) or a CDCES may assist in training nonmedical personnel in diabetes care. Given the rapid changes in diabetes technology, therapies, and evidence-based practice, the school nurse who provides care to students with diabetes and facilitates diabetes management training for school personnel has the professional responsibility to acquire and maintain knowledge and competency related to diabetes management (**see Train School Personnel**).

Care tasks performed by trained diabetes personnel may include **blood glucose monitoring**, continuous glucose monitoring, insulin administration (by **syringe**, inhalation device, **pen**, or assistance with a **pump**), **glucagon** administration, **ketone testing**, and basic **carbohydrate counting**. In addition to learning how to perform general diabetes care tasks, trained diabetes personnel should receive student-specific training and be supervised by the school nurse or another qualified health care professional (**see Train School Personnel**).

The school nurse should refer to their state’s Nurse Practice Act and rules and regulations regarding training and/or delegation of diabetes care tasks in the school setting. Once it has been determined that a student-specific diabetes care task may be delegated, the school nurse, in collaboration with the principal, takes the lead in identifying, training, and providing ongoing supervision of trained diabetes personnel. This will ensure that at least one trained diabetes personnel is available to provide care when a school nurse is not available.



The school nurse is the most appropriate person in the school setting to provide care for a student with diabetes.

The school nurse, in collaboration with the principal, takes the lead in identifying, training, and providing ongoing supervision of trained diabetes personnel. This will ensure that at least one trained diabetes personnel is available to provide care when a school nurse is not available.

## How Do You Plan Effective Diabetes Management in the School Setting?

**Assemble a school health team**

**Review the federal and state laws**

**Assemble the student's health care plans**

- DMMP (prepared by the student's personal diabetes health care team)
- Individualized health care plan (IHP) (prepared by the school nurse)
- Emergency care plans for hypoglycemia and hyperglycemia (prepared by the school nurse)

**Prepare the student's Section 504 Plan, Individualized Education Program (IEP), or other written education plan**

**Train school personnel**

**Obtain and use diabetes management training resources**

### ASSEMBLE A SCHOOL HEALTH TEAM

**Collaboration and cooperation are key elements in planning and implementing successful diabetes management at school.** As is true for students with other chronic diseases, students with diabetes are more likely to succeed in school when the student's school health team and the student's **personal diabetes health care team** work together.

To work collaboratively, a **school health team** should be assembled that includes people who are knowledgeable about diabetes, the school environment, and federal and state education and nursing laws. **School health team members should include:**

- The student with diabetes
- The parents/guardians
- The school nurse and other health care personnel
- The staff members designated as **trained diabetes personnel**
- Administrators
- The principal
- The 504/IEP coordinator
- Office staff
- Student's teacher(s)
- The school psychologist or guidance counselor
- The coach
- Lunchroom and other school staff members



To work collaboratively, a school health team should be assembled.

The school health team is distinct from the **student's personal diabetes health care team**. Members of this team include:

- The student with diabetes
- The parents/guardians
- The student's doctor/advanced practice provider
- Nurse
- **Registered dietitian nutritionist**
- Certified diabetes care and education specialist (CDCES)
- Other health care providers involved in the student's care

The school health team members work together to implement the medical orders in the **DMMP** developed by the student's personal diabetes health care team using the strategies outlined by the school nurse in the IHP. In addition, the school health team should be part of the group that develops and implements the student's Section 504 Plan, **IEP, or other written education plan**. These plans are developed to address students' needs for services to manage diabetes safely and effectively in school, as required under **Section 504 of the Rehabilitation Act of 1973** or the **Individuals with Disabilities Education Act**.

The school health team members work together to implement the medical orders in the DMMP developed by the student's personal diabetes health care team using the strategies outlined by the school nurse in the IHP.

## MEMBERS OF THE SCHOOL HEALTH TEAM

- Student with diabetes
- Parents/guardians
- School nurse
- Other school health care personnel such as the district school health coordinator and physician
- Trained diabetes personnel
- Administrators
- Principal
- 504/IEP coordinator
- Office staff
- Student's teacher(s)
- School psychologist or guidance counselor
- Coach, bus driver, lunchroom, and other school staff members

## MEMBERS OF THE STUDENT'S PERSONAL DIABETES HEALTH CARE TEAM

- Student with diabetes
- Parents/guardians
- Medical doctor/advanced practice provider
- Nurse
- Registered dietitian nutritionist
- Diabetes care and education specialist
- Other clinical diabetes care team members, such as behavioral and other specialists

## REVIEW THE FEDERAL LAWS

Three federal laws address the school's responsibilities to help students with diabetes:

- Section 504 of the Rehabilitation Act of 1973 (Section 504)
- The Americans with Disabilities Act of 1990 (**ADA**)
- The Individuals with Disabilities Education Act (IDEA)

In addition, the **Family Educational Rights and Privacy Act (FERPA)** and IDEA protect the student's privacy. FERPA and IDEA prohibit schools, with certain exceptions, from disclosing personally identifiable information in a student's education

record, unless the school obtains the prior written consent of the student's parents/guardians or the eligible student (i.e., a student who is 18 years old or older or who attends an institution of post-secondary education).

See **34 CFR § 99.5(b)**.

These federal laws provide a framework for planning and implementing effective diabetes management in the school setting, for preparing the student's education plan, and for protecting the student's privacy and access to appropriate care. The requirements of federal laws must always be met (**see School Responsibilities Under Federal Laws**). School administrators and nursing personnel also should determine whether there are applicable state and local laws and factor them into helping the student with diabetes at school. State and local laws, including those concerning who can administer medications at school, cannot interfere with the rights of students with disabilities guaranteed by Section 504 and Americans with Disabilities Act.

These federal laws provide a framework for planning and implementing effective diabetes management in the school setting, for preparing the student's education plan, and for protecting the student's privacy and access to appropriate care.

## ASSEMBLE THE STUDENT'S HEALTH CARE PLANS

Health care plans outline how each student's diabetes will be managed. These plans help students, their families, school personnel, and the student's personal diabetes health care team to know what is expected of each of them. These expectations should be laid out in writing in the following health care plans:

- A DMMP (prepared by the student's personal diabetes health care team)
- An IHP (prepared by the school nurse)
- Emergency care plans for hypoglycemia and hyperglycemia (prepared by the school nurse)

### DIABETES MEDICAL MANAGEMENT PLAN

The **DMMP**, prepared by the student's personal diabetes health care team, contains the medical orders tailored for each student. The student's health care provider should sign this plan. The DMMP is the basis for all the health care and education plans designed to help the student manage diabetes effectively at school. Although the DMMP is not required by Section 504, the Americans with Disabilities Act, or IDEA, the information it contains can be useful in addressing the requirements of these federal laws for the student with diabetes. Some diabetes clinics may use their own form that is customized for their location.

The school nurse uses the information in the DMMP to develop the student's individualized health care plan and the emergency care plans for hypoglycemia and hyperglycemia. This information also should be incorporated into any Section 504 plan, other education plan, or IEP.

**Information in the DMMP may include:**

- Date of diagnosis
- Contact information (parents/guardians and student's physician/health care provider)
- Specific medical orders for checking blood glucose, administering **insulin** and other medications, and **carbohydrate counting**
- Assessment of student's self-care skills for performing diabetes care tasks
- Typical signs, symptoms, and prescribed treatment for **hypoglycemia** and **hyperglycemia**

The DMMP, prepared by the student's personal diabetes health care team, contains the medical orders tailored for each student.

- Student's diabetes equipment and supplies, including **blood glucose meter**, CGM, insulin delivery devices (including insulin pumps), and **glucagon**
- Use of smartphone device for monitoring
- Additional monitoring and treatment for **ketones**
- Meal and snack plan
- Physical activity plan
- 72-hour disaster, lockdown, or emergency plan

The student's personal diabetes health care team should complete and approve the DMMP before the student returns to school, immediately after diagnosis, or when a student transfers to a new school. The DMMP should be reviewed and updated each school year or upon a change in the student's prescribed care plan, level of self-management, or school circumstances (e.g., a change in schedule) or at the request of the student or his or her parents/guardians.

## INDIVIDUALIZED HEALTH CARE PLAN

The IHP is developed by the school nurse in collaboration with the student's personal diabetes health care team to implement the student's DMMP. The IHP, sometimes called the nursing care plan, is based on the medical orders in the student's DMMP and incorporates an assessment of the school environment as well as student-specific information (e.g., familial, psychosocial, and developmental information).

Although the IHP is not required by Section 504, the Americans with Disabilities Act, or IDEA, the information it contains can be useful in addressing the requirements of these federal laws for the student with diabetes.

The district or school nurse uses the information in the DMMP and the nurse's additional assessment findings to outline the diabetes management strategies and personnel needed to meet the student's health goals. The school nurse reviews the IHP with the student and the parents/guardians before it is implemented and establishes a timeline to revisit the plan periodically to evaluate progress toward desired health goals throughout the school year.

### Information in the IHP may include:

- Plan for maintaining the student's blood glucose within the target range specified in the DMMP (including strategies for blood glucose monitoring, administering insulin, treating hypoglycemia and hyperglycemia, adhering to the student's meal plan, and participating in physical activity)
- Supplies needed and where they will be kept
- Use of smartphone/device, school phone, CGM, or computer to log data and/or to notify the school nurse or parents/ guardians of blood glucose levels
- Need for unlimited access to the restroom and water
- Nutritional needs, including provisions for meals and snacks
- Participation in all school-sponsored activities and field trips, with coverage provided by the school nurse or trained diabetes personnel
- Guidelines for communicating with the family and the student's personal diabetes health care team
- List of trained diabetes personnel and the diabetes care tasks they will perform
- Plan and timeline for training and supervising trained diabetes personnel (**see Train School Personnel**)

The IHP is developed by the school nurse in collaboration with the student's personal diabetes health care team to implement the student's DMMP.

- Plan and timeline to train other school personnel (e.g., teachers, physical education instructors, food service, coaches and athletic directors, and transportation personnel **(see Train School Personnel.)**)
- Timeframe for ongoing review of student outcomes
- Strategies to ensure the student is not subject to inappropriate penalties for absences for health care appointments and to provide accommodations during the school day
- Plan for the student to gain independence in managing their diabetes at school
- Maintenance of confidentiality and the student's right to privacy

## EMERGENCY CARE PLANS FOR HYPOGLYCEMIA AND HYPERGLYCEMIA

The emergency care plans for **hypoglycemia** and **hyperglycemia** are based on the medical orders in the student's DMMP. The school nurse usually will coordinate developing these emergency plans. The plans for individual students summarize how to recognize and treat hypoglycemia and hyperglycemia and what to do in an emergency.

## PREPARE THE STUDENT'S EDUCATION PLAN

School health team members should be part of the group that plans how the DMMP will be implemented and be part of the group that determines the student's eligibility under Section 504, the Americans with Disabilities Act, and/or IDEA. The school health team members should also be part of the group that determines the student's needs for services to manage diabetes safely and effectively in school.

The information collected about needed services should be included in any Section 504 Plan, other education plan, or IEP developed for the student and should be distributed to all school personnel who will be involved with implementing these plans.

- Section 504 Plan is the commonly used term for a plan of services developed under Section 504 of the Rehabilitation Act. For a student with diabetes, the plan would be developed and reviewed by a team that usually includes: the school nurse, parents/guardians, 504 coordinator, school administrator, school psychologist or guidance counselor, and teacher(s).
- An IEP is required for students with disabilities who receive special education and related services under the IDEA. For a student with diabetes, the IEP would be developed and reviewed by the IEP team, including: the parents/guardians, at least one general education teacher and one special education teacher of the student, a qualified school district representative such as the IEP coordinator or school administrator, an individual who can interpret the instructional implications of the student's needs, and, at the discretion of the parents/guardians or school district, other personnel with knowledge or special expertise regarding the student—usually the school nurse, school psychologist or guidance counselor, and/or trained diabetes personnel.

The information in the DMMP and IHP should be used in developing either a Section 504 Plan or an IEP, but it is not a substitute for these plans.

Emergency care plans should be distributed to all school personnel who have responsibility for **students with diabetes** throughout the school day and during school-sponsored activities.

It is strongly recommended that the information in the education plan be agreed upon before each school year begins (or upon diagnosis of diabetes) and be documented and signed by a representative of the school and the parents/guardians.

**Individual students with diabetes have different needs, but their education plans are likely to address the following common elements:**

- Where and when blood glucose monitoring and treatment will take place
- Identity of trained diabetes personnel—the staff members who are trained to perform or assist with diabetes care tasks such as monitoring blood glucose, administering insulin and glucagon, and treating hypoglycemia and hyperglycemia
- Location of and ready access to the student’s diabetes management supplies
- Use of smartphone/device, school phone, insulin pump, CGM, or computer to log data and/or to notify the school nurse or parents/guardians of blood glucose levels
- Need for easy access to the restroom and water
- Nutritional needs, including provisions for meals and snacks
- Full participation in all school-sponsored activities and field trips, with coverage provided by trained diabetes personnel
- Alternative times and arrangements for academic exams if the student is experiencing hypo or hyperglycemia
- Permission for absences without penalty for health care appointments or illness
- The opportunity to make up schoolwork missed due to health care appointments or prolonged illness, including appropriate arrangements for meeting educational needs during or following an illness
- Maintenance of confidentiality and the student’s right to privacy

It is strongly recommended that the information in the education plan be agreed upon before each school year begins (or upon diagnosis of diabetes) and be documented and signed by a representative of the school and the parents/guardians.

The student’s education plans help ensure that school personnel, the parents/guardians, and students know their responsibilities. The parents/guardians must be notified in a timely manner of any proposed changes in the provision of services and must be included in related discussions (**see School Responsibilities Under Federal Laws**).

**PLANS FOR DIABETES MANAGEMENT (UPON PARENT REQUEST)**

PLAN	CONTENTS	WHO PREPARES IT
■ DMMP	■ Medical orders: all aspects of routine and emergency diabetes care	■ Student’s personal diabetes health care team and parents/guardians
■ IHP	■ School nursing care plan: how diabetes care, as prescribed in the DMMP, will be delivered in the school	■ School nurse
■ Emergency care plans for hypoglycemia and hyperglycemia	■ Tool for school staff: how to recognize and treat hypoglycemia or hyperglycemia and what to do in an emergency	■ School nurse
■ Section 504 Plan, other education plan, IEP, or other written accommodations plan	■ Education plans: address each student’s needs for services to manage their diabetes safely and effectively in school, where required under Section 504, the Americans with Disabilities Act, or the IDEA	■ 504 team ■ IEP team

## TRAIN SCHOOL PERSONNEL

**Diabetes management training for school personnel is essential to facilitate appropriate care for students with diabetes.**

All school personnel should receive the appropriate level of diabetes care training suited to their responsibilities for students with diabetes. When a school nurse is assigned to the school (or school district), they are the key school staff member who leads and coordinates the provision of health care services for a student with diabetes at school and at school-related activities. Training should occur before the beginning of each school year and should be repeated when an enrolled student is first diagnosed with diabetes or when a student with diabetes enrolls in the school. Periodic assessment refresher training as needed is recommended throughout the school year. Additional training will be required if a student changes their mode of delivery of insulin therapy or glucose monitoring (e.g. transitions to an insulin pump or CGM).

### DIABETES MANAGEMENT TRAINING PROFESSIONALS

A diabetes-trained health care professional, such as a school nurse or CDCES, develops and implements the training program, provides a demonstration of the tasks, evaluates the ability of the trained diabetes personnel to perform the task competently, and establishes a plan for ongoing supervision throughout the school year. Diabetes care must be carried out as specified in the student's DMMP and/or other **health care plans or provider's orders**. The school nurse or other qualified health care professional also documents the instruction, competency evaluation, and ongoing supervision that is provided.

Diabetes technology, therapies, and evidence-based practices are changing rapidly. The school nurse, who provides care to students with diabetes and facilitates diabetes management training and/or delegation for school personnel, has the professional responsibility to acquire and maintain current knowledge and competency related to diabetes management on a regular and ongoing basis (see Diabetes Management Training Resources).

### TIERED DIABETES MANAGEMENT TRAINING FOR SCHOOL PERSONNEL

**Three levels of training are needed to keep students with diabetes safe at school.** Training should be designed to include the elements outlined below using standardized training materials.

#### LEVEL 1. DIABETES OVERVIEW AND HOW TO RECOGNIZE AND RESPOND TO AN EMERGENCY SITUATION

<b>Who</b>	<ul style="list-style-type: none"><li>■ All school personnel</li></ul>
<b>What</b>	<ul style="list-style-type: none"><li>■ General overview of diabetes</li><li>■ How to recognize and respond to signs and symptoms of hypoglycemia and hyperglycemia (and where supplies are located)</li><li>■ Who to contact for help in an emergency</li></ul>

Trained school personnel can help to ensure that students with diabetes are safe, ready to learn, and able to participate in all school-sponsored events.

All school personnel should receive the appropriate level of diabetes care training suited to their responsibilities for students with diabetes.

## LEVEL 2. DIABETES BASICS AND WHAT TO DO IN AN EMERGENCY SITUATION

<b>Who</b>	<ul style="list-style-type: none"> <li>■ School personnel who have responsibility for the student with diabetes throughout the school day (e.g., classroom, physical education, music, and art teachers and other personnel such as lunchroom staff, coaches, and bus drivers).</li> </ul>
<b>What</b>	<ul style="list-style-type: none"> <li>■ Content from Level 1 with specific instructions for what to do in case of an emergency</li> <li>■ Roles and responsibilities of individual staff members (<b>see Actions for School Personnel, Parents/Guardians, and Students</b>)</li> <li>■ Expanded overview of diabetes (types of diabetes, the role of glucose monitoring, and the importance of balancing insulin/medication with physical activity and nutrition and how it is done)</li> <li>■ Procedures and brief overview of the operation of devices (or equipment) commonly used by students with diabetes. Device specific training should be provided, as applicable.</li> <li>■ Impact of hypoglycemia or hyperglycemia on behavior, learning, and other activities</li> <li>■ The student's IHP, Section 504 Plan, other education plan, or IEP</li> <li>■ The student's emergency care plans for hypoglycemia and hyperglycemia</li> <li>■ How to activate emergency medical services in case of a diabetes emergency</li> <li>■ What to do during a schoolwide emergency (e.g., lockdown or evacuation)</li> <li>■ Tips and planning needed for the classroom and for special events</li> <li>■ Overview of the legal rights of students with diabetes in the school setting</li> <li>■ Communication plan to let school staff know the how to communicate concerns to the school nurse and parents</li> </ul>

## LEVEL 3. GENERAL AND STUDENT-SPECIFIC DIABETES CARE TASKS

<b>Who</b>	<ul style="list-style-type: none"> <li>■ One or more school staff members designated as trained diabetes personnel who will perform or assist the student with diabetes care tasks as allowed by law. Should be provided by a diabetes-trained health care professional such as the school nurse or a CDCES.</li> </ul>
<b>What</b>	<ul style="list-style-type: none"> <li>■ All information from Level 1 and Level 2 training</li> <li>■ General training on diabetes care tasks specified in the student's DMMP:             <ul style="list-style-type: none"> <li>■ Glucose monitoring</li> <li>■ Insulin administration</li> <li>■ Glucagon administration</li> <li>■ Ketone testing (urine and/or blood)</li> <li>■ Basic carbohydrate counting</li> </ul> </li> <li>■ Student-specific training, when addressing each diabetes care task, includes:             <ul style="list-style-type: none"> <li>■ Clear identification and understanding of the task as outlined in the student's DMMP</li> <li>■ Each student's symptoms and treatment for hypoglycemia and hyperglycemia</li> <li>■ Step-by-step instructions on how to perform the task using the student's equipment and supplies</li> <li>■ Clear parameters on when to perform the task, when not to do so, and when to ask for help from a health care professional</li> </ul> </li> <li>■ Communication plan so school staff know how to communicate concerns to school nurse and parents</li> <li>■ How to document care tasks that are performed</li> <li>■ Plan for ongoing evaluation of trained diabetes personnel's performance</li> </ul>

**DOCUMENTATION OF TRAINING** The school nurse or other qualified health care professional that provides the training, should document the instruction, competency evaluation, and ongoing supervision that are provided.

## DIABETES MANAGEMENT TRAINING RESOURCES

There are many resources available for training school nurses and staff about diabetes management. The ADA offers **Diabetes Care Tasks at School: What Key Personnel Need to Know**, a curriculum containing a set of training modules and corresponding DVD video segments. These materials are designed for use by the school nurse or other diabetes-trained health care professionals when training a school's trained diabetes personnel. Additional online **training resources** are also available.

- **The National Association of School Nurses (NASN)** offers NASN T1D Guidelines and online continuing education for school nurses including diabetes care, diabetes technology, and glucagon administration. NASN has position statements in Diabetes Care®, Delegation, etc. and the **School Nursing: A Comprehensive Text** (Third Edition) has a chapter on diabetes
- **Danatech** was developed to support the technology access and assessment needs of health care professionals who care for patients living with diabetes and other chronic conditions. Members of NASN have free access to resources with their membership.
- JDRF offers the **School Advisory Toolkit for Families**, a guide which includes collaborative methods for educators and parents of children with type 1 diabetes to ensure that every child enjoys the best possible school experience.
- **T1DToolkit** was designed to support diabetes education provided in clinics, and its content has been reviewed and informed by pediatric endocrinologists, certified diabetes educators, dietitians, psychologists, people with type 1 diabetes, and parents of children with type 1 diabetes.

A number of state programs have developed training curricula and documentation based on the ADA's curriculum. Local diabetes centers may offer both general and student-specific training.

Manufacturers of blood glucose meters, CGMs, insulin pens, and insulin pumps provide training materials, including apps specific to their products. Visit manufacturers' websites for more information. A list of device operation manuals and links to manufacturers' websites are included in the Additional Reading section of this guide.



## How to Help Students Implement Effective Diabetes Management

The basics for diabetes management in the school setting include the following actions. These actions are taken to help maintain blood glucose levels in the target range and to prevent hypoglycemia or hyperglycemia.

- Check (blood or sensor) glucose levels
- Administer insulin and/or other diabetes medication
- Follow an individualized meal plan/carbohydrate counting
- Promote regular physical activity
- Develop a communication plan including school staff to school nurse and parents/guardians and student's communication with parents/guardians or school nurse as needed during the school day/school-sponsored activities
- Plan for disposal of sharp objects and materials that come in contact with blood
- Recognize and treat hypoglycemia (low blood glucose)
- Recognize and treat hyperglycemia (high blood glucose)
- Plan and practice for disasters and emergencies
- Obtain menus from cafeteria to determine carbohydrate/nutrition content
- Help plan for special events, field trips, and extracurricular activities
- Address and provide support for emotional and social issues
- Understand why diabetes self-management is important and facilitate as developmentally appropriate
- Planning for transition to independent management

Students with diabetes must always have access to supplies and equipment for immediate treatment of high and low blood glucose levels.

Students with diabetes must always have access to supplies and equipment for immediate treatment of high and low blood glucose levels.

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## CHECK BLOOD/SENSOR GLUCOSE LEVELS

One of the most important diabetes management tasks is to check (or monitor) blood glucose levels throughout the day using a blood glucose meter or a CGM. Students who use a CGM may also use a blood glucose meter to verify CGM readings, according to their DMMP.

### BLOOD GLUCOSE METER

A blood glucose meter is a small portable machine used to check blood glucose levels. Before using the blood glucose meter, wash and dry hands and the test site. A dirty or wet site will affect the reading. Insert the **test strip** into the meter. Using a lancet (a small needle inserted in a spring-loaded device), perform a finger stick by pricking the side of the fingertip. Make sure to get an adequate drop of blood and apply to the test strip. The meter then gives the blood glucose level as a number on its digital display. The blood glucose meter is student-specific and should not be shared with other students. The lancet should be changed as per the manufacturer's instructions.

Check the test strips' expiration date and note when the container of test strips are opened (see manufacturer's instructions for when to dispose). Note: Heat, cold, and humidity may affect blood glucose meters and test strips and may reduce the accuracy of blood glucose readings. This is especially important when blood glucose is checked outside. Consult the manufacturer's instructions regarding the operation and storage environment for the student's blood glucose meter.

### CONTINUOUS GLUCOSE MONITOR

Many students use a **CGM**, a device that measures glucose levels and trends (rate of change) throughout the day. The CGM works through a sensor inserted under the skin that measures interstitial glucose levels (the glucose found in the fluid between cells). CGMs provide data in real-time at regular intervals which differ slightly across devices. For the real-time CGM, the monitor may be part of the **insulin pump**, or a separate device, which may include a mobile app on a smartphone/watch that is carried or worn by the student. Accommodations for carrying smartphones/watches or CGM devices should be addressed in the Section 504 plan.

CGM alerts can be set for when blood glucose levels are too high or too low, when they are increasing or decreasing at a rapid rate and provide predictive alerts. Some CGMs have an urgent low alarm set at 55mg/dl which cannot be turned off or altered (except if Android phone is on total silence/no exceptions mode). Parents should be encouraged to set alerts for when action is required (e.g., sensor glucose level of 70mg/dl or 250mg/dl). Limiting alerts to when an action/response is required, will help the student avoid alert fatigue and unnecessary disruptions in class. Never ignore a CGM alarm. Appropriate action should be taken in accordance with the student's **DMMP**.

### DATA SHARING

CGM data can be shared to multiple people at the same time via a smart device connected to the internet or a cellular data plan. Students using the data-sharing feature of their CGMs may request access to the school's wireless network to enable this feature while avoiding smart device cellular data charges. The student, parents/guardian, and school nurse should discuss data sharing options, including with school staff. Many school nurses find it helpful but may or may not have the

capacity to be able to monitor students with diabetes in real time using share technology. If this is agreed upon, an appropriate smart device is needed for remote monitoring purposes. School nurses have many responsibilities during the school day. School districts should establish clear expectations with parents for school nurses remotely monitoring CGM, including frequency of monitoring, what actions or communication will be taken, and strategies to identify and respond to alerts.

Most CGM devices have been approved by the Food and Drug Administration (FDA) for non-adjunctive insulin dosing (use for insulin dosing independent of a blood glucose measurement), but some have not. In addition, many devices do not require calibration with a blood glucose meter. Given the growing diversity of available CGM and glucose sensors, the student's DMMP must always be consulted to determine if the CGM or sensor data can be used to make treatment decisions. Even if a student is using a device approved by the FDA for treatment decisions, they may not have permission from the prescriber to do so. If CGM trend arrows are to be used for treatment, specific directions should also be indicated on the DMMP.

## GLYCEMIC TARGETS

Students should have their glycemic target range indicated on their DMMP by their diabetes provider. Glycemic targets are individualized but in general, the ADA recommendations are 70–180 mg/dl. Time in target range and minimal variability improves the student's glycemic control. Frequent glucose levels outside of target range can impact school performance and absenteeism. The school nurse should notify the parent/guardian to contact the student's diabetes provider if the student is below or above target range at the same time of day for more than two hypoglycemic episodes or three hyperglycemic episodes for three or more days per week.

## CHECKING BLOOD GLUCOSE DURING THE SCHOOL DAY

The student's personal diabetes health care team and parent/guardian may request blood or sensor glucose checks several times during the school day. Some students may maintain a record of blood glucose results in their blood glucose meter or through other monitoring technology such as a smartphone or a logbook. Logs are usually provided to the student's diabetes provider during health care visits.

Students may benefit from scheduled times to check blood/sensor glucose levels, such as before eating snacks and meals, before and after physical activity, when there are symptoms of hypoglycemia or hyperglycemia, or before boarding a bus. In some students, symptoms may be subtle. Blood glucose levels should be checked whenever symptoms are suspected. Some students can check their own blood glucose levels, some need supervision, and others need to have this task performed by a school nurse or trained diabetes personnel.

Students must be able to check their blood glucose levels and respond to levels that are too high or too low as quickly as possible. It is medically preferable to permit students to check blood glucose levels and respond to the results in the classroom or wherever they happen to be when symptoms occur. While any form of carbohydrate that contains glucose can be used for oral treatment, the preferred treatment is glucose (such as glucose tablets or gel) and can be provided in the classroom/on the playground. If a student must go elsewhere to be cared for, a responsible individual must accompany them. When in doubt, taking immediate

**Safe at School CGM document provides updates.**

**The student's personal diabetes health care team and parent/guardian may request blood or sensor glucose checks several times during the school day.**

**All students, even those who can independently check their blood glucose, may need assistance when experiencing low blood glucose levels.**

## ADVANTAGES OF CHECKING BLOOD GLUCOSE LEVELS ANY TIME AND ANY PLACE

- The student can confirm and treat a low blood glucose level immediately. As a result, the student is less likely to experience a seizure or a coma.
- Never send a student with diabetes elsewhere to be cared for alone—a responsible and mature individual must always accompany the student.
- The student is safer when they do not have to go to a designated place and does not have to delay treatment for low or high blood glucose levels.
- The student spends less time out of class.
- The student gains independence in diabetes management when the blood glucose meter is easily accessible and monitoring can be conducted as needed.
- The student can achieve better blood glucose control to prevent onset of severe symptoms of high and low blood glucose levels and decrease the risk of long-term **complications of diabetes**.
- Fosters autonomy and independence.
- When the student can check at any time and in any place, blood glucose monitoring is handled as a normal part of the school day.

action is important to prevent hypoglycemia and to prevent the student from missing class time. Maintaining low blood glucose treatment and/or snacks in several classrooms and with the student is preferable to ensure quick and easy access.

## PLAN FOR DISPOSAL OF SHARP OBJECTS AND MATERIALS THAT COME INTO CONTACT WITH BLOOD

Checking blood glucose does not present a danger to other students or staff members when there is a plan for proper disposal of lancets and other materials that come into contact with blood. The **school health team** should agree on the plan, which should be consistent with standard precautions and local waste disposal laws.

Sharp objects (sharps) such as lancets and needles may be disposed of in a heavy-duty plastic or metal container with a tight-fitting lid that may be kept at school or in the student's personal container. Some students may leave the lancet in their lancet device and bring it home for disposal. These arrangements should be agreed upon in advance by the school health team. Used blood glucose test strips and other materials may be discarded in the regular trash. Check with the local health department about health and safety requirements in your area.

## RECOGNIZE AND TREAT HYPOGLYCEMIA

Hypoglycemia, also called low blood glucose or low blood sugar, is a serious condition associated with diabetes that can happen very suddenly and requires immediate treatment. Hypoglycemia can impair a student's cognitive abilities and adversely affect academic performance. Hypoglycemia can affect attention, mood, and ability to follow directions and therefore can be mistaken for misbehavior.

For most students who take insulin, a blood glucose level of 70 **mg/dL** or less is considered hypoglycemia. Low blood glucose levels are more likely to occur before lunch, at the end of the school day, during or after physical education classes, or in the event of unanticipated physical activities. Hypoglycemia may also occur due to illness, particularly gastrointestinal illness, incorrect or excessive insulin dose, or it may occur for no obvious reason.

Hypoglycemia, also called low blood glucose or low blood sugar, is a serious condition.

## HYPOGLYCEMIA OCCURS WHEN A STUDENT'S BLOOD GLUCOSE LEVEL FALLS TOO LOW, USUALLY AS A RESULT OF:

- Too much insulin
- Missing or delaying meals or snacks
- Not eating enough food (carbohydrates)
- Getting extra, intense, or unplanned physical activity
- Being ill, particularly with gastrointestinal illness

Hypoglycemia can usually be treated easily and effectively. Ideally, it should be prevented by anticipating circumstances that place the student at risk and implementing a plan to mitigate that risk. If it is not treated promptly, however, hypoglycemia can lead to loss of consciousness and seizures and can be life threatening.

Early recognition of hypoglycemia symptoms and prompt treatment in accordance with the student's DMMP are necessary to prevent the onset of severe symptoms that may place the student in danger. This information, contained in the student's emergency care plans for hypoglycemia and hyperglycemia, should be provided to all school personnel who have responsibility for the student with diabetes during the school day (**see Tools for Effective Diabetes Management**).

Usually, the first signs of hypoglycemia are due to the body releasing adrenaline and other **hormones**/compounds that cause sweating, shakiness, hunger, **pallor**, light-headedness, weakness, and headache. As hypoglycemia progresses and there is insufficient blood glucose for the brain to function normally, it can lead to changes in behavior, lethargy, progressive weakness, confusion, unconsciousness, seizures, and, if prolonged, even death.

**All school personnel should know how to recognize hypoglycemia and know what to do if they observe its onset. Blood glucose level should be confirmed, if possible, after treatment of the hypoglycemia event.**

## HYPOGLYCEMIA SYMPTOMS

### Mild to Moderate

- Shakiness/jitteriness
- Sweating
- Hunger
- Pallor
- Headache
- Blurry vision
- Sleepiness
- Dizziness
- Lightheadedness
- Confusion
- Disorientation

- Loss of coordination
- Slurred speech
- Irritability or nervousness
- Argumentativeness
- Combativeness
- Changed personality
- Changed behavior
- Inability to concentrate
- Weakness
- Lethargy

### Severe

- Unresponsive
- Seizures
- Unconsciousness

Some children and adolescents may have **hypoglycemia unawareness**. In other words, they do not experience early physical warning signs such as shaking, jitteriness, or sweating, and the only clue that their blood glucose levels are low is sudden behavior change. Even students who usually recognize when their blood glucose is low may sometimes have a sudden "low" without the initial symptoms. Although symptoms of hypoglycemia may vary from student to student, each student will tend to have similar symptoms each time hypoglycemia occurs.

This information, contained in the student's emergency care plans for hypoglycemia and hyperglycemia, should be provided to all school personnel who have responsibility for the student with diabetes during the school day.

Hypoglycemia is the greatest immediate danger to students with diabetes.

As soon as the student exhibits symptoms of low blood glucose, treat the situation as a hypoglycemic emergency as outlined in the student's emergency care plan for hypoglycemia. Immediately contact the school nurse or trained diabetes personnel who will check the student's blood/sensor glucose level and treat the student for hypoglycemia. If the school nurse or trained diabetes personnel are not available, or if the blood glucose level cannot be checked, school personnel should treat the student for hypoglycemia as outlined in the emergency care plan for hypoglycemia. Symptoms will progress if not treated immediately. When in doubt and the student is symptomatic, always treat for hypoglycemia even if sensor level is  $\geq 70$  mg/dL. It is important to not overtreat hypoglycemia, which can cause rebound hyperglycemia. Therefore the emergency care plan must be carefully followed during a hypoglycemic episode to provide the appropriate quantity of carbohydrate treatment. The amount of carbohydrates given is individualized in relation to the student's glycemic response, age, weight, type of insulin pump, etc.

Not all students, especially young students, will recognize hypoglycemia symptoms with every episode.

## TREATMENT FOR MILD TO MODERATE HYPOGLYCEMIA

The following checklist provides a generally accepted approach for the treatment of mild to moderate hypoglycemia. Each student's specific hypoglycemia treatment plan is provided in the student's DMMP.

### CHECKLIST FOR TREATMENT OF MILD TO MODERATE HYPOGLYCEMIA SYMPTOMS

- As soon as symptoms are observed, notify the school nurse or trained diabetes personnel. Check the student's blood/sensor glucose level to determine if it is low as per the student's DMMP.
- If the blood glucose level is below the level outlined in the emergency care plan for hypoglycemia (usually 70–80 mg/dL), or if the student has symptoms, give the student a **quick-acting glucose** product equal to 7–15 grams of carbohydrate (**or the amount specified in the emergency care plan**). The amount specified will be dependent on a number of factors, ranging from the child's weight and pubertal status to the method of glucose monitoring and insulin delivery (e.g., hybrid closed-loop system).
- 2 or 4 **glucose tablets** or 1 tube of glucose gel, 2–4 ounces of fruit juice (not low-calorie or reduced-sugar), or 2–6 ounces (half a can) of soda (not low-calorie or reduced-sugar)
- Do not give insulin for these carbohydrates
- If the student is having moderate symptoms such as slurred speech, loss of coordination, or is combative, slowly give 15 grams of glucose gel between the cheek and gum
- Wait 15 minutes, then recheck the blood glucose level. (If they are using a CGM for treatment decisions they may need to be rechecked in 15 minutes and may return to class prior to recheck when trend arrows are pointing up and they are not symptomatic)
- Repeat the steps above if the blood glucose level is still below the level indicated in the emergency care plan for hypoglycemia.
- Contact the student's parents/guardians if indicated in the emergency care plan for hypoglycemia.
- Once blood glucose returns to normal, as designated in the student's emergency care plan for hypoglycemia, check the blood glucose level one hour later if indicated on the emergency care plan. If indicated, provide an additional source of carbohydrate (e.g., peanut butter crackers, graham crackers, granola bar, yogurt, fruit) if a meal or snack is more than one hour from time of hypoglycemia. Do not give insulin for these extra carbohydrates unless indicated on the emergency care plan.

## TREATMENT FOR SEVERE HYPOGLYCEMIA

**Severe hypoglycemia is rare at school and generally can be prevented with risk mitigation and prompt treatment of mild to moderate symptoms of low blood glucose.** When hypoglycemia symptoms are severe, the school nurse or trained diabetes personnel must be notified and must respond immediately. Symptoms of severe hypoglycemia may include inability to eat food or drink fluids, unconsciousness, unresponsiveness, and seizure activity or convulsions (jerking movements). At this point, school personnel should never attempt to give the student food or a drink or to put anything in the mouth, because it could cause choking.

Severe hypoglycemia is treated by administering glucagon by injection or dry nasal spray. Glucagon is a hormone that raises blood glucose levels by causing the release of glycogen (a form of stored sugar) from the liver. Glucagon is given by the school nurse or trained diabetes personnel. Although it may cause nausea and vomiting when the student regains consciousness, **glucagon is a potentially lifesaving treatment that cannot harm a student.** The school nurse and/or trained diabetes personnel must know where the student's glucagon emergency kit is stored, have access to it at all times, and be familiar with the glucagon administration instructions before an emergency arises.

Severe hypoglycemia is treated by administering glucagon by injection or dry nasal spray. Glucagon is a hormone that raises blood glucose levels by causing the release of glycogen (a form of stored sugar) from the liver.

## CHECKLIST FOR TREATMENT OF SEVERE HYPOGLYCEMIA

- Position the student on their side to prevent choking.
- Contact the school nurse or trained diabetes personnel immediately.
- Do not attempt to give anything by mouth.
- The school nurse or trained diabetes personnel should administer glucagon, as indicated in the student's emergency care plan for hypoglycemia.\*
- Call 911.
- Call the student's parents/guardians.
- Stay with the student until emergency medical services arrive.
- Notify the student's personal diabetes health care team.

\*If administration of glucagon is not authorized by the student's DMMP or emergency care plan for hypoglycemia, or if it is not available, staff should call 911 immediately.

## GLUCAGON EMERGENCY KIT

The parents/guardians should supply the school with a glucagon emergency kit if prescribed. Glucagon is available in several different forms that include an injection that requires mixing before administration and dosage forms that are considered ready-to-use, including pre-filled syringe or autoinjector with a liquid stable form of glucagon, prefilled syringe or auto-injector with liquid stable glucagon analogue, and a dry nasal spray or puff that is given through a puff in the nose. The school nurse and/or trained diabetes personnel should also be aware of the glucagon storage requirements and expiration date and notify the student's parents/guardians when a new kit is needed.

## RECOGNIZE AND TREAT HYPERGLYCEMIA (HIGH BLOOD GLUCOSE)

Hyperglycemia means blood glucose levels are above the target range, as specified in the student's DMMP. Almost all students with diabetes will experience blood

glucose levels above their target range at times throughout the day. For many students, these elevations in blood glucose will be only minimally above the target range (mild hyperglycemia = 180–250 mg/dL) and are short in duration. Other students may experience daily spikes of blood glucose levels that are high (in excess of 180 mg/dL) and of longer duration.

Hyperglycemia does not usually result in a medical emergency. Hyperglycemia may be caused by too little insulin or other blood glucose-lowering medications, a malfunction in the **insulin pump** or infusion set, food intake that has not been covered adequately by insulin or other blood glucose-lowering medications, or decreased physical activity. Other causes include illness, infection, injury, or severe physical or emotional stress. Onset of hyperglycemia may occur over several hours.

Symptoms of hyperglycemia include increased thirst, dry mouth, frequent or increased urination, change in appetite, blurry vision, and fatigue. In the short term, hyperglycemia can impair cognitive abilities and adversely affect academic performance. In the long term, moderately high blood glucose levels can increase risk for serious complications such as heart disease, stroke, blindness, kidney failure, nerve disease, gum disease, and amputations.

## HYPERGLYCEMIA SYMPTOMS

- Thirst
- Dry mouth
- Frequent or increased urination
- Abdominal pain
- Nausea/vomiting
- Change in appetite
- Blurry vision
- Fatigue
- Headache
- Fruity breath

Hyperglycemia needs to be recognized and treated in accordance with the student's DMMP. Information in the DMMP should be used to develop the student's emergency care plan for hyperglycemia. All school personnel who have responsibility for the student with diabetes should receive a copy of the emergency care plan for hyperglycemia and be prepared to recognize and respond to the signs and symptoms of hyperglycemia (**see Tools for Effective Diabetes Management**).

## HYPERGLYCEMIA TREATMENT

As soon as symptoms of hyperglycemia are suspected, notify the school nurse or trained diabetes personnel. Treatment of hyperglycemia begins with checking the student's blood glucose level to determine if it is above the target range. When checking blood glucose at a time not specified in the DMMP, treatment decisions should take into account the time and amount of the student's last carbohydrate intake and insulin dose.

In accordance with the emergency care plan for hyperglycemia, the student's urine or blood should be checked for **ketones**, which are chemical byproducts from the breakdown of fat for energy due to inadequate insulin in the blood. The **urine ketone test** involves dipping a special strip into the urine, waiting a specified amount of time, and then comparing the resulting color to a color chart. The **blood ketone test** is done with a finger stick using a blood ketone meter and a ketone test strip, similar to checking blood glucose. If the test indicates ketones are present, notify the parents/guardians.

Hyperglycemia means blood glucose levels are above the target range.

Symptoms of hyperglycemia include increased thirst, dry mouth, frequent or increased urination, change in appetite, blurry vision, and fatigue.

Correction doses of insulin should be administered at meal-times and other times as per the student's individualized DMMP.

**Correction doses of insulin should be administered at mealtimes and other times as per the student's individualized DMMP.**

Students with type 2 diabetes usually still make a significant amount of insulin, and therefore, ketone checks may not be prescribed.

## **KETONES AND DIABETIC KETOACIDOSIS**

While hyperglycemia does not usually result in a medical emergency, the following situations may lead to a breakdown of fat, causing ketones to form along with the hyperglycemia:

- Significant or prolonged insulin deficiency from failure to take any insulin or the correct amount of insulin or insulin expired
- An insulin pump or infusion set malfunction causing an interruption in insulin delivery
- Physical or emotional stress that increases the release of hormones that work against the action of insulin
- Infection or illness, particularly with diarrhea and/or vomiting

Ketones are usually associated with high blood glucose levels but also may occur when a student is ill and blood glucose levels fall below the student's target range. At first, ketones will be cleared by the kidneys into the urine, but as the process progresses, they are accompanied by increased acid levels in the bloodstream that cause **diabetic ketoacidosis (DKA)**, which is a medical emergency.

DKA develops over hours to days and is associated with hyperglycemia, a buildup of ketones (**ketosis**) and acid (acidosis) in the blood, and dehydration. DKA can occur more quickly for students on an insulin pump since they do not have any long acting insulin in their system.

The classic signs of DKA include severe abdominal pain, nausea and vomiting, fruity breath, heavy breathing or shortness of breath, chest pain, increasing sleepiness or lethargy, and depressed level of consciousness. **As soon as these symptoms are observed, the school nurse or trained diabetes personnel should call 911, the parents/guardians, and the student's health care provider. Stay with the student until emergency medical services arrive.**

If a student with type 1 diabetes has symptoms of illness including nausea, vomiting, severe stomachache, and/or fever, check blood/sensor glucose levels and ketones to rule out DKA.

**If a student has moderate to large ketones with or without symptoms, they should not participate in physical activity and will need to be picked up from school. Parents/guardians should contact the diabetes provider to determine next steps in care.**

DKA develops over hours to days and is associated with hyperglycemia, a buildup of ketones (**ketosis**) and acid (acidosis) in the blood, and dehydration.



## CHECKLIST FOR TREATMENT OF HYPERGLYCEMIA

### Refer to the student's DMMP for specific instructions.

- Check the blood glucose level to determine if it is high.
- Check urine or blood for ketones.
- Encourage the student to drink water or sugar-free drinks (8 ounce/hour if less than 5 years old or 8–16 ounces/hour for children 6 years or older).
- Assess for symptoms of nausea, vomiting, severe abdominal pain, heavy/labored breathing, change in mental status. Check ketones if these symptoms are noted. **If moderate to large ketones with symptoms, call 911 and follow the instructions on the DMMP.**
- Calculate the insulin dose needed.
- Administer supplemental insulin dose in accordance with the student's emergency care plan for hyperglycemia. (If student uses an insulin pump, see instructions below.)
- Allow free and unrestricted access to the restroom and to sugar-free liquids, as high blood glucose levels can cause increased urination and may lead to dehydration if the student cannot replace the fluids.
- Recheck blood glucose every two hours to determine if it is decreasing to target range.
- Restrict participation in physical activity if student is hyperglycemic or has moderate to large ketones as specified in the DMMP. However, if the student is not nauseous or vomiting and moderate to large ketones are not present, light physical activity might help to lower the blood glucose level.
- Notify parents/guardians as specified in the DMMP.

### For students using an insulin pump:

- If student uses a pump, check to see if pump is connected properly. If this is the first incidence of hyperglycemia for that school day and the student has no symptoms as described above and ketones are less than moderate, give a **correction bolus** through the pump. RECHECK blood glucose level one hour later. The pump calculator may be used to determine correction dose.
- If moderate or large ketones are present, administer correction/supplemental insulin dose by syringe or insulin pen and then pump site will need to be changed, if possible.
- For infusion site failure, give insulin by syringe or insulin pen. A new infusion set and/or reservoir will need to be placed.
- For suspected pump failure: suspend or remove pump and give insulin by syringe or insulin pen.

## MANAGEMENT OF TYPE 2 DIABETES AT SCHOOL

Type 2 diabetes management at school may include lifestyle interventions, oral medications, and/or injectable medications, including insulin. Some students may require blood glucose monitoring and medication administration in school, similar to students with type 1 diabetes. However, many others do not. Children requiring monitoring or treatment during the school day should have a DMMP in place. For all youth with type 2 diabetes, school nurses and other school staff can help guide students on choosing a healthy, balanced diet and appropriate levels of physical activity.

School nurses and trained diabetes personnel should be aware that youth with type 2 diabetes may present with urgent care needs, like children with type 1 diabetes. Youth with type 2 diabetes who are on insulin can be at risk for hypoglycemia, though this is less common than in youth with type 1 diabetes. Similarly, youth with uncontrolled type 2 diabetes may present with signs of hyperglycemia, ketones, and diabetic ketoacidosis. Please see **Recognize and Treat Hyperglycemia** and **Ketones and Diabetic Ketoacidosis** for further details of signs/symptoms. For hyperglycemia and ketones, treatment should proceed per the student's DMMP, which may include notifying their health care provider for guidance. If you suspect diabetic ketoacidosis, urgent medical evaluation is needed.



## ADMINISTER INSULIN

Students with type 1 diabetes—and some students with type 2 diabetes—need to administer or be given insulin at regular times during the school day. Students may need to take insulin to cover meals and/or snacks and may need additional or corrective dosages of insulin to treat hyperglycemia as specified in the DMMP. It is medically preferable that the student be allowed to self-administer insulin in the classroom or wherever they happen to be.

Parents/guardians may provide input to insulin dose adjustments if authorized by the DMMP.

The DMMP, unique to each student, specifies the dosage, delivery system, and schedule for insulin administration. The IHP and the student's **education plan**, based on the DMMP, should specify who will administer prescribed insulin and under what circumstances.

Some students who need insulin during the school day are able to administer it on their own, some will need supervision, and others will need someone to administer the insulin for them. The school nurse and/or trained diabetes personnel should assist with insulin administration in accordance with the student's health care and education plans.

A diabetes-trained health care professional such as the school nurse or a CDCES should teach, monitor, and supervise trained diabetes personnel to administer insulin.

## TYPES OF INSULIN

Insulin delivery systems along with monitoring devices help keep blood glucose levels within a target range. These options may require frequent blood glucose monitoring and assistance for the student with diabetes.

### Insulin has three characteristics:

- **Onset** is the length of time before insulin reaches the bloodstream and begins lowering blood glucose levels.
- **Peak** is the time at which insulin has its maximum effect in lowering blood glucose levels.

Parents/guardians may provide input to insulin dose adjustments if authorized by the DMMP.

A diabetes-trained health care professional such as the school nurse or a CDCES should teach, monitor, and supervise trained diabetes personnel to administer insulin.

- **Duration** is the number of hours during which insulin continues to lower blood glucose levels.

## Insulin is classified in four types by how it works:

- **Inhaled** begins to work in 5 to 10 minutes, peaks in about 30 minutes, and has a duration of approximately one-and-a-half to three hours.
- **Ultra-rapid-acting** begins to work in about 15 minutes after injection, peaks in about one hour, and continues to work for two to four hours.
- **Rapid-acting** usually reaches the bloodstream 4 to 20 minutes after injection (depending on type), peaks in about one hour, and continues to work for two to five hours.
- **Short-acting** usually reaches the bloodstream within 30 minutes after injection, peaks anywhere from two to three hours after injection, and is effective for approximately three to six hours.
- **Intermediate-acting** generally reaches the bloodstream about two to four hours after injection, peaks 4 to 12 hours later, and is effective for about 12 to 18 hours.
- **Long-acting** reaches the bloodstream several hours after injection and provides a slow steady release of insulin over a 18 to 24- hour period.

## TYPES OF INSULIN PLANS

Insulin therapy plans are tailored to the individual student's insulin needs as well as the student's health literacy and numeracy (i.e., ability to understand the prescribed plan). Two common plans are the basal/bolus insulin plan and the fixed dose insulin therapy plan.

### Basal/Bolus Insulin Plan (Adjustable Insulin Therapy)

Most students with type 1 diabetes use a basal/bolus insulin plan. This type of insulin plan, sometimes referred to as intensive insulin therapy, mimics the way a normally functioning **pancreas** produces insulin.

A coordinated combination of different types of insulin is used to achieve target blood glucose levels at meals and snacks, during periods of physical activity, and through the night.

- **Basal insulin is long-acting or intermediate-acting insulin** delivered once or twice a day. This type of insulin is used to control blood glucose levels overnight and between meals.
- **Bolus insulin refers to a dose of inhaled, ultra-rapid, rapid-acting, or short-acting insulin** that is given to cover the carbohydrate in a meal or snack and to lower blood glucose levels that are above target.

Students using a basal/bolus insulin plan require multiple injections during the school day. Students using a programmable insulin pump will receive their insulin continuously during the day as a basal rate and then provide boluses with meals and/or for correction of blood glucose levels above target.

### Fixed Dose Insulin Therapy

Other students may take the same doses of insulin each day with inhaled, ultra-rapid, rapid-acting, short-acting, intermediate-acting, or long-acting insulin. This type of plan is sometimes referred to as fixed dose insulin therapy and generally requires fixed carbohydrate intake.

## INSULIN STORAGE

The shelf life of insulin after opening varies according to the type of insulin, the type of container (vial or pen cartridge), and how insulin is administered (through a syringe, a pen, or a pump). Review the product storage instructions on the manufacturer's package insert and check the expiration date.

In general, most opened vials of insulin may be left at room temperature (below 86 degrees Fahrenheit) for 30 days and then discarded. Most opened disposable pens or pen cartridges may be left at room temperature for less than or equal to 30 days, depending on the type of insulin and the type of pen or cartridge. Unopened vials or pen cartridges should be stored in a refrigerator. They may be used until their expiration date and then must be discarded.

Inhaled insulin cartridges should be stored in a refrigerator. Similar to injectable insulin, refrigerated foil packages can be used until the expiration date. Cartridges should be allowed to reach room temperature 10 minutes prior to use. Sealed non-refrigerated packages must be used within 10 days and opened packages should be used within 3 days.

## INSULIN DELIVERY

The three most common ways to administer insulin are with a syringe, an insulin pen, or an insulin pump.

The manufacturers of insulin, insulin syringes, insulin pens, and insulin pumps have websites where school personnel can learn more about these products.

### 1. Insulin syringes

Insulin syringes are available in several sizes, make it easy to draw up the proper dosage. Shorter, smaller needles make injections more comfortable. Some syringes provide 0.5-unit (half) markings.

### 2. Insulin pen

An insulin pen holds a cartridge of insulin and may be disposable. New, connected insulin pens are used in conjunction with a smartphone app and insulin dose calculator. Insulin pens are convenient and appropriate when students need a single type of insulin. During the school day, pens are used most often with rapid-acting insulin to cover a meal or to treat a high blood glucose level. Generally, a user will follow these steps:

- Screw the needle onto the tip of the pen just before use.
- Dial the pen to two units.
- Hold the pen upright and press the button on the pen to discard the air and fill the needle with insulin. Repeat if needed until a drop of insulin appears.
- Dial the pen to the prescribed dose and inject the insulin.
- Remove the pen needle and dispose of it in a sharps container.

### 3. i-Port

A device that is placed in the skin subcutaneously used to assist with insulin delivery via an insulin syringe that directly injects the insulin into the "port" of the i-Port.

### 4. InPen

The InPen is a "smart" insulin pen system that combines a reusable Bluetooth-enabled insulin pen with a mobile app that helps to deliver the appropriate amount of insulin for both meals and corrections based on the health care

provider recommendations. It is compatible with Fiasp, NovoLog, and Humalog cartridges. The app also syncs with some CGMs and blood glucose meters.

## 5. Pen caps

The “smart” insulin pen cap fits on most commercially available disposable insulin pens and uses glucose data from the Freestyle Libre 2 CGM to provide insulin dosing recommendations obtained from the diabetes health care team. After scanning the libre, the glucose level is sent to the smart pen cap and the data is used to recommend an insulin dose which is displayed on the pen cap.

## 6. Inhaled insulin

Inhaled insulin may be used instead of rapid or ultra-rapid insulin for carbohydrate coverage or elevated glucose correction.

## 7. Insulin pump

A computerized device that is programmed to deliver small, steady doses of insulin throughout the day. Additional doses are given to cover food intake and to lower high blood glucose levels. Most pumps now receive blood glucose values directly from the blood glucose or CGM. However, if the pump does not have this feature, the student must enter the blood glucose value as well in order for the pump to calculate the bolus dose. Some pumps will automatically give extra basal rate and correction insulin based on CGM readings from the blood glucose meter or CGM.

Rapid-acting insulin is used in the insulin pump. Students using the insulin pump will not be taking any long-acting insulin. Therefore, a pump malfunction or extended disconnection from the pump (longer than two hours) increases the student’s risk of developing DKA. The parents/guardians should provide the school with a backup supply of syringes and rapid-acting insulin or insulin pens in the event of a pump failure. Keep supplies in a secure location.

There are several types of insulin pumps. School personnel can be trained on each student’s pump by contacting the pump manufacturer or the student’s diabetes health care team.

- **Some pumps are a small medical device** that students usually wear on their waistband, belt, or in their pocket. The pump holds a reservoir of insulin attached to an infusion set that leaves a very small needle or plastic cannula (a tiny, flexible plastic tube) under the skin. Infusion sets are started with a guide needle, then the cannula is left in place and taped with dressing, and the needle is removed. The cannula usually is changed every two or three days or when blood glucose levels remain above the target range or ketones are present. Routine site changes are a responsibility of the family and generally are done at home.
- **Other pumps look like a pod or a patch.** These pumps are attached directly to the skin, and a guide needle inserts the cannula under the skin automatically. The student usually wears the pod on his or her abdomen, buttocks, leg, or arm. The pod contains the insulin (there is no tubing). The pod-type pump is controlled by a small hand-held computer device that is kept nearby. This type of insulin pump needs to be changed every two to three days.

Some pumps have the data from continuous blood glucose monitoring displayed on the pump screen. In some pumps, technology has been developed to allow communication between the pump and the CGM, enabling the insulin pump to rely

Rapid-acting insulin is used in the insulin pump.

Some pumps have the data from continuous blood glucose monitoring displayed on the pump screen.

on CGM information to reduce or stop insulin delivery if a low glucose level is anticipated. Insulin can also be automatically increased in response to rising glucose levels. Many CGMs have transmitters that display blood glucose values on tablets, smartphones, and computers.

Trained diabetes personnel should be knowledgeable about and trained in using and operating each student's insulin delivery system in the event that a school nurse is not available to administer insulin.

## Hybrid Closed Loop Systems

Several insulin pumps currently on the market automate insulin administration by communicating directly with a continuous glucose sensor. Based on the CGM input, basal rates may be temporarily stopped, increased, or decreased. Small amounts of correction insulin may also be administered based on CGM readings. Input of carbohydrate amounts are still required prior to eating meals and snacks. These devices also have different delivery modes to reduce risk for highs and lows during activity and sleep.

## DIY DEVICES

Do-it-yourself (DIY) devices have become more common in the diabetes community, but they are not FDA approved and they aren't part of this guide. The use of DIY devices at school should be managed on an individualized basis with the school nurse or school health coordinator and family after approval from the student's diabetes team. DIY devices rely on algorithms downloaded from the internet to perform in a closed loop fashion inputting information from the CGM to the pump which delivers basal and correction insulin. Patients will still need to input carbohydrate amounts before meals and snacks. Though settings are initially programmed in the pump, the algorithm makes continuous adjustments based on the CGM readings.

Do-it-yourself (DIY) devices have become more common in the diabetes community, but they are not FDA approved and they aren't part of this guide.

## WHY DO MANY STUDENTS AND FAMILIES PREFER INSULIN PUMP THERAPY?

- Users are freed from multiple daily insulin injections.
- The pump delivers insulin in a way that is similar to what the body does naturally.
- Users may achieve improved time in glucose target range of 70–180 mg/dL.
- Basal insulin delivery can be fine-tuned to the user's needs, allowing for adjustments for the differences in insulin sensitivity that change over the course of 24 hours.
- The pump uses frequent pulses of rapid-acting insulin, allowing for more flexible action on blood glucose than with intermediate- or long-acting insulin.
- Users may be able to participate in unplanned physical activity without eating extra food.
- The pump is durable and contains many child safeguards.
- The pump can be preprogrammed with **insulin-to-carbohydrate ratios** and blood glucose correction factors.
- When additional insulin, called a bolus, is needed to balance the carbohydrates in a meal or snack, or when blood glucose levels are high, the pump calculates the bolus dosage after the student enters the number of grams of carbohydrates to be eaten.
- More recent iterations of insulin pump and glucose sensor technologies are allowing for more automated delivery of insulin delivery by pumps.

## PLAN FOR DISASTERS, LOCKDOWNS, OR EMERGENCIES

The parents/guardians must provide an emergency supply kit with child's identifying information in the event of natural disasters, lockdowns, or emergencies when students need to stay at school. This kit should contain enough supplies for at least 72 hours to carry out the medical orders in the DMMP.

### DISASTER, LOCKDOWN, OR EMERGENCY SUPPLY KIT FOR 72 HOURS

- Blood glucose meter, testing strips, lancets, and batteries for the meter
- CGM sensor supplies, such as a charger
- Urine and/or blood ketone test strips and meter
- Insulin, syringes, and/or insulin pens and supplies
- Insulin pump supplies
- Other medications
- Antiseptic wipes or wet wipes
- Quick-acting source of glucose, such as juice, regular soda, and glucose tabs/gel
- Water sufficient for 72 hours
- Carbohydrate-containing snacks, such as whole grain crackers and dried fruit
- Hypoglycemia treatment supplies (enough for three episodes), such as quick-acting glucose and carbohydrate snacks
- Glucagon emergency kit

## FOLLOW AN INDIVIDUALIZED MEAL PLAN

Current nutrition recommendations for students with diabetes are designed to provide maximum flexibility to meet each **student's nutritional needs**, appetite, eating habits, and schedules. Insulin regimens are then individualized to fit each student's lifestyle. The student's diabetes care plan, as set out in the DMMP and IHP, must be followed to avoid hypoglycemia or hyperglycemia.

The nutritional needs of students with diabetes do not differ from the needs of students without diabetes. All students need a variety of healthy foods to maintain normal growth and development. The meal plan recommended for students with diabetes is usually healthy for everyone. Consideration of the family's culture and ethnicity is essential regarding food from home. The major difference is that the timing, amount, and content of the food that students with diabetes eat, especially the carbohydrates, are carefully matched to balance the action of the insulin and/or other diabetes medications that they take.

**Although there usually are no forbidden foods for people with diabetes, students are advised to avoid "liquid carbs"** such as sugar-containing soda and juices (including 100 percent fruit juice). The liquid carbs raise blood glucose rapidly, contain large amounts of carbs in small volumes, are hard to balance with insulin, and provide little or no nutrition. (Sugar-containing drinks are used, however, in treating hypoglycemia.)

**Many students with type 2 diabetes follow a meal plan designed to help them achieve a healthy weight.** These students may be prescribed a calorie target for the day as well as consistent carb amounts to aim for at each meal and snacks to help manage their weight and blood glucose. Ensuring that healthy foods such as whole grains, low-fat protein and dairy, and fruits and vegetables are available is critical to their diabetes management.



The nutritional needs of students with diabetes do not differ from the needs of students without diabetes.

With passage of the **Healthy, Hunger-Free Kids Act in 2010**, schools have been assisting students in achieving a more healthful diet. This legislation has resulted in sweeping changes in school meal programs, including more whole grains, fruits and vegetables, milk choices limited to low-fat or fat-free, and maximum calorie levels for all school meals based on grade level.

## **CARBOHYDRATE COUNTING AND IDENTIFYING THE CARB CONTENT IN FOODS AND BEVERAGES**

Carbohydrate counting is the most popular meal planning approach for children and youth with diabetes. This approach involves identifying and calculating the grams of carbohydrate the student eats and drinks in a meal or snack. Sources of carbs include starches (breads, crackers, cereal, pasta, rice), fruits and vegetables, dried beans and peas, milk, yogurt, and sweets.

The food service manager or staff and/or the school nurse should provide the carb content of foods and beverages to the parents/guardians and the student. If the nutrient analysis is not available, the school nurse and parents/guardians should work with the district food service office to obtain this critical information.

If the food service manager or the school district does not have this information, there are additional resources to help identify the carb content in foods and beverages. The school can identify a registered dietitian nutritionist (RDN) to work with the food service staff to make this information available. To locate an RDN in your area, visit the Academy of Nutrition and Dietetics' **Find an Expert**.

The U.S. Department of Agriculture (USDA) maintains a **National Nutrient Database** containing nutrient information on well over 8,000 foods and beverages. The FDA requires **Nutrition Facts** labels on packages for most prepared foods such as breads, cereals, canned and frozen foods, snacks, desserts, drinks, etc. These labels include the carbohydrate content as well as other nutrient values for each serving in the package. There are other carbohydrate counting apps available.

## **MEAL PLANNING APPROACHES**

Most students with diabetes have an individualized meal plan using a method of carbohydrate counting. The meal plan takes into account the student's nutritional needs, insulin plan, oral medications, and physical activity level.

**There are two methods of meal planning using carb counting: (1) adjusting insulin for changing carb intake and (2) following a consistent carb intake meal plan.** This information will be provided in the student's DMMP.

### **Method 1: Adjusting Insulin for Changing Carb Intake**

Students who use multiple daily injections or an insulin pump usually use this method which allows adjusting insulin doses to cover the amount of carbs the student will consume by using an **insulin-to-carb ratio and an insulin correction factor (sometimes called an insulin sensitivity factor)**. These factors are individualized for each student and specified in the DMMP. This method gives the student with diabetes more flexibility with eating and requires a good understanding of the student's insulin therapy and carb counting.

See the worksheet examples in **Advanced Insulin Management: Using Insulin-to-Carb Ratios and Correction Factors** for instructions on how to compute the insulin dose using a student's insulin-to-carb ratio and insulin correction factor.

Carbohydrate counting is the most popular meal planning approach for children and youth with diabetes.

Some students now may use a blood glucose meter, smart phone application, connected insulin pen app, or insulin pump that performs bolus calculations automatically. Insulin-to-carb ratios and insulin correction formulas are pre-programmed into the device.

## Method 2: Following a Consistent Carb Intake Meal Plan

Students who follow a consistent carb meal plan aim for a set amount of carb grams at each meal and snack and do not adjust their mealtime insulin for the amount of carb intake (e.g., 60 grams of carbs at each meal). The student's personal diabetes health care team helps determine the amount of carbs each meal. This method of meal planning is often used by students who take an intermediate-acting insulin in the morning or students who receive a preset amount of rapid- or short-acting insulin at meals.

Students who follow a consistent carb meal plan need to maintain consistency in the timing and content of meals and snacks. The student should eat lunch at the same time each day. Snacks often are necessary to achieve a balance with the peak times of insulin action and with physical activity.

## OTHER DIETARY-RELATED MEDICAL CONDITIONS

A small percentage of students with diabetes may have other medical conditions that require dietary restrictions. For example, **some students with type 1 diabetes may have celiac disease**. They should not eat any food products that contain gluten or that have been prepared in a gluten-contaminated environment. Gluten is found in many grains, including wheat, rye, and barley, which are found in many pastas, cereals, and processed foods. School food service staff will also need to be made aware of a student's need for gluten-free meals.

Some students with type 2 diabetes may need to limit fat for control of weight and/or lipids. Still others may need to limit salt intake to help manage high blood pressure.

All dietary restrictions should be outlined in the student's DMMP.

## PROMOTE ENGAGEMENT IN PHYSICAL ACTIVITY

Physical activity is a critical element of effective diabetes management. Everyone can benefit from engaging in physical activity on a regular basis, but it is even more important for students with diabetes. In addition to maintaining cardiovascular fitness and managing weight, physical activity can help lower blood glucose levels.

Students with diabetes should participate fully in physical education classes and team or individual sports. To maintain blood glucose levels within the target range during extra physical activity, students will need to adjust their insulin and food intake. To prevent hypoglycemia, they also may need to monitor their blood glucose levels more frequently before, during, and after engaging in physical activity. The student's DMMP should specify when physical activity should be restricted because the blood glucose level is either too high or too low or if ketones are present. Physical activity may also help to keep glucose in range. The child's health care team may provide a specific plan for exercise/sports as needed in the DMMP.

Physical education teachers, sports coaches, and staff supervising recess must be able to recognize the symptoms of hypoglycemia and be prepared to call for

Students who follow a consistent carb meal plan need to maintain consistency in the timing and content of meals and snacks.



Students with diabetes should participate fully in physical education classes and team or individual sports.

## TIPS FOR HELPING STUDENTS REACH AND MAINTAIN A HEALTHY WEIGHT

- **Be active every day for at least 60 minutes.** Students do not have to join a gym or be on a sports team to stay active. Dancing, riding a bike, walking the dog, or doing any physical activity they enjoy for at least 60 minutes a day will work. Activity can be broken up into three 20-minute sessions or whatever works for the student.
- **Limit play time in front of the computer, tablet, smartphone, and TV** to two hours per day.
- **Limit portion sizes of foods high in fat, sugar, and salt.** Instead of eating a large serving of french fries, students can order a small serving or share a large serving with friends. Try measuring snacks in small portions instead of grazing. Eliminating sugar-sweetened beverages is an easy way to reduce added sugar.
- **Cut some calories.** Some healthy ways to cut calories include drinking water instead of sweetened fruit drinks, soda, or sports drinks and eating fruit instead of chips or candy. Encourage students to read food labels or download an app to learn about the number of calories, carbs, and fat in the foods and beverages they consume.
- **Eat a healthy breakfast.** Eating a healthy breakfast will help students stay focused during the day and help manage their blood glucose.
- **Lose weight slowly.** No more than one or two pounds of weight loss per month is recommended, because students are still growing. Losing weight slowly may help students keep it off.

help in case of a hypoglycemia emergency. The student's emergency care plan for hypoglycemia, a quick-acting source of glucose, and the student's **blood glucose meter** or CGM reader/smartphone app should always be available, along with plenty of water.

Students using **insulin pumps** with tubing may disconnect from the pump for sports activities for one hour or less. If students keep the pump on, they may set a temporary reduced insulin delivery rate or suspend use of insulin while they are active. School personnel should provide the student with a safe location for storing the pump when the student does not wear it. The student's DMMP and IHP should include specific instructions for pump use during physical activity.

## HELP TO MAINTAIN A HEALTHY WEIGHT

Maintaining a healthy weight is very important for students with diabetes to help manage blood glucose levels and to establish habits for managing their weight as they grow older. Healthy habits include being active every day and choosing healthy foods for meals and snacks.

More children and adolescents in the U.S. are either overweight or obese than ever before. This excess weight is placing more students at risk for **type 2 diabetes**. School personnel can help all students reach and maintain a healthy weight by encouraging them to make healthful lifestyle choices while they are young. They also can provide non-food rewards and encourage healthy foods for class parties.

Working with the school wellness committee and the school-parents organization (e.g., parent teacher association (PTA)/parent teacher organization (PTO)), the parents/guardians can help by encouraging schools to offer healthy food choices at breakfast and lunch and in vending machines, to sell non-food items for school fundraisers, and to include physical education in the school curriculum. All foods sold at school during the school day now need to meet nutrition standards. The **Smart Snacks in School** regulation applies to foods sold a la carte, in the school store, and vending machines. Lastly, school personnel must be aware and address issues of food insecurity in the student population.

Maintaining a healthy weight is very important for students with diabetes to help manage blood glucose levels and to establish habits for managing their weight as they grow older.

## PLAN FOR SPECIAL EVENTS, FIELD TRIPS, AND EXTRACURRICULAR ACTIVITIES

Meeting the needs of students with diabetes requires advance planning for special events such as classroom parties, field trips, and school-sponsored extracurricular activities held before or after school.

Recommendations and plans for overnight field trips should be obtained from the student's diabetes team and parents/guardians.

The school food service staff can assist in the planning, especially when a student requires a modified snack or bag lunch for the event.

Although there usually are no forbidden foods in a meal plan for students with diabetes, school parties often include foods high in carbohydrates and fats. Serving nutritious snacks will benefit all students and will encourage good eating habits. If possible, give the parents/guardians advance notice about parties so they can incorporate special foods in the student's meal plan or adjust the insulin dosage. Some parents/guardians may provide alternative snacks/foods for the student with diabetes.

Students often view field trips among the most interesting and exciting activities of the school year. Students with diabetes must be allowed to have these school-related experiences. Although it is not unusual to invite the parents/guardians to chaperone field trips, parental/guardians' attendance can never be a prerequisite for participation by students with diabetes.

The school nurse or trained diabetes personnel should accompany the student with diabetes on field trips. They should ensure that all of the student's snacks and supplies for checking blood glucose, administering insulin, and treating hypoglycemia are brought on the trip. Backup supplies, including insulin pens/syringes, that can be used in the event of insulin pump failure should be included. Diabetes management strategies for school-sponsored field trips should be included in the student's health care and education plans.

The plan for coverage and care during school-sponsored extracurricular activities and field trips that take place outside of school hours also should be carefully noted in the student's health care and education plans. As with field trips, the school nurse or trained diabetes personnel must be available at these activities.

Finally, be aware of any state nurse practice laws relating to interstate travel.

Although it is not unusual to invite the parents/guardians to chaperone field trips, parental/guardians' attendance can never be a prerequisite for participation by students with diabetes.

## EMOTIONAL AND SOCIAL CONSIDERATIONS

Students with diabetes must deal not only with the usual developmental issues of growing up but also with learning to manage this complex chronic disease. Diabetes affects every facet of life, complicating the task of mastering typical developmental challenges.

For the most part, students with diabetes do not want to be singled out or made to feel different from their peers. **Diabetes care tasks, however, can set them apart and make them feel self-conscious, angry and/or resentful about having diabetes.** Often students with diabetes are subject to bullying.

Depression is recognized as common among children and teens and even more so in those with diabetes.

Diabetes affects every facet of life, complicating the task of mastering typical developmental challenges.

Students react differently to having diabetes. They may be accepting and open to discussing it or resentful, sad, and embarrassed and thus be discreet. Often, the same student will experience all these feelings over time. School personnel should be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as others.

Sometimes, students feel pressured to please their care providers but cannot always comply with their requests. Sometimes, students feel ashamed or uncomfortable about disclosing information that is personal such as blood glucose levels. To appease their parents/guardians or members of their personal diabetes health care team, students may report fictitious blood glucose levels and/or ketone results.

Others use their diabetes to assert their independence and control and do not comply with their diabetes care plan. Still other students may be afraid or embarrassed by the potential for hypoglycemia and administer a fraction of their insulin dose to avoid a low blood glucose. If this is a concern, the parents/guardians and the student's personal diabetes health care team can check the information in the memory of the blood glucose meter or the insulin pump for problems or inconsistencies. If a student exhibits fear of hypoglycemia, follow-up intervention by a mental health professional with expertise in diabetes and fear of hypoglycemia may be beneficial.

School staff and the student's personal diabetes health care team should be aware that students with diabetes are at risk for developing eating disorders, and school staff should be aware of this. Some students, particularly females, may omit insulin or take less insulin than indicated as a quick way to lose weight, putting them at risk for hyperglycemia and ketoacidosis. Binge eating and bulimia are also seen in students with diabetes. If there are concerns that a student may have an eating disorder, notify the school nurse or the parents/guardians. Follow-up intervention by a mental health professional with expertise in diabetes and eating disorders will be beneficial.

Diabetes can be a focal point for conflict within families. It is important to minimize diabetes-specific family conflict to promote optimal health and quality of life outcomes. The student's personal diabetes health care team and school health team must be aware of emotional and behavioral issues and refer students with diabetes and their families for counseling and support as needed. School-based therapy or a referral to a mental health professional in the community with expertise in diabetes are viable options depending on the individual needs of the student.

One of the biggest challenges for students with diabetes is gradually becoming more independent from their parents/guardians. Yet, diabetes may compromise independence, because the parents/guardians are concerned about their child's ability to perform self-care tasks and take responsibility for their diabetes. The parents/guardians, who are ultimately responsible for their child's well-being, may be reluctant to allow typical levels of independence in children or teens who have not demonstrated their ability to take care of themselves properly. This parental concern can lead to increasing struggles with dependence, oppositional behavior, and rebellion.

To deal with psychosocial aspects of diabetes in students, there are many resources available. When needs and challenges are observed, the school health team and the student's diabetes health care team may need to refer the family to a counselor experienced in working with families living with diabetes.

The student's personal diabetes health care team and school health team must be aware of emotional and behavioral issues and refer students with diabetes and their families for counseling and support as needed.



The age for transfer of responsibility from caregiver to student varies from student to student and from task to task because students develop and mature at different rates.

## ASSISTING THE STUDENT IN THE TRANSITION TO DIABETES SELF-MANAGEMENT IS IMPORTANT

**Diabetes care depends upon self-management.** Self-management in pediatric diabetes involves both the youth and adult caregivers. The student's competence and capability for performing diabetes-related care tasks should be determined in collaboration by the student, parents/guardians, school nurse, and diabetes care team. The level of support required for specific tasks should be specified in the student's DMMP. The information in the DMMP is applied to the school setting by the school health team, as outlined in the student's IHP and any education plan. Although students must receive assistance with and supervision of their diabetes care when needed, it is equally important to enable students to take on the responsibility of diabetes self-management. Students may benefit from varying levels of guidance and support from the parents/guardians, the student's personal diabetes care team, and the school health team over time as a form of emotional support and/or to promote safety. Students with diabetes spend approximately 200 minutes per year with their diabetes care team, but thousands of minutes each year managing diabetes at school. The school environment is an ideal setting to support the student in the transition to self-management.

The age for transfer of responsibility from caregiver to student varies from student to student and from task to task because students develop and mature at different rates.

**Students' abilities to participate in self-care also depend upon their willingness and ability to do so. For example, a student's ability to engage in optimal self-care may be impacted by diabetes burnout and depression.**

It is medically preferable that students be permitted to perform diabetes care tasks in the classroom, at every campus location, or at any school activity.

Although the ages at which students are able to perform diabetes care tasks are highly individualized and differ for each student, their ability and levels of self-care generally occur as follows:

- **Toddlers and preschool-aged children** are unable to perform diabetes care tasks independently and will need an adult to provide all aspects of diabetes care. Many of these young children will have difficulty recognizing hypoglycemia, so it is important that the caregiver be able to recognize and provide prompt treatment. Children in this age range, however, can usually determine which finger to prick, choose an injection site, and are generally cooperative.
- **Some elementary school-aged students** are able to perform their own blood glucose monitoring, but most will require supervision. Older elementary school-aged students are beginning to self-administer insulin with supervision but may not yet have the cognitive capacity to adjust insulin doses based on blood glucose readings. Understanding the complex interactions among insulin, nutrition, and physical activity on blood glucose levels may not develop until early adolescence. Unless students have hypoglycemic unawareness (inability to tell when their blood glucose level is low), most should be able to let an adult know when they are experiencing hypoglycemia. However, this can depend on the distractions that are occurring in the school environment and the student's overall level of well-being.
- **Middle and high school-aged students** should be able to perform self-care tasks depending upon the length of time since diagnosis and level of maturity, but they will always need help when experiencing hypoglycemia. As older students mature, they should be encouraged and empowered to perform diabetes care tasks on their own if they can physically and emotionally handle the responsibility.

It is medically preferable that students be permitted to perform diabetes care tasks in the classroom, at every campus location, or at any school activity.

**Current research suggests, however, that when parents/guardians provide support and stay involved with their teen's diabetes management tasks throughout adolescence, students achieve better health outcomes. Teamwork or shared responsibility between the parents/guardians and their child is an effective strategy. Ultimately, the diabetes health care team, in partnership with the student, parents/guardians, and school nurse, specifies the appropriate levels of independence in the student's DMMP. Levels of independence are identified to promote optimal and safe diabetes management for each student.**

Ultimately, each person with diabetes becomes responsible for all aspects of self-care, including blood glucose monitoring and insulin administration. Regardless of their specific level of self-management, however, all students with diabetes may require assistance when blood glucose levels are out of the target range. Regardless of their age, there are times when all students who have diabetes need someone else to help them with their diabetes care tasks. The DMMP should indicate the student's need for assistance with diabetes management, level of independence, and ability to self-manage. Learning to ask for support and help is an important element of learning self-advocacy as a person living with diabetes.

# Introduction: Actions for School Personnel, Parents/Guardians, and Students

The health, safety, and educational progress of a student with diabetes depend on cooperation and collaboration among the students and their parents/guardians, members of the school health team, and the student's personal diabetes health care team. Working together, members of the school health team implement the provisions of the student's health care and education plans and provide the necessary assistance in the school setting. Refer to the **Diabetes Overview** for more information on the school health team and the health care and education plans.

The school nurse is the most appropriate member of the school health team to implement the student's plans. Trained diabetes personnel can be trained and supervised by a health care professional such as the school nurse or a CDCES to safely provide and assist with diabetes care tasks in the school setting. These tasks may include blood glucose monitoring, the use of diabetes technology including CGMs and insulin pumps, insulin and glucagon administration, and urine or blood testing for ketones.

School administrators and nursing personnel also should determine whether there are applicable state and local laws and factor them into helping the student with diabetes at school.

Once it has been determined that a student-specific diabetes care task may be delegated, the school nurse should be involved in the decision-making process to identify which school personnel are most appropriate to be trained. The school nurse or a CDCES develops and implements the training program, evaluates the ability of trained diabetes personnel to perform the task, and establishes a plan for ongoing supervision throughout the school year. **When trained diabetes personnel carry out tasks specified in the student's health care plans, under no circumstances should they make independent decisions about the daily, ongoing management of a student with diabetes. All diabetes care tasks should be provided as prescribed in the student's DMMP or personal diabetes health provider's orders.**

In addition, to help ensure that students with diabetes are safe, ready to learn, and able to participate in all school-sponsored events, **all school personnel should receive training that provides a basic understanding of diabetes, how it is managed, how to recognize the signs and symptoms of hypoglycemia and hyperglycemia, and who to contact for help (see Train School Personnel).**

The school nurse is the most appropriate member of the school health team to implement the student's plans.

## WHAT ACTIONS SHOULD SCHOOL PERSONNEL, PARENTS/GUARDIANS, AND STUDENTS TAKE?

The following pages are checklists describing the actions and responsibilities of each key school staff member, the parents/guardians, and the student. A staff member may fill more than one role. For example, a teacher or a coach also may be designated as the trained diabetes personnel. The following checklists are included with the guide:

- School district administrator
- Principal/school administrator/designee
- School nurse
- Trained diabetes personnel
- 504/IEP coordinator
- Teacher
- PE teacher/coach/athletic trainer
- Food service manager
- Transportation manager
- Bus driver
- School psychologist/guidance counselor/social worker
- Parents/guardians
- Student

The recommended actions do not represent legal checklists of what school personnel must do to comply with relevant federal and state laws. Rather, these checklists include steps that administrators, school nurses, school personnel, parent guardians, students, and others should take to help ensure effective diabetes management at school.

Print and distribute the Actions sheets to the appropriate staff members, the parents/guardians, and older and more mature students with diabetes.

### HOW TO USE THE ACTIONS SECTIONS

- Print and distribute the Actions sheets on the following pages to the appropriate staff members, the parents/guardians, and older and mature students with diabetes.
- Make copies of the Actions sheets for substitute personnel so that they understand their respective roles in diabetes management.
- Review the Actions sheets with school personnel during Level 2 and 3 of diabetes management training to ensure that all staff members understand their roles and responsibilities.

Please print and distribute to the school district administrator.

## Actions for the School District Administrator

Includes the superintendent, 504/IEP coordinator, or other school administrator responsible for coordinating student health services.

### LEGAL CONSIDERATIONS

- Understand and ensure compliance with the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act (**see School Responsibilities Under Federal Laws**).
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Learn about diabetes by reviewing the materials contained in this guide and by participating in Level 1 training.

### COMMUNICATION & COLLABORATION

- Provide leadership in developing district policy related to all aspects of diabetes management at school that is consistent with the standards of care recommended for children with diabetes and the law. This includes:
  - Availability of the school nurse, a diabetes-trained health care professional, or trained diabetes personnel when the student is at school or participating in school-sponsored activities and events
  - Delegation of responsibilities
  - Required staff training
  - Medication administration
  - Blood glucose and ketone monitoring
  - Access to smart phone as part of the student's diabetes technology system
  - Activation of emergency medical services in case of a diabetes emergency on or off the school campus. Obtain input from local or regional experts on developing appropriate policies.
- Support implementation of district policy. Support school district health professionals and other school administrators regarding:
  - Development, coordination, and implementation of diabetes management training
  - Ongoing quality control and improvement of these training programs
  - Development and implementation of an evaluation process to monitor the performance of those who receive training (**see How Do You Plan Effective Diabetes Management in the School Setting?**).
- Allocate sufficient resources to help students with diabetes (e.g., availability of the school nurse, a diabetes-trained health care professional, or trained diabetes personnel when the student is at school or participating in school-sponsored activities and events).
- Meet with members of the school health team, as needed. Address issues of concern about the provision of diabetes care by the school district, as appropriate.

### DAILY RESPONSIBILITIES

- Monitor schools attended by students with diabetes for compliance with district policy and updating and changing policies as needed.
- Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs.

Please print and distribute to the principal, school administrator, or designees.

## Actions for the Principal, School Administrator, or Designee

### LEGAL CONSIDERATIONS

- Understand and ensure compliance with the federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Learn about diabetes by participating in Level 1 training by reviewing the information in this guide.
- Participate in developing and implementing school policy related to diabetes management at school.
- Implement policy on availability of trained staff for students with diabetes. Address the availability of the school nurse, another diabetes-trained health care professional, or trained diabetes personnel when the student is in school or participating in school-sponsored activities and events. Coordinate with the school nurse to identify staff members who will receive training to serve as trained diabetes personnel to assist with or perform diabetes care tasks (**see How Do You Plan Effective Diabetes Management in the School Setting?**).
- Allocate sufficient resources for helping students with diabetes in the school setting, including resources for the three levels of diabetes management training described in this guide.
- Facilitate diabetes management training for school personnel as suggested in this guide. Work with the school nurse to arrange for a diabetes-trained health care professional, such as the school nurse or a certified diabetes care and education specialist (CDCES), to plan and provide the three levels of diabetes management training for school personnel.
- Identify all staff members who have responsibility for the student with diabetes throughout the school day and during school-sponsored extracurricular activities and field trips. Work with the school nurse to implement the appropriate level of training for staff members and who to contact in case of a diabetes emergency.
- Implement the policy for activation of emergency medical services in case of a diabetes emergency on or off the school campus.
- Include provisions for students with diabetes in emergency/disaster planning (e.g., lockdown or evacuation).

### COMMUNICATION & COLLABORATION

- Develop and implement a system to inform school health services of the pending enrollment of a student with diabetes.
- Alert all school staff members and all substitute personnel who teach or supervise the student with diabetes (including playground monitors, bus drivers, coaches, and lunchroom personnel) about their student's ongoing needs. Work with the school nurse to familiarize school staff members with the services and emergency procedures contained in the student's health care and education plans.
- Participate in a meeting with the school health team, which includes the student, the parents/guardians, school nurse, trained diabetes personnel, principal, office personnel, and the 504/IEP coordinator, teacher(s), and other staff members who have responsibility for the student. Plan to schedule and attend a meeting with the school health team before the school year starts when the child is newly diagnosed, or other times as appropriate, to discuss the health care-related services the student may need based on the student's **Diabetes Medical Management Plan (DMMP)**.

- Continue to work with the school health team to ensure implementation of the student's health care and education plans. Monitor compliance with these plans, addressing any concerns raised by the student, the parents/guardians, school nurse, and/or student's personal diabetes health care team.
- Support and facilitate ongoing communication among all members of the school health team and parents/guardians.

### DAILY RESPONSIBILITIES

- Promote a supportive learning environment for students with diabetes to manage their diabetes safely and effectively at school. This includes enabling students to
  - Monitor blood glucose levels
  - Administer insulin and other medications
  - Eat snacks for routine diabetes management and for treating low blood glucose levels
  - Have bathroom privileges and access to drinking water
  - Participate in all school-sponsored activities
  - Provide accommodations for health care appointments or illnesses
- Be able to respond to signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (**high blood glucose**) in accordance with the student's **emergency care plans for hypoglycemia and hyperglycemia**. Know when and how to contact the school nurse or trained diabetes personnel, know where emergency supplies are kept, and know the procedures for handling emergencies. Provide copies of the student's emergency care plans for hypoglycemia and hyperglycemia to all staff members who have responsibility for a student with diabetes.
- Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the school nurse.

## Actions for the School Nurse

### INTRODUCTION

When a school nurse is assigned to the school (or school district), they are the key school staff member who leads and coordinates the provision of health care services for a student with diabetes at school and during school-related activities. The school nurse, in collaboration with the principal, takes the lead in identifying, training, and providing ongoing supervision of diabetes-trained personnel.

Diabetes technology, therapies, and evidence-based practice all are changing rapidly. The school nurse, who provides care to students with diabetes and facilitates diabetes management training for school personnel, has the professional responsibility to acquire and maintain current knowledge and competency related to diabetes management on a regular and ongoing basis (**see Train School Personnel**).

The school nurse is responsible for the following actions annually or more often as necessary and should review them when notified that a student with diabetes is enrolled in the school.

### LEGAL CONSIDERATIONS

- Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Participate as a health expert on the teams that develop and implement the student's Section 504 plan, Individualized Education Program, or other written education plan.
- Understand state laws regarding delegation/assignment of diabetes care tasks and other laws relating to the provision of diabetes care in schools.
- Obtain appropriate consents from the student's parents/guardians and their personal diabetes health care team about the student's diabetes management or health status.
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Obtain and review the student's current **DMMP** and other pertinent information from the student's parents/guardians.
- Develop an **IHP** using the medical orders in the DMMP and information obtained from a thorough nursing assessment. Promote and encourage independence and self-care consistent with the student's ability, skill, maturity, and development as indicated in the DMMP. After reviewing the IHP with the parents/guardians and student, implement, review, and update the plan throughout the school year as needed.
- Prepare the student's emergency care plans for **hypoglycemia** and **hyperglycemia** based on the medical orders in the DMMP. Provide copies of the emergency plans to all school personnel who have responsibility for the student with diabetes throughout the school day and during school-sponsored extracurricular activities and field trips (e.g., teacher, coach, physical education teacher, lunchroom staff, bus driver).
- Plan and implement diabetes management training for the trained diabetes personnel and all staff members who have responsibility for the student with diabetes. Use the three levels of training described in this guide to design the diabetes management training and consider using standardized training materials that are available for training school personnel (**see Train School Personnel**). Determine that all personnel mentioned in the health care and education plans know their roles in carrying out these plans, are trained in how to carry out their roles, and know how their roles relate to each other, when and where to get help, where routine and emergency supplies are kept, and the procedures for handling emergencies.

- Distribute the **Diabetes Overview** in this guide and the Actions to all school personnel who have responsibility for students with diabetes and determine that they understand the basic elements of effective diabetes management and know how to recognize and respond to a diabetes emergency.
- Assess competence and provide ongoing supervision of trained diabetes **personnel** in carrying out the health care tasks outlined in the student's health care and education plans.
- Assist the classroom teacher(s) with developing a plan for substitute teachers and adult aides (e.g., behavior intervention specialists).
- Assist the physical education teacher with managing the student's physical activity program at school.
- Visit the teachers routinely to provide support and counseling and to address concerns regarding the student's diabetes management and the impact of diabetes on the student within the classroom setting.
- Collaborate with coworkers and outside agencies (e.g., school district registered dietitian nutritionist, food service manager, and food service personnel) to obtain nutrition information for the parents/guardians and the student.
- Provide ongoing education and training as the school year progresses for both established and new staff, as needed, and when the student's DMMP changes.
- Provide education and act as a resource on managing diabetes at school to the student and family.

## COMMUNICATION & COLLABORATION

- Facilitate the initial school health team meeting to discuss implementing the student's DMMP and IHP. Participate as a health expert on the teams that develop and implement the student's Section 504 plan, individualized education program, or other education plan. **Monitor compliance with these health care and education plans and facilitate follow-up meetings of the school health team** to discuss concerns, receive updates, and evaluate the need for changes to the student's plans, as appropriate.
- Notify parents/guardians and the student of which school personnel will be informed about the student's diagnosis and who will be trained to provide care.
- Maintain ongoing communication with the student's parents/guardians and their personal diabetes health care team about the student's diabetes management or health status, such as hypoglycemia episodes, hyperglycemia, general attitude, emotional issues, and self-management.

## DAILY RESPONSIBILITIES

- Obtain materials and medical supplies necessary for performing diabetes care tasks from the parents/guardians. Arrange a system for notifying the student or the parents/guardians when supplies have expired or need to be replenished.
- Obtain materials for the emergency supply kit from the parents/guardians and designate a storage location for emergency use. The kit should contain enough supplies for at least 72 hours. Notify all school personnel of its location.
- Perform or assist the student with routine and emergency diabetes care tasks, including blood glucose monitoring, urine or blood ketone testing, carbohydrate counting, use of diabetes technology including CGM and insulin pump, insulin and other medication administration, and glucagon administration. Be aware of the school's policy on activating emergency medical services in case of a diabetes-related emergency.
- Maintain accurate documentation of all diabetes care provided at school. Document communications with the student, the parents/guardians, and the student's personal diabetes health care team, and document communications related to the training and supervision of trained diabetes personnel.
- Conduct ongoing, periodic assessments of the student with diabetes and update the IHP. Assessments should include self-care abilities, adherence to diabetes care tasks, successes/barriers to meeting blood glucose target ranges, social-emotional concerns, and readiness for transitions (e.g., high school, college, adulthood). Watch for signs of depression and of eating disorders, such as unexplained weight loss.
- Foster a supportive learning environment and treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for

teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes is given access to snacks in the classroom. Be alert for concerns regarding school attendance and declining academic performance related to barriers of diabetes.

- Bullying should be reported to the school administrator, school psychologist, guidance counselor or designated school staff member.
- Be an advocate for students to help them meet their diabetes health care needs.

Please print and distribute to trained diabetes personnel.

## Actions for the Trained Diabetes Personnel

### INTRODUCTION

With proper supervision and training, nonmedical school personnel or unlicensed assistive personnel, called “trained diabetes personnel” in this guide, can be trained and supervised to help students manage their diabetes safely at school. Trained diabetes personnel may include school staff members such as teachers, coaches, and administrators as well as health aides and licensed practical/licensed vocational nurses. One or more school staff members should be trained to perform student-specific diabetes care tasks.

Once it has been determined that a student-specific diabetes care task may be delegated or assigned to trained diabetes personnel, the school nurse should be involved in the decision-making process to identify which school personnel are most appropriate to be trained. Ideally, one or more school staff members should be trained to provide diabetes care. A diabetes-trained health care professional, such as the school nurse or a diabetes care and education specialist, develops and implements the training program using standardized training materials such as those described in **Train School Personnel**. They also evaluate the ability of trained diabetes personnel to perform the task and establish a plan for ongoing supervision throughout the school year.

In general, the school nurse, in collaboration with the principal, takes the lead in identifying, training, and providing ongoing supervision of trained diabetes personnel. The school nurse, another qualified health professional, or at least one of the trained diabetes personnel should be onsite during school hours and school-sponsored activities that take place before or after school or off campus in which a student with diabetes participates.

The specific roles and responsibilities of the trained diabetes personnel will be determined by the student’s health care plans (**the Diabetes Medical Management Plan (DMMP)** are prepared by the student’s personal diabetes health care team and the individualized health care plan (IHP) and **emergency care plans for hypoglycemia and hyperglycemia** that are prepared by the school nurse) and education plan (Section 504 plan, other education plan, or Individualized Education Program (IEP)). All diabetes care tasks should be provided as prescribed by the student’s DMMP or physician’s orders. **Under no circumstances should a trained diabetes personnel make decisions independent of the DMMP.**

### LEGAL CONSIDERATIONS:

- Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Protect and maintain the student’s confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Successfully complete the Level 3 training described in this guide and demonstrate competency in student-specific diabetes care tasks (**see Train School Personnel**). Participate in additional education and training, as needed, or if the student’s DMMP changes.
- Know your role in helping the student with diabetes in a disaster, lockdown, or emergency.
- Participate in ongoing diabetes care education/training and assessments throughout the school year. Notify your school nurses of any specific educational needs that the student requires.

## COMMUNICATION & COLLABORATION

- Participate in school team meetings to discuss implementing the student's health care and education plans **(see How Do You Plan Effective Diabetes Management in the School Setting?)**.
- Communicate directly and regularly with the school nurse or the supervising health care professional. Ask for help or review when uncertain about any task you have been asked to perform.
- Consult with the school nurse and appropriate members of the school health team according to the student's health care and education plans and when questions arise or the student's health status changes.

## DAILY RESPONSIBILITIES

- Obtain necessary medical supplies and materials and perform or assist the student with routine and emergency diabetes care tasks, including blood glucose monitoring, urine and/or blood ketone testing, insulin and other medication administration, carbohydrate counting, and glucagon administration after receiving training under the direction of the school nurse or other assigned health care professional.
- Know how to recognize the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose), where routine and emergency supplies are kept, how to implement the student's emergency care plans for **hypoglycemia** and **hyperglycemia**, and how to activate emergency medical services in case of a diabetes emergency.
- Document the diabetes care provided according to standards and requirements outlined by school policy.
- Be available on campus during regular school hours and when the student participates in school-sponsored extracurricular activities held before or after school, as determined by the student's health care and education plans.
- Accompany the student on field trips or to off-campus school-sponsored sports events and activities, as determined by the student's health care and education plans.
- Foster a supportive learning environment and treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the teacher.

## Actions for the Teacher

The teacher and school nurse should work and collaborate to ensure appropriate and timely care of the student to enable academic success and full participation in all school activities.

### LEGAL CONSIDERATIONS

- Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Consult with the school nurse and the principal to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities and complete the training.
- Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes.
- Be prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) in accordance with the student's **emergency care plans for hypoglycemia and hyperglycemia**. These plans include information on when and how to contact the school nurse or trained diabetes personnel.
- Be aware of the school's policy for activating emergency medical services in case of a diabetes emergency. Know where supplies to treat low blood glucose are kept and where students with diabetes normally keep their supplies.
- Know your role in helping the student with diabetes in a disaster, lockdown, or emergency.
- Provide information for substitute teachers about the day-to-day and emergency needs of the student. Leave a copy of the **emergency care plans for hypoglycemia and hyperglycemia** readily available.

### COMMUNICATION & COLLABORATION

- Participate in the school health team meeting(s). The teacher(s) who has primary responsibility for the student participates in the school health team meeting(s) when the student's health care plans (**Diabetes Medical Management Plan (DMMP)**, **individualized health care plan (IHP)**, and/or **emergency care plans for hypoglycemia and hyperglycemia**) and education plan (Section 504 plan, other education plan, individualized education program) are discussed (**see How Do You Plan Effective Diabetes Management in the School Setting?**).
- Work with other members of the school health team to implement the student's health care and education plans.
- Notify the parents/guardians in advance of changes in the school schedule, such as class parties, field trips, and other special events.
- Communicate with the school nurse, trained diabetes personnel, or parents/guardians regarding the student's progress or any concerns about the student such as absenteeism, decline in academic performance, or change in typical behavior.

## DAILY RESPONSIBILITIES

- Recognize that a change in the student's behavior could be a symptom of blood glucose changes. Be aware that a student with low or high blood glucose levels may have some cognitive impairment that could adversely affect classroom performance, especially in timed-testing situations.
- When experiencing hypoglycemia, the student should never be left alone, sent anywhere alone, or sent with another student.
- Recognize that eating meals and snacks on time may be a critical component of diabetes management. Failure to eat lunch on time or not having enough time to finish a meal could result in low blood glucose levels, especially if a student has missed a morning snack or has had a physically strenuous or otherwise active morning at school.
- Provide a supportive learning environment for students with diabetes to manage their diabetes safely and effectively at school. This includes enabling students to check blood glucose, use smartphones and other monitoring technology, administer insulin and other medications, eat snacks for routine diabetes management and for treatment of low blood glucose levels, have bathroom privileges, have access to drinking water, and participate in all school-sponsored activities.
- Provide accommodations for students with diabetes such as alternative times and arrangements for exams and permission for absences—without penalty—for health care appointments and illness, as indicated in the student's health care and education plans.
- Provide instruction to the student if they miss school and opportunities to make up missed classroom assignments or exams due and opportunities to diabetes-related care or illness.
- Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to, for example, peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the physical education teacher, coach, athletic trainer, and, if appropriate, playground/ campus supervisor.

## Actions for the Physical Education Teacher, Coach, and Athletic Trainer

### LEGAL CONSIDERATIONS

- Understand your responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**See School Responsibilities Under Federal Laws**).
- Comply with the provisions contained in the student's individualized 504 Plan, individualized education program (IEP), or other written education plan.
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Consult with the school nurse, the principal, and school athletic director to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities.
- Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes (**see Diabetes Overview and Promote Regular Physical Activity**).
- Be prepared to recognize and respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) in accordance with the student's **emergency care plans for hypoglycemia and hyperglycemia**. These plans include information on when and how to contact the school nurse or trained diabetes personnel and should be immediately accessible during physical education activities, practices, and games.
- Ensure the student has immediate access to their diabetes supplies at all times including fast-acting glucose and glucagon if prescribed in the student's Diabetes Medical Management Plan (DMMP).
- Provide information to the substitute physical education teacher or substitute coach about the day-to-day and emergency needs of the student. Leave copies of the **emergency care plans for hypoglycemia and hyperglycemia** and supplies readily available.
- Notify school nurse and parent/guardian in advance of weekend or overnight trips.
- Know your role in helping the student with diabetes in a disaster, lockdown, or emergency.

### COMMUNICATION & COLLABORATION

- Work with other members of the school health team to implement the student's health care and education plans. Health care plans include the **DMMP, individualized health care plan (IHP), and emergency care plans for hypoglycemia and hyperglycemia**; the education plan includes the Section 504 plan, IEP, or other education plan.
- Provide input to the student's school health team as needed (**see How Do You Plan Effective Diabetes Management in the School Setting?**).
- Communicate with the school nurse and/or trained diabetes personnel regarding any observations or concerns about the student.

**Confirm and coordinate with school nurse to make sure a school nurse or trained diabetes personnel is available on-site to provide assistance with diabetes care at all times.**

## DAILY RESPONSIBILITIES

- Allow students with diabetes to wear their insulin pump and/or sensor and medical ID during physical activity.
- Designate an immediately accessible safe place for students to keep their diabetes supplies, including their insulin pump, if they remove it during physical activity, blood glucose monitoring equipment, and a quick-acting form of glucose so they are available at all activity sites.
- Respond immediately to take initial actions to treat hypoglycemia and hyperglycemia by providing student access to quick-acting form of glucose in accordance with the student's emergency care plans.
- Understand and be aware that hypoglycemia can occur during and up to 24 hours after physical activity.
- Allow the student to monitor blood glucose levels and/or administer insulin, as outlined in the student's health care plans and education plans.
- Recognize that a change in the student's behavior could be a symptom of blood glucose changes.
- Allow students to discontinue physical activity if hypoglycemia is suspected or if the student appears unwell. If treatment for hypoglycemia is required, report to school nurse and do not allow the student to engage in physical activity until blood glucose has returned to his/her target range.
- Be aware of the school's policy for activating emergency medical services in case of a diabetes emergency.
- Encourage the same level of participation in physical activities and sports for students with diabetes as for other students, except to meet medical needs.
- Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs and any resulting educational needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks during physical activity.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the food service manager.

## Actions for the Food Service Manager

### LEGAL CONSIDERATIONS

- Understand your and your staff's responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Ensure that your staff protects and maintains the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Consult with the school nurse and the principal to determine the appropriate level of diabetes management training that you and your staff should attend for carrying out your responsibilities and complete the training.
- Ensure that you and your staff review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes (**see Follow an Individualized Meal Plan**).
- Communicate to staff that eating meals and snacks on time, having sufficient time to finish eating, and accurately measuring serving sizes as per the menu are critical components of diabetes management. If students with diabetes fail to eat lunch on time, they could develop hypoglycemia (low blood glucose), especially if they have missed a morning snack or have had a physically strenuous or otherwise active morning at school. Under certain circumstances, supervisory lunch personnel may need to encourage the student to go to the front of the line and eat appropriate foods.
- Obtain a copy of the student's emergency care plans for **hypoglycemia** and **hyperglycemia** and keep them in a known, yet secure place in the lunchroom.
- Review the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia with your staff so they can recognize that a student's behavior change could be a symptom of blood glucose changes.
- Ensure that you and your staff know where supplies are kept to treat hypoglycemia (e.g., with the student or in another place). Supplies may include: four glucose tablets, one tube of glucose gel, four ounces of fruit juice (not low-calorie or reduced-sugar), or four to six ounces of soda (not low-calorie or reduced-sugar).

### COMMUNICATION & COLLABORATION

- Ensure that you and your staff work with the school health team to implement the student's health care and education plans. Health care plans include the DMMP, IHP, and emergency care plans for hypoglycemia and hyperglycemia; the education plan includes the Section 504 plan, the IEP, or other education plan.
- Provide input to the school health team when requested.
- Communicate with the school nurse and/or trained diabetes personnel regarding any concerns about the student.

### DAILY RESPONSIBILITIES

- Ensure your staff treats the student with diabetes the same as other students, except when necessary to respond to their medical needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.
- Obtain a copy of the student's meal plan from the health care plans developed by the student's personal diabetes care team and the school nurse. Accommodate student's **special dietary needs** when medically necessary.
- Provide breakfast and lunch menus and a meal schedule in advance to the student's parents/guardians, including grams of carbohydrates. Advise the parents/guardians of any unannounced menu substitutions (**see Follow an Individualized Meal Plan**).

Please print and distribute to the transportation manager.

## Actions for the Transportation Manager

### LEGAL CONSIDERATIONS

- Ensure that drivers understand their responsibilities under federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Ensure that drivers protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Consult with the school nurse and the principal to determine the appropriate level of diabetes management training that drivers should attend for carrying out their responsibilities and ensure that they complete the training.
- Inform drivers and substitute drivers about which students on their bus routes have diabetes in a way that protects the student's right to privacy and confidentiality.
- Ensure that drivers obtain a copy of the student's **emergency care plans for hypoglycemia and hyperglycemia** and keep them on the bus in a known, yet secure place. Ensure that substitute drivers have access to the plans.
- Ensure that drivers recognize that a student's behavior change could be a symptom of blood glucose changes.
- Ensure that drivers are prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) and take initial actions in accordance with the student's emergency care plans for **hypoglycemia** and **hyperglycemia**. These plans include information on when and how to contact the school nurse, trained diabetes personnel, and emergency medical services.
- Ensure that you and drivers know where supplies are kept to treat hypoglycemia (e.g., with the student or on the bus). Supplies may include glucagon, four glucose tablets, one tube of glucose gel, four ounces of fruit juice (not low-calorie or reduced-sugar), or four to six ounces of soda (not low-calorie or reduced-sugar).
- Ensure that drivers allow students with diabetes to eat snacks and drink beverages on the bus because these items may be needed at certain times to help students manage their diabetes.

### COMMUNICATION & COLLABORATION

- Ensure that drivers communicate with the school nurse, trained diabetes personnel, and other members of the school health team regarding the student's progress as well as any concerns.

### DAILY RESPONSIBILITIES

- Ensure substitute bus drivers are informed about which students on the bus have diabetes and are trained to provide emergency diabetes care.
- Ensure that drivers treat the student with diabetes the same as other students, except when necessary to respond to their medical needs. Be alert for teasing and bullying of the student with diabetes due to, for example, peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks in the classroom.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the bus driver.

## Actions for the Bus Driver

### LEGAL CONSIDERATIONS

- Know that federal and state laws may apply to students with diabetes and management of their disease.
- Respect the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- If you are informed that students on your bus route have diabetes, understand that you may have certain responsibilities relating to those students.
- Attend diabetes management training required by your supervisor to learn more about diabetes and to understand what you need to do.
- Obtain copies of the student's emergency care plans for **hypoglycemia** and **hyperglycemia** (low and high blood glucose) from the school nurse and keep them on the bus in a known, yet secure place. Leave the plans readily available for substitute drivers.
- Understand that a change in the student's behavior could be a symptom that the student's blood glucose is too high or too low.
- Understand and be aware that low blood glucose is a serious condition that can happen suddenly and requires immediate treatment. It can occur at any time—at the beginning of the day, on a field trip, or when children are going home.
- Be prepared to respond immediately to the signs and symptoms of hypoglycemia and hyperglycemia. Look over the student's **emergency care plans for hypoglycemia and hyperglycemia** for instructions on what to do and when and how to contact the school nurse or trained diabetes personnel.
- Be aware of the school's policy for activating emergency medical services in case a student has a diabetes emergency.

### COMMUNICATION & COLLABORATION

- Communicate with the school nurse, trained diabetes personnel, and other members of the school health team regarding the student's progress as well as any concerns (**see How Do You Plan Effective Diabetes Management in the School Setting?**).

### DAILY REQUIREMENTS

- Know where supplies are kept to treat hypoglycemia (e.g., with the student or on the bus). Supplies may include glucagon, four glucose tablets, one tube of glucose gel, four ounces of fruit juice (not low-calorie or reduced-sugar), or four to six ounces of soda (not low-calorie or reduced-sugar).
- Allow students with diabetes to eat snacks and drink beverages on the bus because these items may be needed at certain times to help students manage their diabetes.
- Treat the student with diabetes the same as other students, except when necessary to respond to their medical needs. Be alert for teasing and bullying of the student with diabetes due to peers' curiosity and lack of information about injections, blood glucose monitoring, or why the student with diabetes gets to eat snacks on the bus.
- Bullying should be reported to the school administrator, school psychologist, guidance counselor, or designated school staff member.

Please print and distribute to the school psychologist, counselor, and social worker.

## Actions for the School Psychologist, Guidance Counselor, and Social Worker

### LEGAL CONSIDERATIONS

- Understand your responsibilities under federal and state laws that may apply to students with diabetes including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Obtain appropriate consents from the student's parents/guardians and their personal diabetes health care team about the student's diabetes behaviors and/or mental health status.
- Protect and maintain the student's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Work with the school health team to implement the student's health care and education plans. Health care plans include the **Diabetes Medical Management Plans (DMMP)**, **individualized health care plan (IHP)**, and **emergency care plans for hypoglycemia and hyperglycemia**; the education plan includes the Section 504 plan, individualized education plan (IEP), or other education plan. The specific responsibilities of school psychologists, guidance counselors, and social workers may differ based on their professional training and on their job description.
- Consult with the school nurse and the principal to determine the appropriate level of diabetes management training you should attend for carrying out your responsibilities and complete the training.
- Review the information about diabetes in this guide and refer to it, as needed, to help the student with diabetes.
- Be prepared to respond immediately to the signs and symptoms of hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) in accordance with the student's **emergency care plans for hypoglycemia and hyperglycemia**. These plans include information on when and how to contact the school nurse or trained diabetes school personnel. Be aware of the school's policy for activating emergency medical services in case of a diabetes emergency.

### COMMUNICATION & COLLABORATION

- Participate in school health team meetings and communicate with the school nurse, trained diabetes personnel, and parents/guardians regarding the student's progress or any concerns about the student. Work with the school health team to identify students who may benefit from school-based mental health services and promote an inclusive and supportive learning environment for students with diabetes.

### DAILY RESPONSIBILITIES

- Identify ways to ensure that the student with diabetes is treated the same as other students, except when necessary to respond to their medical needs and any resulting educational needs.
- Be alert for teasing and bullying of the student with diabetes, which may occur due to peers' curiosity and lack of information about diabetes and its management such as why a student with diabetes may need to eat snacks in the classroom and/or leave class to use the restroom or go to the health office. Bullying should be reported to the school administrator or designated school staff member.
- Be aware of and be prepared to respond to the emotional needs of the student.
  - Children react differently to having diabetes. Some are accepting and open to discussing it, others are resentful and may attempt to hide it. People with diabetes are also at an increased risk for depression. Be aware of the student's feelings about having diabetes (**see Deal with Emotional and Social Issues**).

- Recognize that students with chronic illnesses such as diabetes may rebel by discontinuing all or part of their medical regimen. For example, some adolescents may stop checking their blood glucose or give their parents/ guardians and health care providers incorrect information about their blood glucose levels. Adolescents with diabetes may also burn out from the daily demands of diabetes self-management (called diabetes burnout) and may benefit from a temporary period of increased support and involvement by parents/guardians and school personnel to maintain the teen's health while providing needed respite from the burden of diabetes management.
- Watch for signs of eating disorders, such as unexplained weight loss.
- Be aware that some students may not wish to share information about their diabetes with other students or school staff, particularly if it makes them feel different from others.
- Promote and encourage independence and self-care consistent with the student's ability, skill, maturity, and development as indicated in the student's DMMP.
- When necessary, provide resources to promote the student's participation in all aspects of their education. Some students who are struggling to balance their education and diabetes and/or who are experiencing diabetes-related psychosocial challenges that negatively impact their functioning at school may benefit from school-based mental health support, while others may require community-based mental health support (**see the ADA's Mental Health Provider Directory**).

Please print and distribute to the parents/guardians.

## Actions for the Parents/Guardians

### LEGAL CONSIDERATIONS

- Be knowledgeable about federal and state laws that may apply to students with diabetes, including Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. Understand the procedures for implementing these laws (**see School Responsibilities Under Federal Laws**).
- Respect your child's confidentiality and right to privacy.

### PLANNING, EDUCATION, & TRAINING

- Obtain completed copies of your child's emergency care plans for **hypoglycemia** and **hyperglycemia** based on the medical orders in the **Diabetes Medical Management Plans (DMMP)** and **submit to your child's school nurse/designee before the beginning of the school year or as soon as possible after your child's diagnosis**. These plans inform school personnel about the symptoms of low and high blood glucose, what to do, and who to contact in case of an emergency. Be aware of the school's policy for activating emergency medical services in case of a diabetes emergency.
- Review the information in this guide about effective diabetes management in the school setting and refer to it to help your child, to promote your child's regular attendance at school, and to work collaboratively with your child's personal diabetes health care team and the school health team.

### COMMUNICATION & COLLABORATION

- Notify the school principal as well as the school nurse, school psychologist or guidance counselor, teachers, and coaches that your child has diabetes when your student enrolls in school, is newly diagnosed with the disease, and at the beginning of each school year.
- Work with your child's personal diabetes health care team to develop a **DMMP** that contains the medical orders for your child. Use the sample plan in this guide as an example of the information to include.
- Attend and participate in the initial and annual meetings of the school health team to discuss implementing the medical orders in your child's **DMMP** and to review the services your child may need. Participate in developing an individualized health care plan (IHP), Section 504 plan, individualized education plan (IEP) or other education plan (**see Prepare the Student's Education Plan**). Provide specific information to the school health team about your child's diabetes, performance of diabetes care tasks at home, and level of diabetes self-management skills.
- Permit sharing of medical information necessary for your child's safety between the school and your child's health care providers. Talk with your child's personal diabetes health care team about communicating with the school health team and responding to student emergencies as they occur.
- Communicate with your child, as needed, about their diabetes care.
- Know which school staff member to contact with concerns about your child's diabetes management at school.
- Inform the school nurse or designated school staff about any changes in your child's health status or medical orders.

### DAILY RESPONSIBILITIES

- Provide and maintain all supplies and equipment necessary for implementing your child's health care and education plans. Consult with the school nurse to monitor supplies and replenish them, as needed and refill or replace supplies that have expired.
- Provide and maintain all supplies and equipment necessary to accommodate your child's long-term needs (72 hours) in case of a disaster, lockdown, or emergency. These include blood glucose monitoring

equipment, supplies for insulin administration and urine and blood ketone testing, snacks, quick-acting glucose products, and a glucagon emergency kit.

- Inform appropriate school staff (principal, teachers, coaches, and others) when your child plans to participate in school-sponsored activities that take place before or after school or off campus so that health care coverage can be coordinated to ensure your child's health and safety.

Please print and distribute to the student with diabetes.

## Actions for the Student with Diabetes

### LEGAL CONSIDERATIONS

- Understand you have the right to privacy, but it is important that the school nurse, teachers, school administrators, coaches, bus drivers, other school staff, and some classmates know how to best support you and your diabetes management at school.

### PLANNING, EDUCATION, & TRAINING

- Be familiar with what your health care and education plans say about the help you will receive to manage your diabetes in the school setting and what is expected of you.
- Find out who is on the school health team—the people who will be helping you with your diabetes care. Know how to contact them if you need help.
- Talk with your school health team about which diabetes care tasks you are responsible for and which ones they will help you with. You may be responsible for the following diabetes care tasks:
  - Checking and recording blood glucose levels.
  - Figuring out the correct insulin dose you need.
  - Giving yourself insulin.
  - Throwing away needles, lancets, and other supplies you have used in a proper container or taking them home with you according to your health care and education plans.
  - Eating meals and snacks as planned.
  - Figuring out the carbohydrate (carb) content of food.
  - Treating low blood glucose with a quick-acting glucose product.
  - Keeping diabetes equipment and supplies with you at all times in a secure place.

### COMMUNICATION & COLLABORATION

- Participate in the school health team meetings to talk about your health care and education plans.
- Work with the school health team members if you need help during the school day with checking your blood glucose, getting insulin, or eating the right amount of food at the right time or need any help with diabetes management.
- Know where your back-up diabetes supplies are stored and who to contact when you need to use the supplies or when you need help.
- Communicate with your parent, as needed, about your diabetes care.
- Notify your parents, teacher, and/or school principal if you are being bullied or treated unfairly by other students and/or school staff and treated differently because of your diabetes.

### DAILY RESPONSIBILITIES

- Always wear a medical alert ID.
- Always carry a quick-acting source of glucose, as recommended by your personal diabetes health care team.

# Tools for Effective Diabetes Management

This section contains examples of two important tools for helping schools implement effective diabetes management—a sample DMMP and sample emergency care plans for hypoglycemia and hyperglycemia.

- **The DMMP** is completed by the student’s personal diabetes health care team and contains the medical orders that are the basis for the student’s health care and education plans.
- **The emergency care plans for hypoglycemia and hyperglycemia**, based on the DMMP, summarize how to recognize and treat hypoglycemia and hyperglycemia and who to contact for help.

The school nurse will coordinate development of these plans. Emergency care plans for hypoglycemia and hyperglycemia should be completed for each student with diabetes and should be copied and distributed to all school personnel who have responsibility for students with diabetes during the school day and during school-sponsored activities. Provide completed copies to the parents/guardians as well.

## HOW TO USE THE TOOLS FOR EFFECTIVE DIABETES MANAGEMENT

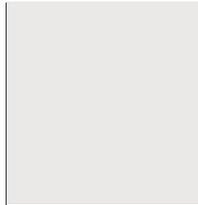
- The parents/guardians should give the sample DMMP to the student’s personal diabetes health care team as a resource for preparing the medical orders.
- The student’s personal diabetes health care team should fill out the plan, sign it, review it with the parents/guardians and the student, and return it to the school nurse before the student with diabetes returns to school after diagnosis or when the student transfers to a new school. The school nurse should adapt the sample emergency care plans for hypoglycemia and hyperglycemia to meet the needs of individual students, as prescribed in the student’s DMMP.
- The student’s personal diabetes health care team should review and update the DMMP at the beginning of each school year upon a change in the student’s prescribed care regimen, level of self-management, or school circumstances (e.g., a change in schedule) or at the request of the student, parents/guardians, or the school nurse.
- The emergency care plans for hypoglycemia and hyperglycemia should be copied and distributed to all regular and substitute personnel who have responsibility for the student with diabetes during the school day and during school-sponsored activities. Consider laminating these plans for use throughout the school year. Provide copies to the parents/guardians.
- During all levels of training, information in the emergency care plans for hypoglycemia and hyperglycemia on how to respond and who to contact for help in an emergency should be reviewed with school personnel.



# Safe at School®

# Diabetes Medical Management Plan

SCHOOL YEAR:



(Add student photo here.)

STUDENT LAST NAME: FIRST NAME: DOB:

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**PARENTS/GUARDIANS: Please complete pages 1 and 2 of this form and approve the final plan on page 6.**

## 1. DEMOGRAPHIC INFORMATION – PARENT/GUARDIAN TO COMPLETE

Student First Name: Last Name: DOB: Student's Cell #: Diabetes Type: Date Diagnosed: Month: Year:

School Name: School Phone #: School Fax #: Grade:

Home Room: School Point of Contact: Contact Phone #:

**STUDENT'S SCHEDULE** Arrival Time: Dismissal Time:

Travels to school by (check all that apply): Foot/Bicycle Car Bus Attends Before School Program	Meals Times: Breakfast AM Snack Lunch PM Snack Pre Dismissal Snack	Physical Activity: Gym Recess Sports Additional information:	Travels to: Home After School Program Via: Foot/Bicycle Car Student Driver Bus
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Parent/Guardian #1 (contact first): Relationship: Parent/Guardian #2: Relationship:

Cell #: Home #: Work #: Cell #: Home #: Work #:

E-mail Address: E-mail Address:

Indicate preferred contact method: Indicate preferred contact method:

## 2. NECESSARY SUPPLIES / DISASTER PLANNING / EXTENDED FIELD TRIPS

1. A 3-day minimum of the following Diabetes Management Supplies should be provided by the parent/guardian and accessible for the care of the student at all times.

- Insulin
- Syringe/Pen Needles
- Ketone Strips
- Treatment for lows and snacks
- Glucagon
- Antiseptic Wipes
- Blood Glucose (BG)
- Meter with (test strips, lancets, extra battery) – required for all Continuous Glucose Monitor (CGM) users
- Pump Supplies (Infusion Set,
- Cartridge, extra Battery/Charging Cord) if applicable
- Additional supplies:

2. View Disaster/Emergency Planning details – refer to Safe at School Guide

3. Please review expiration dates and quantities monthly and replace items prior to expiration dates

4. In the event of a disaster or extended field trip, a school nurse or other designated personnel will take student's diabetes supplies and medications to student's location.

Name of Health Care Provider/Clinic: Contact #: Fax #: Email Address (non-essential communication): Other:

STUDENT LAST NAME:

FIRST NAME:

DOB:

**3. SELF-MANAGEMENT SKILLS (DEFINITIONS BELOW)**

		Full Support	Supervision	Self-Care
Glucose Monitoring:	Meter CGM (Requires Calibration)			
Carbohydrate Counting				
Insulin Administration:	Syringe Pen Pump			
Can Calculate Insulin Doses				
Glucose Management:	Low Glucose High Glucose			

Self-Carry Diabetes Supplies: Yes No Please specify items:  
Smart Phone: Yes No

Device Independence: CGM Interpretation & Alarm Management Sensor Insertion Calibration Insulin Pumps Bolus  
Connects/Disconnects Temp Basal Adjustment Interpretation & Alarm Management Site Insertion Cartridge Change

Full Support: All care performed by school nurse and trained staff (as permitted by state law).  
Supervision: Trained staff to assist & supervise. Guide & encourage independence.  
Self-Care: Manages diabetes independently. Support is provided upon request and as needed.

**4. STUDENT RECOGNITION OF HIGH OR LOW GLUCOSE SYMPTOMS (CHECK ALL THAT APPLY)**

**Symptoms of High:**

Thirsty Frequent Urination Fatigued/Tired/Drowsy Headache Blurred Vision Warm/Dry/Flushed Skin  
Abdominal Discomfort Nausea/Vomiting Fruity Breath Unaware Other:

**Symptoms of Low:**

None Hungry Shaky Pale Sweaty Tired/Sleepy Tearful/Crying Dizzy Irritable  
Unable to Concentrate Confusion Personality Changes Other:

**Has student lost consciousness, experienced a seizure or required Glucagon:** Yes No If yes, date of last event:

**Has student been admitted for DKA after diagnosis:** Yes No If yes, date of last event:

**5. GLUCOSE MONITORING AT SCHOOL**

**Monitor Glucose:**

Before Meals With Physical Complaints/Illness (include ketone testing) High or Low Glucose Symptoms  
Before Exams Before Physical Activity After Physical Activity Before Leaving School Other:

**CONTINUOUS GLUCOSE MONITORING (CGM)**

(Specify Brand & Model:

Specify Viewing Equipment: Device Reader Smart Phone  
Insulin Pump Smart Watch iPod/iPad/Tablet

CGM is remotely monitored by parent/guardian.  
Document individualized communication plan in Section 504 or other plan to minimize interruptions for the student.  
May use CGM for monitoring/treatment/insulin dosing unless symptoms do not match reading.

**CGM Alarms:**

Low alarm mg/dL

High alarm mg/dL if applicable

**Please:**

- Permit student access to viewing device at all times
- Permit access to School Wi-Fi for sensor data collection and data sharing
- Do not discard transmitter if sensor falls

**Perform finger stick if:**

- Glucose reading is below mg/dL or above mg/dL
- If CGM is still reading below mg/dL (DEFAULT 70 mg/dL) 15 minutes following low treatment
- CGM sensor is dislodged or sensor reading is unavailable.  (see CGM addenda for more information) 
- Sensor readings are inconsistent or in the presence of alerts/alarms
- Dexcom does not have both a number and arrow present
- Libre displays Check Blood Glucose Symbol
- Using Medtronic system with Guardian sensor

**Notify parent/guardian if glucose is:**

below mg/dL (<55 mg/dL DEFAULT)

above mg/dL (>300 mg/d DEFAULT)

**Section 1-5 completed by Parent/Guardian**

Name of Health Care Provider/Clinic:

Contact #:

Fax #:

Email Address (non-essential communication):

Other:

STUDENT LAST NAME:

FIRST NAME:

DOB:

**6. INSULIN DOSES AT SCHOOL - HEALTHCARE PROVIDER TO COMPLETE**

**Insulin Administered Via:**

Syringe	Insulin Pen (	Whole Units	Half Units)	Insulin Pump (Specify Brand & Model: _____)
i-Port	Smart Pen			Insulin Pump is using Automated Insulin Delivery (automatic dosing) using an FDA-approved device
Other				Insulin Pump is using DIY Looping Technology (child/parent manages device independently, nurse will assist with all other diabetes management)

**DOSING** to be determined by Bolus Calculator in insulin pump or smart pen/meter unless moderate or large ketones are present or in the event of device failure (provide insulin via injection using dosing table in section 6A).

**Insulin Administration Guidelines**

Insulin Delivery Timing: Pre-meal insulin delivery is important in maintaining good glucose control. Late or partial doses are used with students that demonstrate unpredictable eating patterns or refuse food. Provide substitution carbohydrates when student does not complete their meal.

- Prior to Meal** (DEFAULT)
- After Meal** as soon as possible and within 30 minutes
- Snacking** avoid snacking \_\_\_\_\_ hours (DEFAULT 2 hours) before and after meals

**Partial Dose Prior to Meal:** (preferred for unpredictable eating patterns using **insulin pump therapy**)

Calculate meal dose using \_\_\_\_\_ grams of carbohydrate prior to the meal  
 Follow meal with remainder of grams of carbohydrates (may not be necessary with advanced hybrid pump therapy)  
 May advance to Prior to Meal when student demonstrates consistent eating patterns.

**For Injections, Calculate Insulin Dose To The Nearest:**

Half Unit (round down for < 0.25 or < 0.75 and round up for ≥ 0.25 or ≥ 0.75)  
 Whole Unit (round down for < 0.5 and round up for ≥ 0.5)

**Supplemental Insulin Orders:**

Check for **KETONES** before administering insulin dose if BG > \_\_\_\_\_ mg/dL (DEFAULT >300 mg/dL or >250 mg/dL on insulin pump) or if student complains of physical symptoms. Refer to section 9. for high blood glucose management information.

Parents/guardians are authorized to adjust insulin dose +/- \_\_\_\_\_ units

Insulin dose +/- \_\_\_\_\_ units

Insulin dose +/- \_\_\_\_\_ %

Insulin to Carb Ratio +/- \_\_\_\_\_ grams/units

Insulin Factor +/- \_\_\_\_\_ mg/dL/unit

Additional guidance on parent adjustments:

Name of Health Care Provider/Clinic:

Contact #:

Fax #:

Email Address (non-essential communication):

Other:

STUDENT LAST NAME:

FIRST NAME:

DOB:

**6A. DOSING TABLE – HEALTHCARE PROVIDER TO COMPLETE – SINGLE PAGE UPDATE ORDER FORM**

**Insulin:** (administered for food and/or correction)

**Rapid Acting Insulin:** Humalog/Admelog (Lispro), Novolog (Aspart), Apidra (Glulisine) Other:

**Ultra Rapid Acting Insulin:** Fiasp (Aspart) Lyumjev (Lispro-aabc) Other:

**Other insulin:** Humulin R Novolin R

Meal & Times	Food Dose		Glucose Correction Dose Use Formula See Sliding Scale 6B		PE/Activity Day Dose	
	Select if dosing is required for meal	<b>Carbohydrate Ratio:</b> Total Grams of Carbohydrate divided by Carbohydrate Ratio = Carbohydrate Dose	<b>Fixed Meal Dose</b>	<b>Formula:</b> (Pre-Meal Glucose Reading minus <b>Target Glucose</b> ) divided by <b>Correction Factor</b> = Correction Dose May give Correction dose every _____ hours as needed (DEFAULT 3 hours)		<b>Adjust:</b> <b>Carbohydrate Dose Total Dose</b> Indicate dose instructions below:
<b>Breakfast</b>	Breakfast Carb Ratio = _____ g/unit	<b>Breakfast</b> units	<b>Target Glucose</b> is: _____ mg/dL & <b>Correction Factor</b> is: _____ mg/dL/unit	Carb Ratio _____ g/unit Subtract _____ % Subtract _____ units		
<b>AM Snack</b>	AM Snack Carb Ratio = _____ g/unit	<b>AM Snack</b> units	<b>Target Glucose</b> is: _____ mg/dL & <b>Correction Factor</b> is: _____ mg/dL/unit	Carb Ratio _____ g/unit Subtract _____ % Subtract _____ units		
	No Carb Dose	No Insulin if < _____ grams	<b>No Correction dose</b>		Subtract _____ units	
<b>Lunch</b>	Lunch Carb Ratio = _____ g/unit	<b>Lunch</b> units	<b>Target Glucose</b> is: _____ mg/dL & <b>Correction Factor</b> is: _____ mg/dL/unit	Carb Ratio _____ g/unit Subtract _____ % Subtract _____ units		
<b>PM Snack</b>	PM Snack Carb Ratio = _____ g/unit	<b>PM Snack</b> units	<b>Target Glucose</b> is: _____ mg/dL & <b>Correction Factor</b> is: _____ mg/dL/unit	Carb Ratio _____ g/unit Subtract _____ % Subtract _____ units		
	No Carb Dose	No Insulin if < _____ grams	<b>No Correction dose</b>		Subtract _____ units	
<b>Dinner</b>	Dinner Carb Ratio = _____ g/unit	<b>Dinner</b> units	<b>Target Glucose</b> is: _____ mg/dL & <b>Correction Factor</b> is: _____ mg/dL/unit	Carb Ratio _____ g/unit Subtract _____ % Subtract _____ units		
			<b>No Correction dose</b>		Subtract _____ units	

**6B. CORRECTION SLIDING SCALE**

Meals Only	Meals and Snacks	Every	hours as needed						
to	mg/dL =	units	to	mg/dL =	units	to	mg/dL =	units	
to	mg/dL =	units	to	mg/dL =	units	to	mg/dL =	units	
to	mg/dL =	units	to	mg/dL =	units	to	mg/dL =	units	

**6C. LONG ACTING INSULIN**

Time	Lantus, Basaglar, Toujeo (Glargine) Levemir (Detemir) Tresiba (Degludec) Other	units	Daily Dose Overnight Field Trip Dose Disaster/Emergency Dose	Subcutaneously
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**6D. OTHER MEDICATIONS**

Time	Metformin Other	units	Daily Dose Overnight Field Trip Dose Disaster/Emergency Dose	Route
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Signature is required here if sending ONLY this one-page dosing update.

**Diabetes Provider Signature:**

**Date:**

Name of Health Care Provider/Clinic:

Contact #:

Fax #:

Email Address (non-essential communication):

Other:

STUDENT LAST NAME:

FIRST NAME:

DOB:

**7. LOW GLUCOSE PREVENTION (HYPOGLYCEMIA)**

**Allow Early Interventions**

Allow Mini-Dosing of carbohydrate (i.e., 1-2 glucose tablets) when low glucose is predicted, sensor readings are dropping (down arrow) at mg/dL (DEFAULT 80 mg/dL or 120 mg/dL prior to exercise) or with symptoms.

Allow student to carry and consume snacks School staff to administer

Allow Trained Staff/Parent/Guardian to adjust mini dosing and snacking amounts (DEFAULT)

**Insulin Management (Insulin Pumps)**

**Temporary Basal Rate** Initiate pre-programmed rate as indicated below to avoid or treat hypoglycemia.

Pre-programmed Temporary Basal Rate Named (Omnipod)

Temp Target (Medtronic) Exercise Activity Setting (Tandem) Activity Feature (Omnipod 5)

**Start:** minutes prior to exercise for minutes duration (DEFAULT 1 hour prior, during, and 2 hours following exercise).

**Initiated by:** Student Trained School Staff School Nurse

May disconnect and suspend insulin pump up to minutes (DEFAULT 60 minutes) to avoid hypoglycemia, personal injury with certain physical activities or damage to the device (keep in a cool and clean location away from direct sunlight).

**Exercise (Exercise is a very important part of diabetes management and should always be encouraged and facilitated).**

**Exercise Glucose Monitoring**

prior to exercise every 30 minutes during extended exercise following exercise with symptoms

**Delay exercise if glucose is < mg/dL (120 mg/dL DEFAULT)**

**Pre-Exercise Routine**

**Fixed Snack:** Provide grams of carbohydrate prior to physical activity if glucose < mg/dL

**Added Carbs:** If glucose is < mg/dL (120 DEFAULT) give grams of carbohydrates (15 DEFAULT)

**TEMPORARY BASAL RATE as indicated above**

**Encourage and provide access to water for hydration, carbohydrates to treat/prevent hypoglycemia, and bathroom privileges during physical activity**

**8. LOW GLUCOSE MANAGEMENT (HYPOGLYCEMIA)**

Low Glucose below mg/dL (below 70 mg/dL DEFAULT) or below mg/dL before/during exercise ( DEFAULT is < 120 mg/dl).

1. If student is awake and able to swallow give grams of fast acting carbohydrate (DEFAULT 15 grams). Examples include 4 ounces of juice or regular soda, 4 glucose tabs, 1 small tube glucose gel.

School nurse/parent may change amount given

2. Check blood glucose every 15 minutes and re-treat until glucose > mg/dL (DEFAULT is 80 mg/dL or 120 mg/dL before exercise).

**SEVERE LOW GLUCOSE (unconscious, seizure, or unable to swallow)**

Administer Glucagon, position student on their side and monitor for vomiting, call 911 and notify parent/guardian. If BG meter is available, confirm hypoglycemia via BG fingerstick. Do not delay treatment if meter is not immediately available. If wearing an insulin pump, place pump in suspend/stop mode or disconnect tubing from infusion site. Keep pump with student.

Gvoke PFS (prefilled syringe) by SC Injection 0.5 mg 1.0 mg

Gvoke HypoPen (auto-injector) by SC Injection 0.5 mg 1.0 mg

Gvoke Kit (ready to use vial and syringe, 1mg/0.2 ml) by SC injection

Zegalogue (dasiglucagon) 0.6 mg SC by Auto-Injector Zegalogue (dasiglucagon) 0.6 mg SC by Pre-Filled Syringe

Baqsimi Nasal Glucagon 3 mg

Name of Health Care Provider/Clinic:

Contact #:

Fax #:

Email Address (non-essential communication):

Other:

STUDENT LAST NAME:

FIRST NAME:

DOB:

**9. HIGH GLUCOSE MANAGEMENT (HYPERGLYCEMIA)**

Management of High Glucose over \_\_\_\_\_ mg/dL (Default is 300 mg/dL OR 250 mg/dl if on an insulin pump).

1. Provide and encourage consumption of water or sugar-free fluids. Give 4-8 ounces of water every 30 minutes. May consume fluids in classroom. Allow frequent bathroom privileges.
2. Check for Ketones (before giving insulin correction)
  - a. If Trace or Small Urine Ketones (0.1 – 0.5 mmol/L if measured in blood)
    - Consider insulin correction dose. Refer to the “Correction Dose” Section 6.A-B. for designated times correction insulin may be given.
    - *Can return to class and PE unless symptomatic*
    - Recheck glucose and ketones in 2 hours
  - b. If Moderate or Large Urine Ketones (0.6 – 1.4 mmol/L or >1.5 mmol/L blood ketones). This may be serious and requires action.
    - Contact parents/guardian or, if unavailable, healthcare provider
    - **Administer correction dose via injection.** If using Automated Insulin Delivery contact parent/provider about turning off automatic pump features. Refer to the “Blood Glucose Correction Dose” Section 6.A-B
    - If using insulin pump change infusion site/cartridge or use injections until dismissal.
    - No physical activity until ketones have cleared
    - Report nausea, vomiting, and abdominal pain to parent/guardian to take student home.
    - Call 911 if changes in mental status and labored breathing are present and notify parents/guardians.

Send student’s diabetes log to Health Care Provider (include details): If pre-meal blood glucose is below 70 mg/dL or above 240 mg/dL more than 3 times per week or you have any other concerns.

**SIGNATURES**

**This Diabetes Medical Management Plan has been approved by:**

Student’s Physician/Health Care Provider: \_\_\_\_\_ Date: \_\_\_\_\_

I, (parent/guardian) \_\_\_\_\_ give permission to the school nurse or another qualified health care professional or trained diabetes personnel of (school) \_\_\_\_\_ to perform and carry out the diabetes care tasks as outlined in this Diabetes Medical Management Plan. I also consent to the release of the information contained in this Diabetes Medical Management Plan to all school staff members and other adults who have responsibility for my child and who may need to know this information to maintain my child’s health and safety. I also give permission to the school nurse or another qualified health care professional to collaborate with my child’s physician/health care provider.

**Acknowledged and received by:**

Student’s Parent/Guardian: \_\_\_\_\_ Date: \_\_\_\_\_

**Acknowledged and received by:**

School Nurse or Designee: \_\_\_\_\_ Date: \_\_\_\_\_

# Hypoglycemia Emergency Care Plan

## (For Low Blood Glucose)

STUDENT NAME:

GRADE/TEACHER:

DATE OF PLAN:

### EMERGENCY CONTACT INFORMATION

**Parent/Guardian 1:**

Address:

Home Phone:

Work Phone:

Cell:

Email Address:

**Parent/Guardian 2:**

Address:

Home Phone:

Work Phone:

Cell:

Email Address:

**Health Care Provider:**

Phone Number:

**School Nurse:**

Contact Number(s):

**Trained Diabetes Personnel:**

Contact Number(s):

### CAUSES OF HYPOGLYCEMIA

- Too much insulin
- Missing or delaying meals or snacks
- Not eating enough food (carbohydrates)
- Getting extra, intense, or unplanned physical activity
- Being ill, particularly with gastrointestinal illness

### ONSET OF HYPOGLYCEMIA

- Sudden, symptoms may progress rapidly

**The student should never be left alone or sent anywhere alone or with another student when experiencing hypoglycemia.**

### HYPOGLYCEMIA SYMPTOMS: Check student's usual symptoms

#### MILD TO MODERATE SYMPTOMS

- Shaky or jittery
- Sweaty
- Hungry
- Pale
- Headache
- Blurry vision
- Sleepy
- Dizzy
- Lightheaded
- Confused
- Disoriented
- Uncoordinated
- Irritable or nervous
- Argumentative
- Combative
- Changed personality
- Changed behavior
- Inability to concentrate
- Weak
- Lethargic
- Other:

#### SEVERE SYMPTOMS

- Inability to eat or drink
- Unconscious
- Unresponsive
- Seizure activity or convulsions (jerking movements)

### ACTIONS FOR TREATING HYPOGLYCEMIA

Notify school nurse or trained diabetes personnel as soon as you observe symptoms. If possible, check blood glucose (blood sugar) at side of finger. Treat for hypoglycemia if blood glucose level is less than \_\_\_\_\_ mg/dL.

**WHEN IN DOUBT, ALWAYS TREAT FOR HYPOGLYCEMIA AS SPECIFIED BELOW.**

#### TREATMENT FOR MILD TO MODERATE HYPOGLYCEMIA

- Provide quick-acting glucose/sugar product equal to \_\_\_\_\_ grams of carbohydrates. Examples of 15 grams of carbohydrates are listed below:
  - 4 glucose tablets
  - 1 tube of glucose gel
  - 4 ounces of fruit juice (not low-calorie or reduced sugar)
  - 4–6 ounces (½ can) of soda (not low-calorie or reduced sugar)
- Wait 15 minutes.
- Recheck blood glucose level.
- Repeat quick-acting glucose product if blood glucose level is less than \_\_\_\_\_ mg/dL.
- Contact the student's parents/guardians.
- Once the student's blood glucose returns to normal, check the blood glucose level 1 hour later. Provide an additional source of carbohydrate (e.g., whole grain crackers, graham crackers, granola bar, yogurt, or fruit) if a meal or snack is not planned.

#### TREATMENT FOR SEVERE HYPOGLYCEMIA

- Position the student on his or her side.
- Do not attempt to give anything by mouth.
- Administer glucagon: \_\_\_\_\_ mg at \_\_\_\_\_ site.
- While treating, have another person call 911 (emergency medical services).
- Contact the student's parents/guardians.
- Stay with the student until emergency medical services arrive.
- Notify student's health care provider.

# Hyperglycemia Emergency Care Plan

## (For High Blood Glucose)

STUDENT NAME:

GRADE/TEACHER:

DATE OF PLAN:

### EMERGENCY CONTACT INFORMATION

**Parent/Guardian 1:**

Address:

Home Phone:

Work Phone:

Cell:

Email Address:

**Parent/Guardian 2:**

Address:

Home Phone:

Work Phone:

Cell:

Email Address:

**Health Care Provider:**

Phone Number:

**School Nurse:**

Contact Number(s):

**Trained Diabetes Personnel:**

Contact Number(s):

### CAUSES OF HYPERGLYCEMIA

- Too little insulin or other blood glucose-lowering medications
- Insulin pump or infusion set malfunction
- Food intake that has not been covered adequately by insulin
- Decreased physical activity
- Illness
- Infection
- Injury
- Severe physical or emotional stress

### ONSET OF HYPERGLYCEMIA

- Over several hours or days

### HYPERGLYCEMIA SYMPTOMS: Check student's usual symptoms

Diabetic ketoacidosis (DKA), which is associated with hyperglycemia, ketosis, and dehydration

- Increased thirst and/or dry mouth
- Frequent or increased urination
- Change in appetite and nausea
- Blurry vision
- Fatigue
- Dry mouth, extreme thirst, and dehydration
- Nausea and vomiting
- Severe abdominal pain
- Fruity breath
- Heavy breathing or shortness of breath
- Chest pain
- Increasing sleepiness or lethargy
- Depressed level of consciousness
- Other:

### ACTIONS FOR TREATING HYPERGLYCEMIA

Notify school nurse or trained diabetes personnel as soon as you observe symptoms.

### TREATMENT FOR HYPERGLYCEMIA

- Check the blood glucose level.
- Check urine or blood for ketones if blood glucose levels are greater than \_\_\_\_\_ mg/dL.
- Calculate the insulin correction dose needed as specified in the DMMP.
- Administer supplemental insulin dose: \_\_\_\_\_.  
(If student uses a pump, see instructions below.)
- Give extra water or sugar-free drinks (not fruit juices): \_\_\_\_\_ ounces per hour.
- Allow free and unrestricted access to the restroom.
- Recheck blood glucose every 2 hours to determine if decreasing to target range of \_\_\_\_\_ mg/dL.
- Restrict participation in physical activity if blood glucose is greater than \_\_\_\_\_ mg/dL and if ketones are moderate to large.
- Notify parents/guardians if blood glucose is greater than \_\_\_\_\_ mg/dL or if ketones are present.

#### For Students Using an Insulin Pump

- If student uses a pump, check to see if the pump is connected properly and functioning by giving a correction bolus through the pump and checking the blood glucose 1 hour later.
- If moderate or large ketones are present, treat ketones with a subcutaneous injection of insulin, then change pump site or initiate pump back-up plan.
- For infusion site failure: Insert new infusion set and/or replace reservoir or pod, or give insulin by syringe or pen.
- For suspected pump failure: Suspend or remove pump and give insulin by syringe or pen.

### TREATMENT FOR HYPERGLYCEMIA EMERGENCY

- Call parents/guardians, student's health care provider, and 911 (emergency medical services) right away.
- Stay with the student until emergency medical services arrive.

# School Responsibilities Under Federal Laws

The federal laws described in this section apply to a school's responsibility to help students manage diabetes, including confidentiality requirements. A particular student with diabetes could be covered under only one law or more than one law.

## **SECTION 504 OF THE REHABILITATION ACT OF 1973 (SECTION 504) AND THE AMERICANS WITH DISABILITIES ACT**

Section 504 prohibits recipients of federal financial assistance from discriminating against people on the basis of disability. Title II of the Americans with Disabilities Act prohibits discrimination on the basis of disability by public entities, including public elementary, secondary, and postsecondary educational institutions, regardless of whether the public entities receive federal financial assistance. Public school districts that receive federal financial assistance are covered by both Title II and Section 504.<sup>2</sup> For schools, Section 504<sup>2</sup> is enforced by the Office for Civil Rights (OCR) in the U.S. Department of Education (ED). OCR shares Title II enforcement responsibilities with the U.S. Department of Justice (DOJ).

Section 504 outlines a process for schools to use in determining whether a student has a disability and in determining what services a student with a disability needs. This evaluation process must be tailored individually because each student is different and their needs will vary. Diabetes will virtually always be found to be a disability under Section 504 and the Americans with Disabilities Act, because it substantially limits the functioning of the endocrine system.

Under Section 504 and the Americans with Disabilities Act, students with disabilities must be given an equal opportunity to participate in academic, nonacademic, and extracurricular activities. This includes, generally, an equal opportunity to attend the school the student would otherwise attend (for example, the local zoned school or school of choice).

In addition, as outlined in ED's Section 504 regulations, in order to ensure equal opportunity, school districts must identify all students with disabilities and provide them with a free appropriate public education (FAPE). Under Section 504, FAPE is the provision of regular or special education and related aids and services designed to meet the individual educational needs of students with disabilities as adequately as the needs of students who do not have disabilities are met. A student does not have to receive special education services, however, in order to receive related aids and services under Section 504.

Section 504 and Title II require schools to consider whether they can reasonably modify policies, practices, or procedures to ensure that a student has an equal opportunity to participate in and benefit from a school's services and programs, including extracurricular activities.

Administering insulin or glucagon, providing assistance in checking blood glucose levels, and allowing the student to eat snacks in school are a few examples of related aids and services or reasonable modifications

<sup>2</sup> As a general rule, because Title II does not provide less protection than Section 504, violations of Section 504 by public entities also constitute violations of Title II. To the extent that Title II provides greater protections, schools must also comply with Title II and provide those additional protections.

that schools may have to provide for a particular student with diabetes.<sup>3</sup> The most common practice is to include these related aids and services as well as any needed special education services in a written document, sometimes called a Section 504 plan.

Under Section 504, private schools that receive federal financial assistance may not exclude an individual student with a disability if the school can, with minor adjustments, provide an appropriate education to that student. Private, nonreligious schools, regardless of federal funding, are also covered by Title III of the Americans with Disabilities Act, which is enforced by DOJ and prohibits disability discrimination by certain private entities that offer examinations and courses related to educational and occupational certification.

## **INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)**

IDEA provides federal funds to assist state educational agencies and, through them, local educational agencies in making special education and related services available to eligible children with disabilities. IDEA is administered by the Office of Special Education Programs in the Office of Special Education and Rehabilitative Services in the U.S. Department of Education.

A child with a disability must meet the criteria of one or more of 13 disability categories and need special education and related services. The IDEA category of “other health impairment” includes diabetes as one of the health conditions listed. To qualify under IDEA, the student’s diabetes also must adversely affect educational performance to the point that the student requires special education and related services, as defined by state law. An example of a child with diabetes who may qualify under IDEA is a student who may have difficulty paying attention or concentrating in the learning environment because of recurring high or low blood glucose levels that adversely affect the student’s educational performance.

IDEA requires school districts to find and identify children with disabilities and to provide them a free appropriate public education (FAPE). Under IDEA, FAPE means special education and related services that meet state standards and are provided in conformity with an individualized education program (IEP). The IDEA regulations specify how school personnel and the parents/guardians, working together, develop and implement an IEP.

Each child’s IEP must include the supplementary aids and services to be provided for or on behalf of the child and a statement of the program modifications or supports for school personnel that will be provided for the child to make progress and to be involved in the general education curriculum. Administering insulin or glucagon, providing assistance in checking blood glucose levels, and allowing the student to eat snacks in school are a few examples of related services, supplementary aids and services, or program modifications or supports that schools could provide for a student with diabetes who is eligible under IDEA.

Generally, if a child with diabetes needs only a related service and not special education services as defined by state law, that child is not a child with a disability under IDEA and therefore is not eligible for any services under IDEA. Such a child will virtually always have a disability under Section 504 and the Americans with Disabilities Act, however, and would be eligible for services and/or modifications under Section 504 and the Americans with Disabilities Act. In general and consistent with the Family Educational Rights and Privacy Act, IDEA’s confidentiality provisions require prior written consent for disclosures of personally identifiable information contained in education records, unless a specific exception applies.

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## **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)**

FERPA generally prohibits schools from disclosing personally identifiable information in a student’s education record, unless the school obtains the prior written consent of the student’s parents/guardians or the eligible student (i.e., a student who is 18 years old or older or who attends an institution of postsecondary education). However, there are a number of exceptions to this requirement of prior written consent, several of which are

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<sup>3</sup> State and local laws, including those concerning who can administer medications, cannot interfere with the rights of students with disabilities guaranteed by Section 504 and the Americans with Disabilities Act.

discussed in more detail below. One such exception permits schools to disclose personally identifiable information in a student's education record without obtaining prior written consent to school officials, including teachers, who have been determined to have legitimate educational interests in the information, including the educational interests of the student. Schools that do this must include in their annual notification of FERPA rights to the parents/guardians and eligible students the criteria for determining who constitutes a school official and what constitutes a legitimate educational interest. If the school determines that particular school officials have a legitimate educational interest in information about a student's diabetes, the school may disclose such information to school officials without obtaining the prior written consent of parents/guardians or, if applicable, the eligible student. This exception for school officials with a legitimate educational interest also applies to a contractor, consultant, volunteer, or other party to whom a school has outsourced institutional services or functions, provided that the outside party:

1. Performs an institutional service or function for which the school would otherwise use existing school employees
2. Is under the direct control of the school with respect to the use and maintenance of education records
3. Is subject to the requirements in FERPA governing the use and redisclosure of personally identifiable information from education records

Another exception to the requirement of prior written consent permits schools to disclose personally identifiable information from an education record to appropriate parties, including the parents/guardians of an eligible student, in connection with an emergency, if knowledge of the information is necessary to protect the health or safety of the student or other individuals. Under this exception, a school may take into account the totality of the circumstances pertaining to a threat to the health or safety of a student or other individuals. If a school determines that there is an articulable and significant threat to the health or safety of a student or other individuals, it may disclose information from education records to any person whose knowledge of the information is necessary to protect the health or safety of the student or other individuals. If, based on the information available at the time of the determination, there is a rational basis for the determination, the United States Department of Education will not substitute its judgment for that of the school in evaluating the circumstances and making its determination.

Another exception to the requirement of prior written consent permits schools to disclose personally identifiable information from an education record to ED or to the OCR and DOJ for the enforcement of federal legal requirements that relate to federally supported education programs. For example, this exception would permit a school to disclose, without obtaining prior written consent, education records to OCR and DOJ so an investigation of the school's compliance with the Americans with Disabilities Act or Section 504 can be conducted.

In addition, under FERPA, the parents/guardians or eligible students must be given the opportunity to inspect and review the student's education records. A school must comply with a request for access to the student's education records within a reasonable period of time, but not more than 45 days after it has received the request. FERPA also permits the parents/guardians or eligible students to request that a school correct education records that they believe to be inaccurate or misleading, or in violation of the student's right of privacy. If the school decides not to amend the education records, the school must notify the parents/guardians or eligible students of its decision and the parents/guardians or eligible students then have the right to a formal hearing.

After the hearing, if the school still decides not to amend the education records, the parents/guardians or eligible students have the right to place a statement with the education records setting forth their views about the contested information or stating why they disagree with the school's decision not to amend the records, or both. Similar requirements also apply to education records collected, maintained, or used under Part B of the IDEA.

## HOW CAN I GET COPIES OF THE FEDERAL LAWS?

The statutes are found in the United States Code (USC). The regulations implementing the statutes are found in the Code of Federal Regulations (CFR).

- **Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. 794, implementing regulations at 34 CFR Part 104**
- **Title II of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. 12134 et seq., implementing regulations at 28 CFR Part 35**
- To obtain copies of the Section 504 and Title II regulations, you also may contact the customer service team of the Office for Civil Rights, U.S. Department of Education, toll-free at 1-800-421-3481. For TTY, call 1-800-877-8339.
- **Individuals with Disabilities Education Act, 20 U.S.C. 1400 et seq., implementing regulations at 34 CFR Part 300**
- For copies of the IDEA regulations, you also may contact ED Pubs at 1-877-433-7827.
- **Family Educational Privacy Act (FERPA)**

The Office for Civil Rights (OCR) and the Office of Special Education Programs (OSEP) in the U.S. Department of Education can answer questions and provide technical assistance.

For more information from OCR, contact OCR's customer service team toll-free at 1-800-421-3481. For TTY, call 1-877-521-2172. Information is also available on the **OCR website**. You may also contact one of OCR's 12 enforcement offices around the country. Contact information is available from the OCR customer service team and from the OCR website.

- For more information from OSEP, call 202-245-7459. For TTY, call 202-205-5637. Information is also available on **OSEP's website**.
- More information about **FERPA** is available at ED's Family Policy Compliance Office website. School officials may also direct questions to **FERPA@ed.gov**.
- The DOJ can answer questions and provide technical assistance about the Americans with Disabilities Act. For more information, call 1-800-514-0301. For TTY, call 1-800-514-0383. Information is also available on DOJ's **Americans with Disabilities Act website**.

# Glossary of Diabetes Terms

## A

### **ACANTHOSIS NIGRICANS**

A condition in which the skin around the neck, armpits, or groin looks dark, thick, and velvety. Acanthosis nigricans is a physical sign of insulin resistance.

### **AMERICANS WITH DISABILITIES ACT**

A federal law enacted in 1990 to protect people with disabilities from discrimination. Under this law, diabetes will virtually always be considered a disability.

### **AUTOIMMUNE DISEASE**

A disorder in which the immune system mistakenly attacks and destroys body tissue that it believes to be foreign. In type 1 diabetes, an autoimmune disease, the immune system attacks and destroys the insulin-producing beta cells in the pancreas.

## B

### **BASAL INSULIN**

Long-acting or intermediate-acting insulin delivered once or twice a day. Basal insulin is used to control blood glucose levels overnight and between meals.

### **BASAL/BOLUS INSULIN PLAN**

An insulin plan that mimics the way a normally functioning pancreas produces insulin by using a coordinated combination of different types of insulin to achieve target blood glucose levels at meals, snacks, during periods of physical activity, and through the night.

### **BETA CELLS**

Cells that make insulin, a hormone that controls the level of glucose (a type of sugar) in the blood. Beta cells are found in the pancreas within clusters of cells known as islets. In type 1 diabetes, the body's immune system mistakenly destroys the beta cells. Without beta cells, the pancreas can't make insulin.

### **BLOOD GLUCOSE LEVEL**

The amount of glucose (sugar) in the blood.

### **BLOOD GLUCOSE METER**

A small, portable machine that measures how much glucose is in the blood. After pricking the side of the fingertip with a lancet, a person places a drop of blood on a special test strip that is inserted in the machine. The meter (or monitor) then gives the blood glucose level as a number on the meter's digital display.

### **BLOOD GLUCOSE MONITORING**

Checking the amount of glucose in the blood. Also called self-monitoring of blood glucose.

### **BOLUS INSULIN**

A dose of rapid-acting or short-acting insulin given to cover the carbohydrate in a meal or snack and to lower blood glucose levels that are above target.

### **BLOOD KETONE TESTING**

Use of a meter to test the blood for ketones (or ketone bodies).

## C

### **CARBOHYDRATES, ALSO CALLED CARBS**

One of the three sources of energy in food for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods that contain carbohydrates raise blood glucose levels. Carbohydrate foods include breads, crackers, and cereals; pasta, rice, and grains; vegetables; milk and yogurt; fruit, juice, and sweetened sodas; and table sugar, honey, syrup, molasses, cakes, pies, and cookies.

### **CARBOHYDRATE COUNTING**

A popular meal planning approach for people with diabetes that involves calculating the number of grams of carbohydrate, or choices of carbohydrate, eaten at meals or snack.

This method of meal planning is also used by people with diabetes who use multiple daily insulin injections or an insulin pump. Individuals who use this method do not have to eat the same amount of carbs at every meal or snack, but they must adjust insulin doses (with rapid- or short-acting insulin) to cover the amount of carbs consumed. This type of meal plan typically is used in conjunction with a basal/bolus insulin plan.

## **CELIAC DISEASE**

A condition in which a person cannot eat any food products that contain gluten or that have been prepared in a gluten-contaminated environment. Gluten is found in many grains, including wheat, rye, and barley, which are found in many breads, pastas, cereals, and processed foods. Ingestion of gluten can cause gastrointestinal side effects such as bloating, abdominal pain, or diarrhea.

## **CERTIFIED DIABETES CARE AND EDUCATION SPECIALIST (CDCES)**

A health care professional who has expertise and is certified to help people manage their diabetes.

## **COMPLICATIONS OF DIABETES**

Serious health problems that may occur when a person has diabetes. Short-term complications include hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose). Long-term complications, which may develop when a person has had diabetes for a long time, may include heart disease, stroke, blindness, kidney failure, gum disease, nerve disease, and amputation of a foot or leg.

## **CONSISTENT CARB INTAKE MEAL PLAN**

A method of meal planning in which people with diabetes aim for a set amount of carbs at each meal and snack and do not adjust their mealtime insulin for the amount of carb intake. These individuals follow a traditional or fixed insulin dose plan.

## **CONTINUOUS GLUCOSE MONITOR (CGM)**

A device that records blood glucose levels throughout the day. The CGM works through a sensor inserted under the skin that measures interstitial blood glucose levels (the blood glucose found in the fluid between cells) at regular intervals.

## **CORRECTION FACTOR**

The amount of insulin needed to lower blood glucose to the target level (also called insulin correction factor or insulin sensitivity factor).

# **D**

## **DIABETES**

A condition in which the body cannot produce insulin and/or use it properly.

## **DIABETES CARE AND EDUCATION SPECIALIST**

A health care professional who has expertise to help people manage their diabetes.

## **DIABETES MEDICAL MANAGEMENT PLAN (DMMP)**

Describes the medical orders or diabetes care plan developed by the student's personal diabetes health care team and agreed to by the parents/guardians.

## **DIABETIC KETOACIDOSIS (DKA)**

An emergency condition in which extremely high blood glucose levels, along with a severe lack of insulin, result in the breakdown of body fat for energy and an accumulation of ketones in the blood and urine.

## **DO-IT-YOURSELF (DIY) DEVICES**

"Artificial pancreas" or "looping" systems that are not FDA approved and can be customized using a continuous glucose monitor, an insulin pump, and another device (like a smartphone) to automate the interaction between the two.

# **E**

## **EDUCATION PLAN**

A plan that addresses the student's needs for services to manage their diabetes safely and effectively in school, as required under Section 504 of the Rehabilitation Act or the Individuals with Disabilities Education Act (IDEA). These include the Section 504 plan, other education plan, or individualized education program (IEP).

## **EMERGENCY CARE PLANS FOR HYPOGLYCEMIA AND HYPERGLYCEMIA**

Plans that provide school personnel with essential information on how to recognize and respond to symptoms of hypoglycemia and hyperglycemia, who to contact for help, and what to do in an emergency.

## F

### **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)**

A federal law that, with certain exceptions, prohibits schools from disclosing personally identifiable information in a student's education record, unless the school obtains prior written consent from the student's parents/guardians or from the eligible student (i.e., a student who is 18 years old or older or who attends an institution of postsecondary education).

## G

### **GESTATIONAL DIABETES**

A form of diabetes that can develop during pregnancy and is caused by the hormones of pregnancy.

### **GLUCAGON**

A hormone that raises the level of glucose in the blood. Glucagon, given by injection or dry nasal spray, is used to treat severe hypoglycemia.

### **GLUCOSE**

A simple sugar, with diabetes "blood glucose" which is created from the foods we eat that is needed to fuel the body. The body carries glucose through the blood to the cells where it is used for energy. In people with diabetes, the cells cannot change the glucose to energy due to lack of insulin or because the insulin the body produces does not work properly.

### **GLUCOSE TABLETS OR GEL**

Special products that deliver a pre-measured amount of pure glucose. They are a quick-acting form of glucose used to counteract hypoglycemia.

## H

### **HEALTH CARE PLANS**

Plans that outline each student's individual diabetes management needs. These include the Diabetes Medical Management Plan (DMMP) prepared by the student's personal diabetes health care team and the individualized health care plan (IHP) and emergency care plans for hypoglycemia and hyperglycemia prepared by the school nurse.

### **HEALTHY, HUNGER-FREE KIDS ACT**

A federal law passed in 2010 focused on improving child nutrition. The law authorizes funding and sets policy for the U.S. Department of Agriculture's core child nutrition programs: the National School Lunch Program; the School Breakfast Program; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); the Summer Food Service Program; and the Child and Adult Care Food Program.

### **HORMONE**

A chemical produced by one organ that travels in the blood to affect other organs. Insulin is an example of a hormone.

### **HYBRID CLOSED LOOP SYSTEMS**

Automated insulin administration via pump communication directly with CGM.

### **HYPERGLYCEMIA**

High blood glucose. Occurs when the level of glucose in the blood is higher than the target range.

### **HYPOGLYCEMIA**

Low blood glucose. Occurs when the level of glucose in the blood drops below the target range.

### **HYPOGLYCEMIA UNAWARENESS**

When people with diabetes do not feel or recognize early physical warning signs of hypoglycemia.

## I

### **INDIVIDUALIZED EDUCATION PROGRAM (IEP)**

A program designed for a student with a disability covered by the Individuals with Disabilities Education Act (IDEA). Each child's IEP must include the supplementary aids and services to be provided for or on behalf of the child, as well as a statement of the program modifications or supports for school personnel that will be provided for the child to make progress and to be involved in the general education curriculum.

### **INDIVIDUALIZED HEALTH CARE PLAN (IHP)**

A written plan developed by the school nurse in collaboration with the student's personal diabetes health care team and the family to implement the student's Diabetes Medical Management Plan (DMMP). Sometimes called the nursing care plan.

## **INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)**

A federal law that provides funds to states to support special education and related services for children with disabilities, administered by the Office of Special Education Programs in the U.S. Department of Education. To be eligible for services under IDEA solely on the basis of diabetes, a student's diabetes must impair their educational performance so that they require special education and related services. IDEA also contains specific confidentiality protections for student records.

## **INFUSION SET**

A device that connects the insulin pump device to your body. A needle is housed inside a cannula (a tiny plastic tube) that is placed under the skin in the subcutaneous fat. The needle is necessary to puncture the skin to insert the set. After insertion, the needle is removed and the cannula remains in place.

## **INPEN**

Smart insulin pen system combining reusable Bluetooth-enabled insulin pen with a mobile app used to deliver insulin, help calculate doses, and estimate carbs for meals.

## **INSULIN**

A hormone made in the pancreas that allows glucose to enter the cells of the body where it is used for energy. Several types of manufactured insulin are used in combination to treat people with diabetes.

## **INSULIN INJECTIONS**

Using a needle and a syringe or an insulin pen to put insulin into the body.

## **INSULIN PEN**

A pen-like device used to put insulin into the body.

## **INSULIN PUMP**

A computerized device that is programmed to deliver small, steady doses of insulin throughout the day. Additional doses are given when needed to cover food intake and to lower high blood glucose levels. The insulin is delivered through a system of plastic tubing (infusion set) or from a pod worn on the skin and controlled by a handheld remote device.

## **INSULIN RESISTANCE**

A condition in which the cells in the body do not respond normally to the action of insulin. Many people with type 2 diabetes have insulin resistance.

## **INSULIN-TO-CARB RATIO**

Used to determine the number of units of insulin needed to cover the number of grams of carbs in the food a person with diabetes plans to eat.

## **I-PORT**

Device placed subcutaneously to assist with insulin delivery via a syringe that injects insulin into the port of the i-Port.

## **K**

### **KETOACIDOSIS**

See diabetic ketoacidosis (DKA).

### **KETONES (KETONE BODIES)**

Chemicals made by the body when there is not enough insulin in the blood and the body must break down fat for energy. Ketones are usually associated with high blood glucose but also may occur when a person with diabetes is ill and blood glucose levels fall below the target range. See also diabetic ketoacidosis (DKA).

### **KETOSIS**

A buildup of ketones in the body that may lead to diabetic ketoacidosis. Signs of ketosis are nausea, vomiting, and stomach pain.

## **L**

### **LANCET**

A small needle, inserted in a spring-loaded device, used to prick the skin and obtain a drop of blood for checking blood glucose levels.

## **M**

### **MEDICAL IDENTIFICATION**

An identification card, necklace, or bracelet that indicates a person has diabetes and provides emergency numbers to call for help.

### **MG/DL (MILLIGRAMS PER DECILITER)**

A term used in blood glucose monitoring to describe how much glucose is in a specific amount of blood.

## N

### **NURSING CARE PLAN**

A plan developed by the school nurse that is used to implement the student's diabetes medical management plan. See also individualized health care plan.

## P

### **PALLOR**

Abnormal paleness of the skin.

### **PANCREAS**

The organ behind the lower part of the stomach that makes insulin.

### **PEAK EFFECT TIME**

Time when injected insulin has its major impact on reducing blood glucose levels.

### **PERSONAL DIABETES HEALTH CARE TEAM**

Includes the student with diabetes, parents/guardians, student's doctor, nurse, registered dietitian nutritionist, diabetes educator, and other health care providers involved in the student's care.

## Q

### **QUICK-ACTING GLUCOSE**

Foods or products containing simple sugar that are used to raise blood glucose levels quickly during a hypoglycemic episode. Examples include three or four glucose tablets, one tube of glucose gel, four ounces of fruit juice (not low-calorie or reduced-sugar), and four to six ounces (half a can) of soda (not low-calorie or reduced-sugar).

## R

### **REGISTERED DIETITIAN NUTRITIONIST (RDN)**

A food and nutrition expert who translates the science of nutrition into practical solutions for healthy living.

## S

### **SECTION 504 OF THE REHABILITATION ACT (SECTION 504)**

A federal law that prohibits recipients of federal financial assistance from discriminating against people on the basis of disability. Under this law, diabetes will virtually always be considered a disability.

### **SCHOOL HEALTH TEAM**

Includes the student with diabetes, the parents/guardians, the school nurse and other health care personnel, the staff members designated as trained diabetes personal, administrators, the principal, the 504/IEP coordinator, office staff, the student's teacher(s), the school psychologist or guidance counselor, the coach, lunchroom personnel, and other school staff members.

### **SCHOOL NURSE**

The school staff member who promotes the health and safety of students, intervening to manage current and potential health problems. The school nurse provides case management services and actively collaborates with others to build the student's and family's capacity to manage health issues. School nurses hold current licenses as registered nurses in the states in which they practice.

### **SMART INSULIN PEN CAP**

The "smart" insulin pen cap fits on most commercially available disposable insulin pens and uses glucose data from the Freestyle Libre 2 CGM to provide insulin dosing recommendations.

### **SYRINGE**

A device used to inject medications such as insulin into body tissue.

## T

### **TARGET OR TARGET RANGE**

The ideal range of blood glucose levels as determined by people with diabetes and their diabetes health care team.

### **TEST STRIPS**

Specially designed strips used in blood glucose meters to check blood glucose levels or in urine testing for ketones.

## **TRAINED DIABETES PERSONNEL**

Nonmedical personnel who have received in-depth training about diabetes and diabetes management and can perform student-specific diabetes care tasks such as blood glucose monitoring, carb counting, insulin administration, recognition and treatment of hypoglycemia and hyperglycemia, and urine or blood ketone testing under supervision of the school nurse or a diabetes-trained health care professional. They may also be called unlicensed assistive personnel, assistive personnel, paraprofessionals, or trained nonmedical personnel.

## **TYPE 1 DIABETES**

Formerly called juvenile diabetes, a disease of the immune system, the body's system for fighting infection. In people with type 1 diabetes, the immune system attacks the beta cells (the insulin-producing cells of the pancreas) and destroys them. Because the pancreas can no longer produce insulin, people with type 1 diabetes must take insulin daily to live.

## **TYPE 2 DIABETES**

Formerly called adult-onset diabetes and the most common form of the disease. People can develop it at any age, even during childhood. A progressive disease, type 2 diabetes usually begins with insulin resistance, a condition in which cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. Over time, however, the pancreas loses its ability to secrete enough insulin in response to meals or to control blood glucose levels overnight or during periods of fasting.

## **U**

### **URINE KETONE TESTING**

Measuring the level of ketones in the urine using test strips.

# Additional Reading

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## DEVICE OPERATION MANUALS:

- Omnipod Handbook [https://www.omnipod.com/sites/default/files/2021-04/Omnipod-System\\_User-Guide\\_English.pdf](https://www.omnipod.com/sites/default/files/2021-04/Omnipod-System_User-Guide_English.pdf)
- Omnipod DASH Handbook [https://www.omnipod.com/sites/default/files/2021-04/Omnipod-DASH\\_User-Guide\\_English.pdf](https://www.omnipod.com/sites/default/files/2021-04/Omnipod-DASH_User-Guide_English.pdf)
- T:slim user guides can be found here <https://support.tandemdiabetes.com/hc/en-us/articles/1500011388262-Where-can-I-find-the-User-Guide-for-my-t-slim-X2-pump>
- Medtronic devices user guides can be found here <https://www.medtronicdiabetes.com/download-library>
- Dexcom user guides and tutorials can be found here: <https://www.dexcom.com/guides>
- Freestyle Libre video tutorials can be found here: <https://www.freestyle.abbott/us-en/support.html>
- Glucagon information can be found here:
  - Baqsimi: <https://www.baqsimi.com/>
  - Glucagen Hypo Kit: <https://www.glucagenhypokit.com/>
  - Gvoke: <https://gvokeglucagon.com/>
  - Zegalogue: <https://www.zegalogue.com/>

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Lilly has been a global leader in diabetes care since 1923, when we introduced the world's first commercial insulin. Today we are building upon this heritage by working to meet the diverse needs of people with diabetes and those who care for them. Through research, collaboration and quality manufacturing we strive to make life better for people affected by diabetes and related conditions. We work to deliver breakthrough outcomes through innovative solutions—from medicines and technologies to support programs and more. Here is the link to our products:

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Xeris Pharmaceuticals, Inc., the maker of Gvoke HypoPen<sup>®</sup> (glucagon injection), is dedicated to unlocking the potential of glucagon. We believe that our technology can have a profound impact on the lives of patients and their families. That's why we are proud to be the first to develop liquid glucagon, but that's just the beginning. We're also studying how our formulation technology can impact patients with other conditions. We have a persistent drive to pursue solutions that have the potential to change lives.

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