Helping the Student with Diabetes Succeed

A Guide for School Personnel

U.S. Department of Health and Human Services

A Joint Program of the National Institutes of Health and the Centers for Disease Control and Prevention

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June 2003

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This guide was produced by the National Diabetes Education Program (NDEP), a federally sponsored partnership of the National Institutes of Health, the Centers for Disease Control and Prevention, and more than 200 partner organizations. The following organizations support its use by school personnel:

American Academy of Pediatrics

American Association for Health Education

American Association of Diabetes Educators

American Diabetes Association

American Dietetic Association

American Medical Association

Barbara Davis Center for Childhood Diabetes

Centers for Disease Control and Prevention

Indian Health Service

Juvenile Diabetes Research Foundation International

Lawson Wilkins Pediatric Endocrine Society

National Association of Elementary School Principals

National Association of School Nurses

National Association of Secondary School Principals

National Association of State Boards of Education

National Diabetes Education Program

National Education Association Health Information Network

National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

U.S. Department of Education

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Acknowledgments

Many National Diabetes Education Program partners contributed to the development of this guide. A core writing and review team helped research, write, and refine drafts of the manuscript and enlisted the involvement of school personnel and parents in reviewing the guide. Their dedication and assistance were invaluable (their names appear below).

Guides developed by state departments of health and education in New York, Rhode Island, Vermont, Virginia, and Washington to address the issue of diabetes in schools and materials from the National Association of State Boards of Education provided additional background information and direction for developing this document.

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Foreword

Major research advances have been made in diabetes management and control during the past decade. Several landmark research studies have proved conclusively that aggressive treatment to lower blood glucose (sugar) levels can help prevent or delay diabetes-related complications affecting the eyes, kidneys, nerves, and cardiovascular system. In addition, advances in medical research and technology have produced an array of treatment and management tools that have made it easier for people with diabetes to check their blood glucose levels and to control them.

For young people with diabetes, these advances mean a brighter and healthier future. Blood glucose levels that are well managed have the potential to help young people not only to stave off the long-term complications of diabetes but also to feel better and to be happier and more productive at school and at play. Accordingly, students with diabetes need a supportive environment to help them take care of their diabetes throughout the school day and at school-sponsored activities.

The National Diabetes Education Program (NDEP) developed this guide to educate and inform school personnel about diabetes, how it is managed, and how each member of the school staff can help meet the needs of students with the disease. School principals, administrators, nurses, teachers, coaches, bus drivers, health care, and lunch-room staff all play a role in making the school experience safe and sound for students with diabetes.

The NDEP convened an expert panel comprised of health care professionals, federal agency staff, and representatives from key diabetes, pediatric medicine, and educational organizations to develop this comprehensive guide and to help disseminate it throughout the country.

We hope that schools will take advantage of the important information contained in this guide, share it with school staff, parents, and students, and use it to ensure that all students with diabetes are educated in a medically safe environment and have the same access to educational opportunities as their peers.

Sincerely,

James R. Gavin III, M.D., Ph.D.
Chair, National Diabetes Education Program
June 2003

Introduction

More than 17 million Americans have diabetes. In your work with children and youth in the school setting, it is likely that you already have, or will have, a student with diabetes in your care. Diabetes is one of the most common chronic diseases in school-aged children, affecting about 151,000 young people in the United States, or about 1 in every 400 to 500 young people under 20 years of age. Each year, more than 13,000 youths are diagnosed with type 1 diabetes. In addition, health care providers are finding more and more children and teens with type 2 diabetes, even though the disease is usually diagnosed in adults over age 40.

Diabetes is a serious chronic disease that impairs the body's ability to use food for energy. It is the sixth-leading cause of death by disease in the United States. Long-term complications include heart disease, stroke, blindness, kidney disease, and amputation of the foot or leg. Although there is no cure, the disease can be managed and complications 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 (sugar) levels throughout the school day and administering multiple doses of insulin therapy—now prescribed for most young people with diabetes. As a result, the school health team, which includes the school nurse, teachers, office personnel, and other school staff members, plays an important role in helping students manage their diabetes.

Effective diabetes management is crucial

- for the immediate safety of students with diabetes
- for the long-term health of students with diabetes
- to ensure that students with diabetes are ready to learn and to participate fully in school activities and
- to minimize the possibility that diabetes-related emergencies will disrupt classroom activities.

The school nurse, teachers, office personnel, and other school staff members play an important role in helping students manage their diabetes.

The purpose of this guide is to educate school personnel about diabetes and to share a set of practices that enable schools to ensure a safe learning environment for students with diabetes.

The purpose of this guide is to educate school personnel about diabetes and to share a set of practices that enable schools to ensure a safe learning environment for students with diabetes, particularly the student who uses insulin to control the disease (all students with type 1 and some with type 2 diabetes). **The team approach to school-based diabetes management presented in this guide builds on what schools already are doing for children with other chronic diseases.** Current practices and use of existing resources have been adapted for the student with diabetes.

The practices shared in this guide are not necessarily required by the federal laws enforced by the U.S. Department of Education 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 particular student. Additionally, the guide does not address state and local laws, as 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.

At its core, effective school-based diabetes management requires two things:

- **All school staff members who have responsibility for a student with diabetes should receive training that provides a basic understanding of the disease** and the student's needs, how to identify medical emergencies, and which school staff members to contact with questions in case of an emergency.
- **A small group of school staff members should receive training from a qualified health care professional such as a physician or a nurse in student-specific routine and emergency care** so that a staff member is always available for younger or less-experienced students who require assistance with their diabetes management (e.g., administering insulin, checking their blood glucose, or choosing an appropriate snack) and for all students with diabetes in case of an emergency. This group may be comprised of the school nurse and other school staff who are not health care professionals. The non-medical personnel are called "trained diabetes personnel" in this guide. Other terminology may be used in your school.

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

SECTION 1, Diabetes Primer for School Personnel, provides overview information about diabetes, describes how the disease is managed, and reviews the components for planning and implementing effective diabetes management in school. **The Primer should be copied and distributed to all school personnel who may be responsible for the safety of students with diabetes.** School nurses are the likely leaders in distributing this information and providing the background and education that other school personnel will need. This leadership may vary, however, from one school system to another because of state laws, staffing levels, and other considerations.

SECTION 2, Actions for School Personnel, Parents, and Students, lays out the roles and responsibilities of individual school personnel, parents, and students. **The pages in this section should be copied and distributed to school staff members, parents, and students with diabetes** so that they understand their respective roles in diabetes management.

SECTION 3, Tools for Effective Diabetes Management, contains two important tools for helping schools implement effective diabetes management, a sample Diabetes Medical Management Plan and a sample Quick Reference Emergency Plan for a student with diabetes. **The Quick Reference Emergency Plan should be distributed to all personnel who have responsibility for the student with diabetes** during the school day and during school-sponsored activities.

SECTION 4, School Responsibilities Under Law, was developed by the U.S. Department of Education. This section provides an overview of federal laws that address schools' responsibilities to 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.

This guide may be reproduced without permission and shared with all school personnel, parents, and students.

The **APPENDICES** contain additional resources and information for diabetes management in the school setting. The **Resources** section lists government, professional, and voluntary organizations that can be contacted for more information about diabetes and youth. The **Glossary** provides additional explanations of the medical and technical terms used in this guide. The **American Diabetes Association's position statement** on "Care for Children with Diabetes in the School and Day Care Setting" lays out the diabetes medical community's recommendations that are the basis for this guide.

School personnel are encouraged to **visit the National Diabetes Education Program's website, www.ndep.nih.gov**, to download a comprehensive online resource directory on Diabetes in Children and Adolescents.

www.ndep.nih.gov

To obtain additional copies of this guide and other diabetes information, please call the National Diabetes Education Program at 1-800-438-5383 or visit the program's website at www.ndep.nih.gov to download copies.

Section 1 DIABETES PRIMER

Copy and distribute this section to all school personnel who may be responsible for the safety of students with diabetes.

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Section 1 DIABETES PRIMER

FOR School Personnel

WHAT IS DIABETES?

Diabetes is a chronic disease in which the body does not make or properly use insulin, a hormone needed to convert sugar, starches, and other food into energy. People with diabetes have increased blood glucose (sugar) levels because they lack insulin, have insufficient insulin, or are resistant to insulin's effects. High levels of glucose build up in the blood and spill into the urine; as a result, the body loses its main source of fuel.

When insulin is no longer made, it must be obtained from another source—insulin shots or an insulin pump. When the body does not use insulin properly, oral medications may be taken instead of, or in addition to, insulin shots. **Neither insulin nor other medications, however, are cures for diabetes: they only help control the disease.**

Taking care of diabetes is important. If not treated, diabetes can lead to serious health problems. The disease can affect the blood vessels, eyes, kidneys, nerves, gums, and teeth, and it is the leading cause of adult blindness, lower limb amputations, and kidney failure. People with diabetes also have a higher risk of 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 that these problems can be greatly reduced or delayed by keeping blood glucose levels near normal.

Taking care of diabetes is important. If not treated, diabetes can lead to serious health problems.

WHAT ARE THE TYPES OF DIABETES?

There are two main types of diabetes: type 1 and type 2 are described below. A third type—gestational diabetes—occurs only during pregnancy and ends after delivery. Women who have had gestational diabetes, however, are more likely to develop type 2 diabetes later in life.

Type 1 Diabetes

Type 1 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 destroys them. Because the pancreas can no longer produce insulin, people with type 1 diabetes need to take insulin daily to live. Type 1 diabetes can occur at any age, but it occurs most often in children and young adults.

- **Symptoms.** The symptoms of type 1 diabetes usually develop over a short period of time. They include increased thirst and urination, constant hunger, weight loss, and blurred vision. Affected children also may feel very tired all the time. If not diagnosed and treated with insulin, the child with type 1 diabetes can lapse into a life-threatening condition known as diabetic ketoacidosis (KEY-toe-asi-DOE-sis), or DKA.
- **Risk factors.** Although scientists have made much progress in predicting who is at risk for type 1 diabetes, they do not yet know what triggers the immune system's attack on beta cells. They believe that type 1 diabetes is due to a combination of genetic and environmental factors. Researchers are working to identify these factors and to stop the autoimmune process that leads to type 1 diabetes.

Type 1 Diabetes INFO

Symptoms:
- ✔ Increased thirst and urination
- ✔ Constant hunger
- ✔ Weight loss
- ✔ Blurred vision
- ✔ Fatigue

Risk Factors:
- ✔ Genetics
- ✔ Environment

Type 2 Diabetes

INFO

Symptoms:

- ✔ Fatigue
- ✔ Increased thirst and urination
- ✔ Nausea
- ✔ Rapid weight loss
- ✔ Blurred vision
- ✔ Frequent infections
- ✔ Slow healing of wounds or sores

Risk Factors:

- ✔ Being overweight
- ✔ Having a family member who has type 2 diabetes
- ✔ Being African American, Hispanic/Latino American, American Indian, Asian American or Pacific Islander American

Type 2 Diabetes

The first step in the development of type 2 diabetes is often a problem with the body's response to insulin, or insulin resistance. For reasons scientists do not completely understand, the body cannot use its insulin very well. This means that the body needs increasing amounts of insulin to control blood glucose. The pancreas tries to make more insulin, but after several years, insulin production may drop off.

Type 2 diabetes used to be found mainly in overweight adults ages 40 or older. Now, as more children and adolescents in the United States become overweight and inactive, type 2 diabetes occurs more often in young people. To control their diabetes, children with type 2 diabetes may need to take oral medication, insulin, or both.

✚ **Symptoms.** Type 2 diabetes develops slowly in some children, but quickly in others. Symptoms may be similar to those of type 1 diabetes. A child or teen can feel very tired, thirsty, or nauseated and have to urinate often. Other symptoms include rapid weight loss, blurred vision, frequent infections, yeast infections, and slow healing of wounds or sores. High blood pressure may be a sign of insulin resistance. In addition, physical signs of insulin resistance, such as acanthosis nigricans (A-can-tho-sis NIG-reh-cans), may appear; here the skin around the neck or in the armpits or groin appears dark, thick, and velvety.

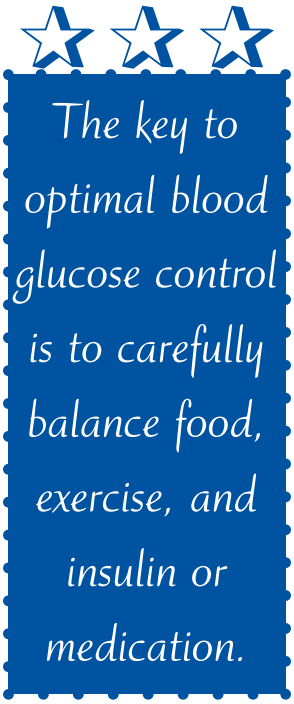
On the other hand, some children or adolescents with type 2 diabetes show no symptoms at all when they are diagnosed. For that reason, it is important for parents and caregivers to talk to their health care providers about screening children or teens at high risk for diabetes.

✚ **Risk factors.** Being overweight and having a family member who has type 2 diabetes are the key risk factors for type 2 diabetes. In addition, type 2 diabetes is more common in certain racial or ethnic groups, such as African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islander Americans. For children and teens at risk, health care providers can encourage, support, and educate the entire family to make lifestyle changes that may delay—or prevent—the onset of type 2 diabetes. Such changes may include reaching a healthy weight and then maintaining it and engaging in regular physical activity.

WHAT IS EFFECTIVE DIABETES MANAGEMENT?

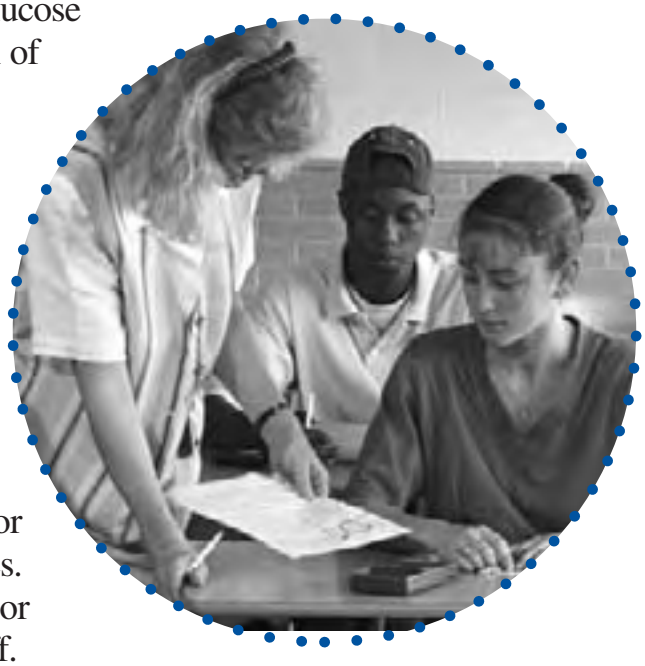
The goal of effective diabetes management is to control blood glucose levels by keeping them within a target range that is determined for each child. Optimal blood glucose control helps to promote normal growth and development and allows for optimal learning. Effective diabetes management is needed to prevent the immediate dangers of blood glucose levels that are too high or too low. As noted earlier, research has shown that maintaining blood glucose levels within the target range can prevent or delay the long-term complications of diabetes, such as heart attack, stroke, blindness, kidney failure, nerve disease, and amputations of the foot or leg.

The key to optimal blood glucose control is to carefully balance food, exercise, and insulin or medication. As a general rule, food makes blood glucose levels go up, and exercise and insulin make blood glucose levels go down. Several other factors, such as growth and puberty, mental stress, illness, or injury also can affect blood glucose levels.



With all of these factors coming into play, maintaining good blood glucose control is a constant juggling act—24 hours a day, 7 days a week.

Students with diabetes must check (or test) their blood glucose levels throughout the day by using a blood glucose meter. The meter gives a reading of the level of glucose in the blood at the time it is being checked. If blood glucose levels are too low (hypoglycemia) or too high (hyperglycemia), students can then take corrective action, such as eating, modifying their activity level, or administering insulin. **Low blood glucose levels, which can be life-threatening, present the greatest immediate danger to people with diabetes (see hypoglycemia, pages 17–19).**



Many students will be able to handle all or almost all of their diabetes care by themselves. Others, because of age, developmental level, or inexperience, will need help from school staff.

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 a large number of schools. Moreover, even when a nurse is assigned to a school full time, this staff member may not always be available during the school day, during extracurricular activities, or on field trips. Yet, because diabetes management is needed 24 hours a day, 7 days a week—and diabetes emergencies can happen at any time—school personnel should be prepared to provide diabetes care at school and at all school-sponsored activities in which a student with diabetes participates. In this case, the school nurse or another qualified health professional should be involved with training of appropriate staff and providing professional supervision and consultation regarding routine and emergency care of the student.

All students with diabetes will need help with emergency medical care.

Effective school-based diabetes management requires two things:

1. **All school staff members who have responsibility for students with diabetes should receive training that provides a basic understanding of the disease** and the students' needs, how to identify medical emergencies, and whom to contact in case of an emergency.
2. **A few school staff members should receive training from a qualified health care professional in student-specific routine and emergency diabetes care tasks** so that at least one staff member is always available for younger, less experienced students and for any student with diabetes in case of an emergency.

The diabetes medical community has found that nonmedical personnel (called "trained diabetes personnel" in this guide) can be trained and supervised to safely provide and assist with diabetes care tasks in the school setting, including blood glucose monitoring, insulin and glucagon administration, and urine ketone testing. These nonmedical school staff members should be trained and monitored by the school nurse or a qualified health professional. Assignment of diabetes care tasks must take into account state laws that may be relevant in determining what tasks may be performed by nonmedical personnel.

HOW CAN A SCHOOL PLAN AND IMPLEMENT EFFECTIVE DIABETES MANAGEMENT?

Collaboration, cooperation, and planning are key elements in developing and implementing successful diabetes management at school. **As is true for children with other chronic diseases, students with diabetes are more likely to succeed in school when students, parents, school nurses, principals, teachers, other school personnel, and the student's health care providers (or personal health care team) work together to ensure effective diabetes management.** Your school probably has similar plans and systems in place for children with other health considerations.

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. Team members could include the student, parents/guardian, the school nurse and other health personnel, administrators, the principal, the student's teacher(s) and guidance counselor, and other relevant staff.

The school health team works together to implement the Diabetes Medical Management Plan (see pages 49-52) developed by the student's personal health care team and family. The team decides who needs to receive appropriate medical information about the child, who will be the trained diabetes personnel and who will monitor them, and what tasks will be delegated. In addition, the school health team should be part of the group that develops and implements the student's Section 504 Plan, Individualized Education Program (IEP), or other education plan that addresses the student's developmental and educational needs so that diabetes can be managed safely and effectively in school.

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

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

These federal laws provide a framework for planning and implementing effective diabetes management in the school setting. School administrators and nursing personnel also

School Health TEAM

- ✔ Student with diabetes
- ✔ Parents/guardian
- ✔ School nurse
- ✔ Other school health personnel
- ✔ Principal
- ✔ Office staff
- ✔ Student's teacher(s)
- ✔ Guidance counselor
- ✔ Other relevant staff

should determine whether there are applicable state and local laws that should be factored into helping the student with diabetes (see pages 14–15 and Section 4 for additional information on these federal laws).

Written plans outlining each student's diabetes management help students, their families, school staff, and the student's health care providers know what is expected of them. These expectations should be laid out in writing in the following documents:

- *Diabetes Medical Management Plan,* developed by the student's personal health care team and family, contains the prescribed diabetes health care regimen, tailored for each student.
- *Quick Reference Emergency Plan,* based on the information provided in the student's Diabetes Medical Management Plan, describes how to recognize hypoglycemia and hyperglycemia and what to do as soon as signs or symptoms of these conditions are observed.
- *Education plans, such as the Section 504 Plan or Individualized Education Program (IEP),* explain what accommodations, education aids, and services are needed for each student with diabetes.
- *Other documents may be generated when a school nurse is involved,* such as a nursing care plan and instructions to staff (see page 36).

The Diabetes Medical Management Plan describes the diabetes regimen developed by the student's personal health care team and family.

Diabetes Medical Management Plan

The Diabetes Medical Management Plan describes the diabetes care regimen developed by the student's personal health care team and family and should be signed by the student's physician or other member of the health care team (see Section 3 for a sample plan). Although this guide uses the term "Diabetes Medical Management Plan," school districts may use other terms for this document. While this plan is not required by Section 504, the ADA, or the IDEA, the information in it can be useful in addressing the requirements of these federal laws.

Information in the Diabetes Medical Management Plan may include the following:

- Date of diagnosis
- Current health status
- Emergency contact information
- Student's willingness and ability to perform self-management tasks at school
- List of diabetes equipment and supplies
- Specific medical orders
  - ❑ Blood glucose monitoring
  - ❑ Insulin, glucagon, and other medications to be given at school
  - ❑ Meal and snack plan
  - ❑ Exercise requirements
  - ❑ Additional monitoring
- Typical signs, symptoms, and prescribed treatment for hypoglycemia
- Typical signs, symptoms, and prescribed treatment for hyperglycemia

The Diabetes Medical Management Plan should be reviewed and updated each school year or upon a change in the student's prescribed regimen, level of self-management, school circumstances (e.g., a change in schedule), or at the request of the student or parents/guardian. Information from this plan is used by the school nurse to develop the student's nursing care plan and may be incorporated into the 504, IEP, or other education plan.

The Quick Reference Emergency Plan summarizes how to recognize and treat hypoglycemia and hyperglycemia.

Quick Reference Emergency Plan

The Quick Reference Emergency Plan is based on the information provided in the student's Diabetes Medical Management Plan; the school nurse will usually coordinate its development. The plan summarizes how to recognize and treat hypoglycemia and hyperglycemia and should be distributed to all personnel who have responsibility for students with diabetes (see Section 3 for a sample plan). Although this guide uses "Quick Reference Emergency Plan," school districts might use other names.

Education Plans

The school health team, including the student and parents/guardian, must agree on how the Diabetes Medical Management Plan will be implemented and what medical accommodations, educational aids, and services may be needed for the student. This information might be included in a Section 504 Plan, an IEP, or other education plan.

A "504 Plan" is the commonly used term for a plan of services developed under Section 504 of the Rehabilitation Act. An IEP is required for students who receive special education and related services under the Individuals with Disabilities Education Act (IDEA). The information in the Diabetes Medical Management Plan can be used in developing either a Section 504 Plan or an IEP, but should not be a substitute for these plans.

The 504 Plan, IEP, or other education plan lays out what medical accommodations, educational aids, and services the student may need.

Each student with diabetes has different needs, but the education-related plans developed for such students are likely to address the following common elements:

- Where and when blood glucose monitoring and treatment will take place
- Identity of trained diabetes personnel who are trained to conduct blood glucose checking, insulin and glucagon administration, and treatment of hypoglycemia and hyperglycemia
- Location of the student's diabetes management supplies
- Free access to the restroom and water fountain
- 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 for academic exams if the student is experiencing hypoglycemia or hyperglycemia
- Permission for absences, without penalty, for doctors' appointments and diabetes-related illness
- Maintenance of confidentiality and the student's right to privacy

It is strongly recommended that this information be agreed upon before each school year begins (or upon diagnosis of diabetes) and that it be written down and signed by a representative of the school and the parents/guardian. This assures that school staff members, parents, and students know their responsibilities. Parents must be notified in a timely manner of any proposed changes in the provision of services and be included in related discussions.

This approach to planning and implementing effective diabetes management in school can promote a better understanding of schools' responsibilities and can prepare staff members to act in the best interest of students with diabetes.

Elements of Effective DIABETES MANAGEMENT

- ✔ Monitoring blood glucose
- ✔ Understanding hypoglycemia
- ✔ Understanding hyperglycemia
- ✔ Following an individualized meal plan
- ✔ Getting regular physical activity
- ✔ Administering insulin
- ✔ Planning for special events
- ✔ Planning for disasters and emergencies
- ✔ Dealing with emotional and social issues

WHAT ARE THE ELEMENTS OF EFFECTIVE DIABETES MANAGEMENT IN SCHOOL?

Diabetes management means monitoring or checking blood glucose levels throughout the day, following an individualized meal plan, getting regular physical activity, and administering insulin and/or medications to help keep blood glucose levels in the target range and to help prevent the onset of hypoglycemia or hyperglycemia. Additional elements of diabetes management in school include planning for events outside the usual school day, planning for appropriate disposal of materials that come in contact with blood, and dealing with the emotional and social aspects of living with diabetes.

Monitoring Blood Glucose

One of the most important parts of diabetes management is regular monitoring or checking of blood glucose levels. Monitoring involves pricking the skin with a lancet at the fingertip, forearm, or other test site to obtain a drop of blood and placing the drop on a special test strip that is inserted in a glucose meter. The meter gives the current blood glucose level.

Physicians generally recommend that students check their blood glucose during the school day, usually before eating snacks or lunch, before physical activity, or when there are symptoms of hypoglycemia or hyperglycemia. In young children, symptoms may be subtle; blood glucose should be checked whenever symptoms are suspected. Many students can check their own

blood glucose level; others will need supervision; and others will need to have this task performed by a school nurse or trained diabetes personnel.

It is extremely important for students to be able to check their blood glucose levels and respond to levels that are too high or too low as quickly as possible. Accordingly, if recommended by the student's physician, **it is medically preferable to permit students to check their blood glucose level and respond to the results in the classroom, at any other campus location, or at any school activity.** Taking immediate action is important so that the symptoms don't get worse and the student doesn't miss time in the classroom.

Blood glucose monitoring 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 family and the school should agree on the plan, which should be consistent with standard Universal Precautions and local waste-disposal laws. Disposal may be in a container kept at school or in the student's personal container, a heavy-duty plastic or metal container with a tight-fitting lid. Check with the student's personal health care team about health and safety requirements in your area.

Students Usually Check Their BLOOD GLUCOSE

- ✔ Before eating snacks or meals
- ✔ Before physical activity
- ✔ When they have symptoms of high or low blood glucose

Advantages of Checking Blood Glucose Levels Any Time and Any Place

- The student can achieve better blood glucose control to prevent long-term complications of high blood glucose and acute complications of high and low blood glucose.
- It is safer for students because less time is lost between recognizing symptoms, confirming low blood glucose, and obtaining treatment with a fast-acting sugar source followed by a snack or meal.
- The student gains independence in diabetes management when the blood glucose meter is easily accessible and checks can be conducted as needed.
- The student experiences less stigma as blood glucose monitoring loses its mystery when handled as a regular occurrence.
- The student spends less time out of class.

Understanding Hypoglycemia (Low Blood Glucose)

HYPOglycemia means LOW blood glucose.

Hypoglycemia, also called "low blood glucose" or "low blood sugar," is one of the most frequent complications of diabetes and can happen very suddenly. Hypoglycemia occurs when a student's blood glucose level falls too low, usually as a result of administering too much insulin, skipping or delaying meals or snacks, not eating enough food as prescribed in the meal plan, exercising too long or too intensely, or a combination of two or more of these factors. It is more likely to occur before lunch, at the end of the school day, or during or after physical education classes.

Hypoglycemia, which often cannot be prevented, is the greatest immediate danger to students with diabetes.

Hypoglycemia usually can be treated easily and effectively. If it is not treated promptly, however, hypoglycemia can lead to unconsciousness and convulsions and can be life threatening. Early recognition of its symptoms and prompt treatment, in accordance with the student's Diabetes Medical Management Plan, are necessary for preventing severe symptoms that may place the student in danger. This information, contained in the Quick Reference Emergency Plan, should be provided to all school personnel who have responsibility for the student with diabetes (see sample plan on page 53).

Hypoglycemia is not always completely preventable, and not all students, especially young children, will recognize its symptoms with every episode. Therefore, school personnel should be familiar with the symptoms and treatment so that an urgent problem can be handled appropriately.

Hypoglycemia can impair thinking abilities and sometimes can be mistaken for misbehavior. If a student has a sudden change in behavior, becomes lethargic, combative, or unconscious, or is having a seizure or convulsion, presume that the student has hypoglycemia. Treat the situation as a hypoglycemic emergency and check the student's blood glucose level immediately. If a blood glucose meter

Hypoglycemia occurs when a student's blood glucose level falls too low, usually as a result of

- Administering too much insulin
- Skipping or delaying meals or snacks
- Not eating enough food as prescribed in the meal plan
- Exercising longer and more intensely
- Or a combination of these factors

is not available in the immediate area, or if the blood glucose level is otherwise unknown, treat the student for hypoglycemia.

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

As soon as symptoms of hypoglycemia are observed, give the student a quick-acting sugar product equivalent to 15 grams of carbohydrate, as specified in the Quick Reference Emergency Plan. This may include: 3 or 4 glucose tablets, 3 teaspoons (or three-fourths of a tube) of glucose gel, 4 ounces of juice, or 6 ounces (half a can) of non-diet soda. Recheck the student's blood glucose level 10 to 15 minutes after treatment. Repeat treatment if the blood glucose level still falls below the student's target range.

How to Treat Hypoglycemia

Mild/Moderate Symptoms:

As soon as symptoms are observed, give the student a quick-acting sugar product, such as:

- 3 or 4 glucose tablets
- 3 teaspoons of glucose gel
- 4 ounces of juice
- 6 ounces of non-diet soda

Severe Symptoms:

- Position the student on his/her side
- Contact the school nurse or trained diabetes personnel
- Administer glucagon, as prescribed
- Call 911
- Call student's parents

Symptoms of hypoglycemia, which are different for each student and may vary from episode to episode, can include:

Mild/Moderate Symptoms

- shaky
- sweaty
- hungry
- pale
- headache
- blurry vision
- sleepy
- dizzy
- confused
- disoriented
- uncoordinated
- irritable or nervous
- changed personality
- inability to concentrate
- weak
- lethargic
- changed behavior

Severe Symptoms

- inability to swallow
- having a seizure or convulsions
- unconscious

Severe hypoglycemia is rare at school and generally can be prevented with prompt treatment when the early signs of low blood glucose are recognized. When hypoglycemia is severe, the school nurse or trained diabetes personnel must respond immediately. Symptoms may include inability to swallow, unconsciousness, unresponsiveness, seizure activity, convulsions, or jerking movements. At this point, never attempt to give the student food or a drink or to put anything in the mouth because it could cause choking.

If students become unconscious or experience convulsions or seizures, position them on their side to prevent choking. Immediately contact the school nurse or trained diabetes personnel,

who will administer an injection of glucagon (see next page), if indicated in the student's Diabetes Medical Management Plan. While the glucagon is being administered, another school staff member should call for emergency medical assistance and then notify the parents/guardian. If glucagon is not authorized, staff should call 911 immediately.

Glucagon is a hormone that raises blood glucose levels by causing the release of glycogen (a form of stored carbohydrate) from the liver. It is administered when the student's blood glucose level gets so low that the student passes out, experiences seizures, or cannot swallow. Although it may cause nausea and vomiting when the student regains consciousness, glucagon can be a life-saving treatment that cannot harm a student.

The student's parents/guardian should supply the school with a glucagon emergency kit. This kit usually contains a bottle (vial) of glucagon in powder form and a pre-filled syringe with special liquid; the two are mixed just before a glucagon injection is given. Glucagon may be stored at room temperature. The school nurse and trained diabetes personnel must have ready access to the glucagon emergency kit at all times.

Understanding Hyperglycemia (High Blood Glucose)

HYPERglycemia means HIGH blood glucose.

Hyperglycemia, also called "high blood glucose," is a serious manifestation of diabetes that may be caused by too little insulin, illness, infection, injury, stress or emotional upset, ingestion of food that has not been covered by the appropriate amount of insulin, or decreased exercise or activity. High blood glucose symptoms include increased thirst, frequent urination, nausea, blurry vision, and fatigue. Over a long period of time, even moderately high blood glucose levels can lead to serious complications, such as heart disease, blindness, kidney failure, and amputations. In the short term, hyperglycemia can impair cognitive abilities and adversely affect academic performance.

Hyperglycemia does not usually result in acute problems. If, however, the student fails to take insulin, if a pump malfunctions

Hyperglycemia INFO

Symptoms:

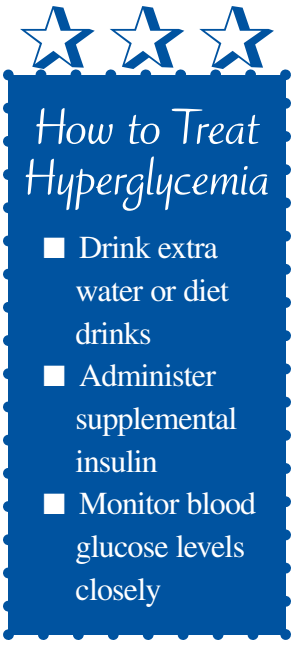
- Increased thirst
- Frequent urination
- Nausea
- Blurry vision
- Fatigue

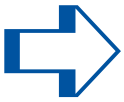
and delivers less insulin, or if either physical or emotional stress causes the insulin not to work effectively, there will be a breakdown of fat, causing ketones to form (see below).

At first, ketones will be cleared by the kidneys into the urine, but if there are more than the kidneys can handle, they will build up in the blood and may result in diabetic ketoacidosis (DKA). This complication will cause a fruity breath odor, nausea, vomiting, stomach pain, and, if untreated, deep breathing and increasing sleepiness. Students who use insulin pumps can go into DKA within hours if their pumps stop delivering insulin appropriately.

DKA can be prevented if the student's urine is checked for ketones during times of illness, especially if vomiting occurs, or whenever the blood glucose level exceeds the target range provided in the Diabetes Medical Management Plan. The test involves dipping a special strip into the urine and comparing the resulting color to a color chart.

Treatment of hyperglycemia may involve drinking extra water or diet drinks or administering supplemental insulin in accordance with the Diabetes Medical Management Plan.





Free and unrestricted access to liquids and the restroom must be provided, as high blood glucose levels increase urination and may lead to dehydration if the student cannot replace the fluids.

The student's blood glucose level should be monitored closely until it returns to the target range, as outlined in the Diabetes Medical Management Plan. If treatment does not lower blood glucose levels and clear the ketones, if vomiting occurs, or if the student is lethargic or experiences breathing difficulties, call the parents/guardian or call for medical assistance if they cannot be reached. Treatment guidelines for ketones and when to call parents should be listed in the student's Diabetes Medical Management Plan. Information about the symptoms and treatment of hyperglycemia, contained in the Quick Reference Emergency Plan, should be provided to all school personnel who have responsibility for the student with diabetes (see sample plan on page 54).

Administering Insulin

Students with type 1 diabetes, and some students with type 2 diabetes, require insulin to be given at regular times each day. Some students may need additional or corrective dosages of insulin to treat hyperglycemia or to cover a rise in blood glucose levels. The Diabetes Medical Management Plan specifies the dosage, delivery system, and schedule for insulin administration, which will differ for each student. The nursing care plan, 504, IEP, or other education plan, which are based on the Diabetes Medical Management Plan, specify who will administer prescribed insulin and under what circumstances.

Today, new types of insulin and new delivery systems help keep blood glucose levels within the target range. These options may require closer monitoring and possibly more 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.

Peak time is the time during which insulin is at its maximum strength in terms of lowering blood glucose.

Duration is the number of hours insulin continues to lower blood glucose levels.

There are several types of insulin that are used in combination to treat people with diabetes. These different types of insulin have been manufactured either to have immediate (rapid-acting or short-acting insulin), intermediate, or long (basal insulin) onset of action and duration of action in the body. A coordinated combination of insulins is used to allow for adequate treatment of diabetes at meals, snacks, during periods of physical activity, and through the night.

Opened vials of insulin may be left at room temperature for 30 days after opening, but will keep for 3 months if refrigerated. Unopened vials should be stored in the refrigerator and are good until the expiration date.

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

Insulin syringes available today make it easier to draw up the proper dosage, and shorter, smaller needles make injections easier and relatively painless.

Insulin has three characteristics:

- Onset
- Peak time
- Duration

An insulin pen looks like a fountain pen. The pen holds a cartridge of insulin, and a needle is screwed onto its tip just before use. Insulin pens are convenient and most appropriate when children need a single type of insulin.

An insulin pump is a computerized device that looks like a pager and is usually worn on the student's waistband or belt. The pump is programmed to deliver small, steady doses of insulin throughout the day; additional doses are given to cover food or high blood glucose levels. The pump holds a reservoir of insulin that is attached to a system of tubing called an infusion set. Most infusion sets are started with a guide needle, then the plastic cannula (a tiny, flexible plastic tube) is left in place, taped with dressing, and the needle is removed. The cannula is usually changed every 2 or 3 days or when blood glucose levels remain above target range. More students are opting for insulin pump therapy as a means to keep blood glucose levels in better control.

The three most common ways to deliver insulin:

- Insulin syringe
- Insulin pen
- Insulin pump

Some students who need insulin during the school day are able to administer it on their own; others will need supervision; and others will need someone to administer the insulin for them. The school nurse and/or trained diabetes personnel should provide this help in accordance with the Diabetes Medical Management Plan and the nursing care plan. School personnel who are responsible for the student's care should be knowledgeable about the use and operation of that student's insulin delivery system. Information about insulin administration should appear in the student's Diabetes Medical Management Plan, nursing care plan, and education plan (504, IEP, or other education plan).

In the event a school nurse is not available to administer insulin, a nurse or another qualified health care professional should teach, monitor, and supervise trained diabetes personnel to administer insulin. Further, when the school nurse is not available to administer insulin and insulin is administered by other trained diabetes personnel, additional safety precautions may be taken, such as verification of the dose by two trained diabetes personnel before administration.

Following an Individualized Meal Plan

The nutritional needs of a student with diabetes do not differ from the needs of a student without diabetes. Both should eat a variety of foods to maintain normal growth and development. The major difference is that the timing, amount, and content of the food that the student with diabetes eats are carefully matched to the action of the insulin.

The student's meal plan is designed to balance nutritional needs with the insulin regimen and physical activity level. **There are usually no forbidden foods for people with diabetes.** The family and personal health care team create an individualized meal plan based upon carbohydrate counting or an exchange system.

Carbohydrate counting involves calculating the number of grams of carbohydrate or choices of carbohydrate the student eats. This information, which can be obtained from nutrition information on food labels, is used to determine the amount of insulin the student needs to control blood glucose for any given meal or snack.

The **exchange system** groups foods in six different lists, each with a set nutritional value. A meal plan is prepared that recommends several exchanges or servings from each food group for each meal and snack. The exchange list ensures that the meal plan is consistent in portion size and nutrient content while offering a wide variety of foods from each group. Students using this approach consume a prescribed number of exchanges at meal and snack times.

The exchange lists include the following food groups:

- Bread/starch
- Fruit
- Milk
- Vegetables
- Meat/protein foods
- Fats

The student's meal plan is designed to balance the student's nutritional needs with his or her insulin routine and physical activity level.

With some insulin regimens, it is important to maintain consistency in the timing and content of meals and snacks. The student should eat lunch at the same time each day. Snacks are often necessary for a child with diabetes and must be eaten to balance the peak times of insulin action. **A missed or delayed snack could result in hypoglycemia.** The student also must have immediate access to a quick-acting form of glucose, such as juice, glucose

tablets or gel, or regular soda to treat hypoglycemia. The student's nursing care plan or education plan (504, IEP, or other education plan) should show the timing of meals and snacks and an alternative plan for unusual or unforeseen circumstances.

Getting Regular Physical Activity

Exercise and physical activity are critical parts of diabetes management. Everyone can benefit from regular exercise, but it is even more important for a student with diabetes. In addition to maintaining cardiovascular fitness and controlling weight, physical activity can help to lower blood glucose levels.

Students with diabetes should participate fully in physical education classes and team sports. To maintain blood glucose levels within their target ranges during extra physical activity, students will make adjustments in their insulin and food intake. To prevent hypoglycemia, they also may need to check their blood glucose levels more frequently while engaging in physical activity.

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

Physical education instructors and sports coaches must be able to recognize and assist with the treatment of hypoglycemia. A quick-acting source of glucose and the student's glucose meter should always be available, along with plenty of water.

Students using pumps may disconnect from the pump for sports activities. If they keep the pump on, they may set a temporary, reduced rate of insulin while they are playing. School personnel should provide the student with a safe location for storing the pump when the student does not wear it. The student's Diabetes Medical Management Plan, nursing care plan, 504 Plan, IEP, or other education plan should include specific instructions.

Planning for Special Events, Field Trips, and Extracurricular Activities

With proper planning, students with diabetes can participate fully in all school-related 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. With proper planning for coverage by trained diabetes personnel and possible adjustments to their insulin regimen and meal plan, students with diabetes can participate fully in all school-related activities.

While there are usually no forbidden foods in a meal plan for children or teens with diabetes, school parties often include foods high in carbohydrates and fats. Providing more nutritious snacks will be healthier for all students and encourage good eating habits. The parents/guardian should decide whether the student with diabetes should be given the same food as other students or food the parents provide. Parents should be given advance notice of parties to incorporate special foods in the meal plan or to adjust the insulin regimen.

Students often view a field trip as one of the most interesting and exciting activities of the school year, and students with diabetes must be allowed to have these school-related experiences. Although it is not unusual to invite parents to chaperone field trips, parental attendance is **not** a prerequisite for participation by the student with diabetes. **Trained diabetes personnel should accompany the student with diabetes** and ensure that all the student's supplies are brought along with the student and that there are snacks and supplies to treat hypoglycemia.

The plan for coverage and care during extracurricular activities sponsored by the school that take place outside of school hours should be carefully set out in the student's 504, IEP, or other education plan. As with field trips, trained diabetes personnel must be available at these activities.

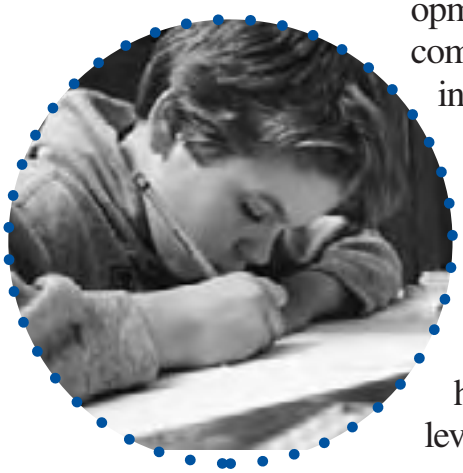
Planning for Disasters and Emergencies

To be prepared in the event of natural disasters or emergencies when students need to stay at school, the parents/guardian must provide an emergency supply kit. This kit should contain enough supplies for 72 hours, including the following items as appropriate:

- Blood glucose meter, testing strips, lancets, and batteries for the meter
- Urine ketone strips
- Insulin and supplies
- Insulin pump and supplies, including syringes
- Other medications
- Antiseptic wipes or wet wipes
- Fast-acting source of glucose
- Carbohydrate-containing snacks
- Hypoglycemia food supplies (enough for 3 episodes): quick-acting sugar and carbohydrate/protein snacks
- Glucagon emergency kit

Dealing with Emotional and Social Issues

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



For the most part, children 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 angry or resentful about their disease. Sometimes, children and teens feel pressured to please caretakers and yet cannot consistently comply with their requests. To appease concerned parents or health care providers, some children report fictitious glucose levels or do not take all their insulin.

Children react differently to having diabetes. They may be accepting, resentful, open to discussing it, or attempt to hide it. Often, the same child will experience all of 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.

Diabetes can be a focal point for conflict within families. One of the biggest tasks for children and adolescents is to become increasingly independent from their parents, but diabetes may compromise independence because parents are concerned about their children's ability to perform self-care and take responsibility for it. Parents, who are ultimately responsible for their children's well-being, may be reluctant to allow normal independence in children or teens who have not been able to take care of themselves properly. This parental concern can lead to increasing struggles with dependence, oppositional behavior, and rebellion. Some adolescent girls, for example, may rebel by not following their insulin regimen because they want to lose weight or avoid gaining weight.

Increasingly, depression is being recognized as quite common among children and teens generally, and even more so in those with diabetes. Health care providers and school personnel must be aware of emotional and behavioral issues and refer students with diabetes and their families for counseling and support as needed.

Diabetes care tasks can set children and teens apart from their peers and make them feel resentful or angry about their disease.

WHY IS DIABETES SELF-MANAGEMENT IMPORTANT?

While it is very important to provide students with assistance and supervision of their diabetes care as needed, it is equally important to enable students to take on the responsibility of learning diabetes self-management and control. The age for transfer of responsibility from caregiver to child varies from child to child and from task to task because children develop and mature at different rates. Students' ability to participate in self-care also depends upon their willingness to do so. As students are ready, they can assume more responsibility for their care.

Students' competence and capability for performing diabetes-related tasks are determined by the school health care team and the parents/guardian. **Diabetes care depends upon self-management.** Ultimately, each person with diabetes becomes responsible for all aspects of self-care, including blood glucose monitoring and insulin administration. Regardless of their level of self-management, however, all students with diabetes may require assistance when blood glucose levels are out of the target range.

WHY IS DIABETES MANAGEMENT TRAINING ESSENTIAL FOR SCHOOL PERSONNEL?

Diabetes management training teaches school nurses and staff members how to provide necessary care for students with diabetes during the school day and school-sponsored extracurricular activities. Training should occur before the beginning of the school year, when a student is diagnosed with diabetes, when a student with diabetes is enrolled in the school, or when appropriate. There also should be regular refresher sessions.

There are two levels of training appropriate for school personnel. The first level of training is for school staff members who have primary responsibility for students with diabetes (e.g., teachers and coaches), but who don't perform diabetes care tasks such as blood glucose monitoring or insulin or glucagon administration. This training should include:

- General overview of diabetes and typical health care needs of a student with diabetes
- Recognition of hypoglycemia and hyperglycemia
- Identity of school nurses and/or trained diabetes personnel and how to contact them for help

The second level of training is for school personnel who will perform routine and emergency care (school nurses and trained diabetes personnel) and should include the following content based on current standards of care for children and youth with diabetes recommended by the American Diabetes Association:

- General overview of typical health care needs of a student with diabetes and how these needs are addressed in the student's written care plans
- Explanation/overview of type 1 and type 2 diabetes
- The effect of balancing insulin, food, and exercise upon a student's blood glucose levels
- Procedures for routine care of individual students, including blood glucose monitoring, insulin administration, urine ketone testing, and recording results
- Signs and symptoms of hypoglycemia and hyperglycemia and the short- and long-term risks of these conditions
- Treatment of hypoglycemia and hyperglycemia
- Glucagon administration
- Managing nutrition and exercise in the school setting
- Tools, supplies, and equipment required for diabetes care and their storage
- Legal rights and responsibilities of schools and parents/guardian

More information on diabetes can be found in the Resource List beginning on page 61.

WHERE CAN I LEARN MORE ABOUT DIABETES?

The Resource List beginning on page 61 includes a list of the major organizations (and their websites) that offer related information, resources, and training.

Section 2 ACTIONS

Actions for the School District Administrator *Page 33*

Actions for the Principal, School Administrator, or Designee *Page 34*

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Actions for the Teacher *Page 40*

Actions for the Coach and Physical Education Instructor *Page 41*

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Actions for the Student with Diabetes *Page 46*

Section 2 ACTIONS

FOR School Personnel, Parents, and Students

The health, safety, and educational progress of a student with diabetes depend on cooperation and collaboration between the family and school staff members. Working together, they form the school health team that implements the provisions of the student's written plans and provides the necessary assistance in the school environment (see Diabetes Primer, page 11).

When available, the school nurse is the most appropriate person to plan diabetes care in the school and oversee implementation of the student's written plans. When a school nurse is not available, the diabetes medical community has found that nonmedical personnel ("trained diabetes personnel") can be trained and supervised to safely provide and assist with diabetes care tasks in the school setting, including blood glucose monitoring, insulin and glucagon administration, and urine ketone testing. Assignment of diabetes care tasks must take into account state and local laws addressing what tasks may be performed by nonmedical school personnel.

The responsibilities of each key school staff member are described in the pages that follow, along with those of the parents/guardian and the student. One person may fill more than one role. For example, a teacher or a coach also may be one of the trained diabetes personnel. The recommended actions on the following pages do not represent legal checklists of what people must do to comply with relevant federal, state, and local laws. Rather, they are steps that school personnel, parents, and students should take to ensure effective diabetes management.

The following pages should be copied and distributed to everyone involved along with the student's Quick Reference Emergency Plan (see pages 53–54). All substitute and appropriate after-school personnel should receive information relevant to their position.

Please copy and distribute to the School District Administrator.

ACTIONS for the School District Administrator

(Superintendent, 504 coordinator, or other school administrator responsible for coordinating student services)

- ❑ **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, including delegation of responsibilities, required staff training, medication administration policy, and blood glucose monitoring. Obtain input from local or regional experts.
- ❑ **Support implementation of district policy.** Support school district health professionals and other school administrators regarding: 1) development, coordination, and implementation of diabetes management training; 2) ongoing quality control and improvement of these training programs; and 3) development and implementation of a program to monitor the performance of those who receive training.
- ❑ **Arrange for training of school personnel.** Arrange for a health care professional, such as the school nurse or a diabetes-trained public health nurse, to provide training and ongoing monitoring for trained diabetes personnel.
- ❑ **Allocate sufficient resources** to manage students with diabetes.
- ❑ **Monitor schools** attended by students with diabetes for compliance with district policy.
- ❑ **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.
- ❑ **Respect the student's confidentiality and right to privacy.**
- ❑ **Learn about diabetes** by reviewing the materials contained in this guide.
- ❑ **Understand and implement 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 Section 4).

*The American Diabetes Association (ADA) publishes "Standards of Care for Diabetes Management" annually in the journal *Diabetes Care*. These standards also appear on the association's website, www.diabetes.org. See the ADA's position statement on "Care of Children with Diabetes in the School and Day Care Setting" on pages 73–77.

Please copy and distribute to the Principal, School Administrator, or Designee.

ACTIONS for the Principal, School Administrator, or Designee

- ❑ **Participate in developing and implementing school policy** related to diabetes management at school and implement school district policy.
- ❑ **Allocate sufficient resources to manage students with diabetes.**
- ❑ **Develop and implement a system to inform school health services** of the pending enrollment of a student with diabetes.
- ❑ **Promote a supportive learning environment** for students with diabetes. Treat these students the same as other students except to respond to medical needs.
- ❑ **Meet annually with the school health team.** Arrange and attend a meeting of the school health team members (student, family, school nurse, 504/IEP coordinator, teacher(s), and other staff members who have primary responsibility for the student) before the school year starts, or when the child is newly diagnosed, to discuss medical accommodations and educational aids and related services the student needs.
- ❑ **Identify all staff members** who have responsibility for the student with diabetes.
- ❑ **Arrange for diabetes management training** for the school nurse, trained diabetes personnel, and other staff members with responsibility for students with diabetes. Inform staff members about how and when they should contact trained diabetes personnel. Ensure that trained diabetes personnel are available at all times when the student is on or off campus for school-sponsored activities and events.
- ❑ **Alert all school-related staff members** who teach or supervise a student with diabetes. Ensure that they, including the bus driver, are familiar with the accommodations and emergency procedures contained in the student's Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan.
- ❑ **Alert all substitute personnel.** Ensure that they are aware of the needs and emergency procedures for students with diabetes.
- ❑ **Work with the school health team to implement the student's written plans,** including the Diabetes Medical Management Plan, and monitor compliance.

Continued on next page

ACTIONS for the Principal, School Administrator, or Designee *Continued*

- ❑ **Implement school policy on availability of trained staff.** The school nurse or at least one of the school's trained diabetes personnel must be available when the student with diabetes is on campus or is a participant in off-campus school-sponsored activities and events.
- ❑ **Respect the student's confidentiality and right to privacy.**
- ❑ **Help develop and implement on-campus as well as off-campus emergency protocols.**
- ❑ **Include diabetes awareness as part of health or cultural education.**
- ❑ **Support and facilitate** ongoing communication between parents/guardian of students with diabetes and school staff.
- ❑ **Learn about diabetes** by reviewing the materials contained in this guide.
- ❑ **Be able to recognize and respond to signs and symptoms of hypoglycemia and hyperglycemia** in accordance with the student's Quick Reference Emergency Plan, which includes knowing when and how to contact the school nurse or trained diabetes personnel.
- ❑ **Understand 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 procedures for implementation (see Section 4).

Please copy and distribute to the School Nurse.

ACTIONS for the School Nurse

When a school nurse is assigned to the school (or school district), that person is the key school staff member who coordinates provision of health care services for a student with diabetes at school and at school-related activities. When notified that a student with diabetes is enrolled in the school, annually or more often as necessary, the school nurse will:

- ❑ **Obtain and review the student's current Diabetes Medical Management Plan** from the personal health care provider and pertinent information from the family.
- ❑ **Facilitate the initial school health team meeting** to discuss implementing the student's Diabetes Medical Management Plan and participate in the development and implementation of the student's 504 Plan, IEP, or other education plan. Monitor compliance with these 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.
- ❑ **Conduct a nursing assessment of the student and develop a nursing care plan.** Many school nurses already have systems set up to develop nursing care plans for students with chronic diseases. The plan for students with diabetes is based on assessment of the student, input from the parents/guardian and the student, and the Diabetes Medical Management Plan. For example, the nursing care plan will identify specific functional problems, establish a goal to overcome each problem, and delineate tasks or interventions to help reach the goals.
- ❑ **Conduct ongoing, periodic assessments of students with diabetes and update the nursing care plans.**
- ❑ **Coordinate development of the student's Quick Reference Emergency Plan** and provide copies to staff members who have responsibility for the student throughout the school day (e.g., teachers, coach, PE instructor, lunchroom staff, and bus driver).
- ❑ **Obtain materials and medical supplies necessary for diabetes care tasks** from the parents/guardian and arrange a system for notifying the student or parents/guardian when supplies need to be replenished.
- ❑ **Plan and implement diabetes management training** for the trained diabetes personnel and any other staff members with responsibility for the student with diabetes who require such training. Ensure that all those mentioned in the 504 Plan, IEP, or other education plan know their roles in carrying out the plan, how their roles relate to each other, and when and where to seek help.
- ❑ **Participate in diabetes management training** provided by health care professionals with expertise in diabetes and attend other continuing education offerings to attain and/or maintain knowledge about current standards of care for children with diabetes.

Continued on next page

ACTIONS for the School Nurse *Continued*

- ❑ **Review the information about diabetes in this guide.**
- ❑ **Distribute the Diabetes Primer in this guide to all school personnel** who have responsibility for students with diabetes.
- ❑ **Train (or oversee training of), assess competence, and monitor trained diabetes personnel** in carrying out the health care procedures defined in the Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan.
- ❑ **Perform routine and emergency diabetes care tasks,** including blood glucose monitoring, urine ketone testing, insulin administration, and glucagon administration.
- ❑ **Practice universal precautions and infection control procedures** during all student encounters.
- ❑ **Maintain accurate documentation** of contacts with students and family members; communications with the student's health care provider; any direct care given, including medication administration; and the training and monitoring of trained diabetes personnel.
- ❑ **Collaborate with other co-workers** (e.g., food service) and agencies (e.g., outside nursing agencies, school bus transportation services) as necessary to provide health care services.
- ❑ **With parental permission, act as liaison between the school and the student's health care provider** regarding the student's self-management at school.
- ❑ **Communicate to parents/guardian any concerns about the student's diabetes management or health,** such as acute hypoglycemia episodes, hyperglycemia, general attitude, and emotional issues.
- ❑ **Promote and encourage independence and self-care** consistent with the student's ability, skill, maturity, and developmental level.
- ❑ **Respect the student's confidentiality and right to privacy.**
- ❑ **Act as an advocate** for students to help them meet their diabetes health care needs.
- ❑ **Provide education and act as a resource on managing diabetes** at school to the student, family, and school staff. Establish and maintain an up-to-date resource file of pamphlets, brochures, and other publications for school personnel.
- ❑ **Assist the classroom teacher** with developing a plan for substitute teachers.
- ❑ **Assist the PE instructor** with managing the student's exercise program at school.
- ❑ **Be knowledgeable about federal, state, and local laws and regulations** that pertain to managing diabetes at school (see Section 4).

Please copy and distribute to Trained Diabetes Personnel.

ACTIONS for Trained Diabetes Personnel

With proper supervision and training, and where state laws do not prohibit it, nonmedical personnel can help students manage their diabetes safely at school. This guide uses the term "trained diabetes personnel," but some schools use other names. Trained diabetes personnel may include school staff members, health aides, and licensed practical nurses. Depending on the size of the school, at least two people should be trained to perform diabetes care tasks and be trained diabetes personnel.

If a school has a nurse, the nurse takes the lead in providing diabetes care. Either the school nurse or at least one of the trained diabetes personnel should be on site throughout the school day and during school-sponsored activities that take place before or after school in which a student with diabetes participates.

- ❑ **Understand the student's Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan.**
- ❑ **Understand the student's Quick Reference Emergency Plan.**
- ❑ **Attend the student's school health team meetings** to gain understanding of the overall goal of care.
- ❑ **Participate in diabetes management training.**
- ❑ **Learn about diabetes** by reviewing materials contained in this guide.
- ❑ **Perform routine and emergency diabetes care tasks,** including blood glucose monitoring, urine ketone testing, insulin administration, and glucagon administration after receiving training under the direction of the school nurse or other assigned health care professional.
- ❑ **Practice universal precautions and infection control procedures** in all student encounters.
- ❑ **Participate in planned evaluations of care.**
- ❑ **Document care provided** according to standards and requirements outlined by school policy.
- ❑ **Observe and record student health and behavior,** noting any changes over time.
- ❑ **Communicate directly and regularly with the school nurse or the supervising health care professional.**
- ❑ **Consult with appropriate members of the student's school health team** when questions arise or the student's health status changes.

Continued on next page

ACTIONS for Trained Diabetes Personnel *Continued*

- ❑ **Respect the student's confidentiality and right to privacy.**
- ❑ **Be available** on campus during regular school hours and when the student participates in school-sponsored extracurricular activities held before or after school.
- ❑ **Accompany the student on field trips or off-campus school-sponsored sports events** and activities, as determined by the 504 Plan, IEP, or other education plan.
- ❑ **Provide support and encouragement to the student.**
- ❑ **Help ensure that the student has a supportive learning environment** and is treated the same as students without diabetes, except to respond to medical needs.

Please copy and distribute to the Teacher.

ACTIONS for the Teacher

- ❑ **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 Diabetes Medical Management Plan, 504 Plan, IEP, or other education plans are discussed.
- ❑ **Work with the school health team to implement written care plans,** including the Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan.
- ❑ **Recognize that a change in the student's behavior could be a symptom of blood glucose changes.** Be aware that a student who has low blood sugar, even mildly low, may briefly have some cognitive impairment. If changes occur, respond in accordance with the student's Quick Reference Emergency Plan.
- ❑ **Be prepared to recognize and respond to the signs and symptoms of hypoglycemia and hyperglycemia** in accordance with the student's Quick Reference Emergency Plan, which specifies when and how to contact the school nurse or trained diabetes personnel.
- ❑ **Provide a supportive environment for the student** to manage diabetes effectively and safely at school, which includes eating snacks for routine diabetes management and to treat low blood glucose levels, having bathroom privileges and access to drinking water, monitoring blood glucose, and administering insulin and other medications.
- ❑ **Provide classroom accommodations for the student with diabetes,** as indicated in the student's 504 Plan, IEP, or other education plan.
- ❑ **Provide instruction to the student** if it is missed because of absence for diabetes-related care.
- ❑ **Provide information for substitute teachers** that communicates the day-to-day needs of the student and the Quick Reference Emergency Plan.
- ❑ **Notify the parents/guardian in advance of changes in school schedule,** such as class parties, field trips, and other special events.
- ❑ **Communicate with the school nurse, trained diabetes personnel, or parents regarding any concerns about the student.**
- ❑ **Attend diabetes management training,** if designated as trained diabetes personnel.
- ❑ **Learn about diabetes** by reviewing the materials contained in this guide.
- ❑ **Treat the student with diabetes the same as other students,** except to meet medical needs.
- ❑ **Respect the student's confidentiality and right to privacy.**

*Please copy and distribute to the Coach and Physical Education Instructor.**

ACTIONS for the Coach and Physical Education Instructor

- ❑ **Encourage exercise and participation in physical activities and sports for students with diabetes** as well as for other students.
- ❑ **Treat the student with diabetes the same as other students,** except to meet medical needs.
- ❑ **Encourage the student to have personal supplies readily accessible.** Make sure blood glucose monitoring equipment is available at all activity sites.
- ❑ **Allow the student to check blood glucose levels** as outlined in the 504 Plan, IEP, or other education plan.
- ❑ **Understand and be aware that hypoglycemia can occur during and after physical activity**.
- ❑ **Recognize that a change in the student's behavior could be a symptom of blood glucose changes.**
- ❑ **Be prepared to recognize and respond to the signs and symptoms of hypoglycemia and hyperglycemia** and take initial actions in accordance with the student's Quick Reference Emergency Plan, which specifies when and how to contact the school nurse or trained diabetes personnel.
- ❑ **To treat hypoglycemia, provide the student with immediate access to a fast-acting form of glucose,** as outlined in the Quick Reference Emergency Plan.
- ❑ **Consider taping a fast-acting form of glucose (e.g., 3 or 4 glucose tablets or hard candies) to a clipboard or include it in the First Aid pack** that goes out to physical education activities, practices, and games.
- ❑ **Learn about diabetes** by reviewing materials contained in this guide.
- ❑ **Provide input to the student's school health team as needed.**
- ❑ **Communicate with the school nurse and/or trained diabetes personnel regarding any observations or concerns about the student.**
- ❑ **Provide information for the substitute PE instructor** that communicates the daily needs of the student and the Quick Reference Emergency Plan.
- ❑ **Respect the student's confidentiality and right to privacy.**

*If appropriate, please distribute this information to the playground/campus supervisor.

Please copy and distribute to the Food Service Manager, Lunchroom Staff, or Lunchroom Monitor.

ACTIONS for the Food Service Manager, Lunchroom Staff, or Lunchroom Monitor

- ❑ **Obtain a copy of the student's written meal plan** from the Diabetes Medical Management Plan.
- ❑ **Obtain a copy of the student's Quick Reference Emergency Plan** and keep it in a known, yet secure, place in the lunchroom.
- ❑ **Provide a lunch menu and lunch schedule in advance to parents** along with the nutrition content of menu selections, including grams of carbohydrate and fat.
- ❑ **Understand and be aware that hypoglycemia can occur before lunch.** Supervisory lunch personnel may need to encourage the student to eat appropriate foods.
- ❑ **Be prepared to recognize and respond to the signs and symptoms of hypoglycemia and hyperglycemia** and take actions in accordance with the student's Quick Reference Emergency Plan.
- ❑ **Recognize that a student's behavior change could be a symptom of blood glucose changes.**
- ❑ **Learn about the various kinds of diabetes meal and snack plans.** Know which type of meal plan the student follows.
- ❑ **Recognize that eating meals and snacks on time is a critical component of diabetes management.** Failure to eat lunch on time could result in low blood glucose, especially if a student has missed a morning snack or has had a physically strenuous or otherwise active morning at school.
- ❑ **Ensure that the student has timely access to food and sufficient time to finish.**
- ❑ **Know where supplies to treat hypoglycemia are kept** (e.g., with the student or another place).
- ❑ **Treat the student with diabetes the same as other students,** except to respond to medical needs.
- ❑ **Provide input to the student's school health team when requested.**
- ❑ **Communicate with the school nurse and/or trained diabetes personnel regarding any concerns about the student.**
- ❑ **Respect the student's confidentiality and right to privacy.**

Please copy and distribute to the Bus Driver.

ACTIONS for the Bus Driver

- ❑ **At the beginning of the school year, identify any students on the bus who have diabetes.**
- ❑ **Obtain a copy of the student's Quick Reference Emergency Plan** and keep it on the bus in a known, yet secure, place. Leave the plan readily available for substitute drivers.
- ❑ **Understand and be aware that although hypoglycemia normally occurs at the end of the day, it may happen at the beginning of the day** if the student has not eaten breakfast.
- ❑ **Recognize that a student's behavior change could be a symptom of blood glucose changes.**
- ❑ **Be prepared to recognize and respond to the signs and symptoms of hypoglycemia and hyperglycemia** and take initial actions in accordance with the student's Quick Reference Emergency Plan, which specifies when and how to contact trained diabetes and emergency personnel.
- ❑ **Keep supplies to treat low blood glucose on the bus and be aware of where the students with diabetes normally keep their supplies.**
- ❑ **Treat the student with diabetes the same as other students,** except to respond to medical needs.
- ❑ **Allow the student to eat snacks on the bus.**
- ❑ **Provide input to the student's school health team when requested.**
- ❑ **Communicate with the school nurse and/or trained diabetes personnel regarding any concerns about the student.**
- ❑ **Respect the student's confidentiality and right to privacy.**

Please copy and distribute to the Guidance Counselor or School Psychologist.

ACTIONS for the Guidance Counselor or School Psychologist

- ❑ **Work with school staff to promote a supportive learning environment.**
- ❑ **Ensure that the student with diabetes is treated the same as students without diabetes,** except to respond to medical needs.
- ❑ **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. Often, a single child will experience both kinds of feelings. Be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as other students.
- ❑ **Recognize that students with chronic illnesses such as diabetes may rebel by discontinuing all or part of their medical regimen.** Adolescent girls, for example, may not follow their insulin regimen because they want to lose weight or to avoid gaining weight.
- ❑ **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** that are consistent with the student's ability, skill, maturity, and development.
- ❑ **Provide input to the student's school health team** when requested.
- ❑ **Communicate with the school nurse and/or trained diabetes personnel regarding any concerns about the student.**
- ❑ **Respect the student's confidentiality and right to privacy.**

Please copy and distribute to the Parents or Guardian.

ACTIONS for the Parents or Guardian

- ❑ **Inform the school principal that your child has diabetes** when the student enrolls in school or is newly diagnosed with the disease.
- ❑ **Provide accurate and current emergency contact information.**
- ❑ **Provide the signed Diabetes Medical Management Plan** to the school nurse or other member of the school health team.
- ❑ **Attend and participate in the initial and annual meetings of the school health team** (includes student, parents, school nurse, principal, 504 coordinator, teachers, and other school personnel who have responsibility for the student with diabetes) to discuss implementing the student's Diabetes Medical Management Plan, to review medical accommodations and educational aids the student may need, and to develop a 504 Plan, IEP, or other education plan.
- ❑ **Provide specific information about your child's diabetes** and performance of diabetes-related tasks at home to the school health team.
- ❑ **Permit sharing of medical information** necessary for the student's safety between the school and the student's personal health care providers.
- ❑ **Inform school staff of any changes in the student's health status.**
- ❑ **Provide all supplies and equipment necessary for implementing your child's Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan,** including blood glucose monitoring equipment, supplies for insulin administration and urine ketone testing, snacks, fast-acting glucose, and a glucagon emergency kit. As appropriate, provide these supplies to school personnel. Replenish supplies as needed.
- ❑ **Provide and maintain all supplies and equipment necessary to accommodate the student's long-term needs (72 hours) in case of an emergency.**
- ❑ **Inform appropriate school staff (principal, teachers, coaches, and others) when the student plans to participate in school-sponsored activities** that take place before or after school so that health care coverage can be coordinated to ensure the health and safety of the student with diabetes.
- ❑ **Understand the federal, state, and local laws** that address the school's responsibilities to students with diabetes.

Please copy and distribute to Students with Diabetes who are able to take responsibility for their self-management.

ACTIONS for the Student with Diabetes

- ❑ **Participate in the school meeting** to discuss your Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan, as appropriate.
- ❑ **Always wear a medical alert ID** and carry a fast-acting source of glucose.
- ❑ **Tell teachers and other school staff members if you feel symptoms** of low or high blood glucose, especially if you need help.
- ❑ **Work with school staff members if you need help** checking your blood glucose, getting insulin, or eating the right amount of food at the right time during the school day.
- ❑ **Take charge of your diabetes care at school** if your written school plans allow you to. This may include:
  - checking and writing down blood glucose levels
  - figuring out the right insulin doses
  - giving yourself insulin
  - throwing away needles, lancets, and other supplies you have used in the right place
  - eating meals and snacks as planned
  - treating low blood sugar
  - carrying diabetes equipment and supplies with you at all times

Things You Need to Know:

1. **What** your written school plans say to help you manage your diabetes, which person at school will help you, and what is expected of you.
2. **Who** to contact and what to do when you are having a low blood sugar reaction.
3. **When** you should check your blood glucose levels, give yourself insulin, have a snack, and eat lunch.
4. **Where** your diabetes supplies are stored, if you don't carry them, and who to contact when you need to use them.

Section 3 TOOLS

Sample Diabetes Medical Management Plan *Page 49*
Sample Quick Reference Emergency Plan *Page 53*

Section 3 TOOLS FOR Effective Diabetes Management in Schools

This section contains examples of two important tools to help the school health team in managing the student with diabetes:

The **Sample Diabetes Medical Management Plan** is completed by the student's parents/guardian and personal health care team and can be used as the basis for developing education plans and nursing care plans for students with diabetes.

The **Sample Quick Reference Emergency Plan** addresses management of hypoglycemia and hyperglycemia emergencies. This plan should be completed for each student with diabetes and both pages should be copied and distributed to all relevant personnel, in accordance with the student's Diabetes Medical Management Plan, 504 Plan, IEP, or other education plan.

Date of Plan: _____

Diabetes Medical Management Plan

Effective Dates: _____

This plan should be completed by the student's personal health care team and parents/guardian. It should be reviewed with relevant school staff and copies should be kept in a place that is easily accessed by the school nurse, trained diabetes personnel, and other authorized personnel.

Student's Name: _____

Date of Birth: _____ Date of Diabetes Diagnosis: _____

Grade: _____ Homeroom Teacher: _____

Physical Condition: ❑ Diabetes type 1 ❑ Diabetes type 2

Contact Information

Mother/Guardian: _____

Address: _____

_____

Telephone: Home _____ Work _____ Cell _____

Father/Guardian: _____

Address: _____

_____

Telephone: Home _____ Work _____ Cell _____

Student's Doctor/Health Care Provider:

Name: _____

Address: _____

_____

Telephone: _____ Emergency Number: _____

Other Emergency Contacts:

Name: _____

Relationship: _____

Telephone: Home _____ Work _____ Cell _____

Notify parents/guardian or emergency contact in the following situations:

_____

_____

_____

Diabetes Medical Management Plan *Continued*

Blood Glucose Monitoring

Target range for blood glucose is ❑ 70-150 ❑ 70-180 ❑ Other_____

Usual times to check blood glucose _____

Times to do extra blood glucose checks (*check all that apply*)

❑ before exercise
❑ after exercise
❑ when student exhibits symptoms of hyperglycemia
❑ when student exhibits symptoms of hypoglycemia
❑ other (explain):_____

Can student perform own blood glucose checks? ❑ Yes ❑ No

Exceptions: _____

Type of blood glucose meter student uses: _____

Insulin

Usual Lunchtime Dose

Base dose of Humalog/Novolog /Regular insulin at lunch (circle type of rapid-/short-acting insulin used) is _____ units or does flexible dosing using _____ units/ _____ grams carbohydrate.
Use of other insulin at lunch: (circle type of insulin used): intermediate/NPH/lente _____ units or basal/ Lantus/Ultralente _____ units.

Insulin Correction Doses

Parental authorization should be obtained before administering a correction dose for high blood glucose levels. ❑ Yes ❑ No

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

Can student give own injections? ❑ Yes ❑ No
Can student determine correct amount of insulin? ❑ Yes ❑ No
Can student draw correct dose of insulin? ❑ Yes ❑ No

_____ Parents are authorized to adjust the insulin dosage under the following circumstances:_____

_____

For Students With Insulin Pumps

Type of pump:_____ Basal rates: _____ 12 am to _____

_____ _____ to _____

_____ _____ to _____

Type of insulin in pump:_____

Type of infusion set:_____

Insulin/carbohydrate ratio:_____Correction factor: _____

Diabetes Medical Management Plan *Continued*

Student Pump Abilities/Skills:	*Needs Assistance*
Count carbohydrates	❑ Yes ❑ No
Bolus correct amount for carbohydrates consumed	❑ Yes ❑ No
Calculate and administer corrective bolus	❑ Yes ❑ No
Calculate and set basal profiles	❑ Yes ❑ No
Calculate and set temporary basal rate	❑ Yes ❑ No
Disconnect pump	❑ Yes ❑ No
Reconnect pump at infusion set	❑ Yes ❑ No
Prepare reservoir and tubing	❑ Yes ❑ No
Insert infusion set	❑ Yes ❑ No
Troubleshoot alarms and malfunctions	❑ Yes ❑ No

For Students Taking Oral Diabetes Medications

Type of medication: _____ Timing: _____

Other medications: _____ Timing: _____

Meals and Snacks Eaten at School

Is student independent in carbohydrate calculations and management? ❑ Yes ❑ No

Meal/Snack	*Time*	*Food content/amount*
Breakfast		
Mid-morning snack		
Lunch		
Mid-afternoon snack		
Dinner		

Snack before exercise? ❑ Yes ❑ No

Snack after exercise? ❑ Yes ❑ No

Other times to give snacks and content/amount: _____

Preferred snack foods: _____

Foods to avoid, if any: _____

Instructions for when food is provided to the class (e.g., as part of a class party or food sampling event):

_____

_____

Exercise and Sports

A fast-acting carbohydrate such as _____ should be available at the site of exercise or sports.

Restrictions on activity, if any: _____

Student should not exercise if blood glucose level is below _____ mg/dl or above _____ mg/dl or if moderate to large urine ketones are present.

TOOLS

Diabetes Medical Management Plan *Continued*

Hypoglycemia (Low Blood Sugar)

Usual symptoms of hypoglycemia: _____

_____

Treatment of hypoglycemia: _____

_____

Glucagon should be given if the student is unconscious, having a seizure (convulsion), or unable to swallow. Route_____, Dosage_____, site for glucagon injection: _____arm, _____thigh, _____other.

If glucagon is required, administer it promptly. Then, call 911 (or other emergency assistance) and the parents/guardian.

Hyperglycemia (High Blood Sugar)

Usual symptoms of hyperglycemia: _____

_____

Treatment of hyperglycemia: _____

_____

Urine should be checked for ketones when blood glucose levels are above _____ mg/dl.

Treatment for ketones: _____

Supplies to be Kept at School

_____Blood glucose meter, blood glucose test strips, batteries for meter
_____Lancet device, lancets, gloves, etc.
_____Urine ketone strips
_____Insulin vials and syringes
_____Insulin pump and supplies
_____Insulin pen, pen needles, insulin cartridges
_____Fast-acting source of glucose
_____Carbohydrate containing snack
_____Glucagon emergency kit

Signatures

This Diabetes Medical Management Plan has been approved by:

_____ _____
Student's Physician/Health Care Provider Date

I give permission to the school nurse, trained diabetes personnel, and other designated staff members of _____ school to perform and carry out the diabetes care tasks as outlined by _____'s Diabetes Medical Management Plan. I also consent to the release of the information contained in this Diabetes Medical Management Plan to all staff members and other adults who have custodial care of my child and who may need to know this information to maintain my child's health and safety.

Acknowledged and received by:

_____ _____
Student's Parent/Guardian Date

_____ _____
Student's Parent/Guardian Date

Quick Reference Emergency Plan

for a Student with Diabetes

Photo

Hypoglycemia
(Low Blood Sugar)

Student's Name

Grade/Teacher Date of Plan

Emergency Contact Information:

Mother/Guardian **Father/Guardian**

Home phone Work phone Cell Home phone Work phone Cell

School Nurse/Trained Diabetes Personnel **Contact Number(s)**

Never send a child with suspected low blood sugar anywhere alone.

Causes of Hypoglycemia
- Too much insulin
- Missed food
- Delayed food
- Too much or too intense exercise
- Unscheduled exercise

Onset
- Sudden

Symptoms

Mild
- Hunger
- Shakiness
- Weakness
- Paleness
- Anxiety
- Irritability
- Dizziness
- Sweating
- Drowsiness
- Personality change
- Inability to concentrate
- Other: _____ _____

Circle student's usual symptoms.

Moderate
- Headache
- Behavior change
- Poor coordination
- Blurry vision
- Weakness
- Slurred Speech
- Confusion
- Other _____ _____

Circle student's usual symptoms.

Severe
- Loss of consciousness
- Seizure
- Inability to swallow

Circle student's usual symptoms.

Actions Needed

Notify School Nurse or Trained Diabetes Personnel. If possible, check blood sugar, per Diabetes Medical Management Plan. When in doubt, always TREAT FOR HYPOGLYCEMIA.

Mild
- Student may/may not treat self.
- Provide quick-sugar source.
  3-4 glucose tablets
  or
  4 oz. juice
  or
  6 oz. regular soda
  or
  3 teaspoons of glucose gel
- Wait 10 to 15 minutes.
- Recheck blood glucose.
- Repeat food if symptoms persist or blood glucose is less than _____.
- Follow with a snack of carbohydrate and protein (e.g., cheese and crackers).

Moderate
- Someone assists.
- Give student quick-sugar source per MILD guidelines.
- Wait 10 to 15 minutes.
- Recheck blood glucose.
- Repeat food if symptoms persist or blood glucose is less than _____.
- Follow with a snack of carbohydrate and protein (e.g., cheese and crackers).

Severe
- Don't attempt to give anything by mouth.
- Position on side, if possible.
- Contact school nurse or trained diabetes personnel.
- Administer glucagon, as prescribed.
- Call 911.
- Contact parents/guardian.
- Stay with student.

TOOLS

Quick Reference Emergency Plan
for a Student with Diabetes

Photo

Hyperglycemia
(High Blood Sugar)

Student's Name

Grade/Teacher Date of Plan

Emergency Contact Information:

Mother/Guardian **Father/Guardian**

Home phone Work phone Cell Home phone Work phone Cell

School Nurse/Trained Diabetes Personnel

Contact Number(s)

Causes of Hyperglycemia
- Too much food
- Too little insulin
- Decreased activity
- Illness
- Infection
- Stress

Onset
- Over time—several hours or days

Symptoms

Mild
- Thirst
- Frequent urination
- Fatigue/sleepiness
- Increased hunger
- Blurred vision
- Weight loss
- Stomach pains
- Flushing of skin
- Lack of concentration
- Sweet, fruity breath
- Other: _____

Circle student's usual symptoms.

Moderate
- Mild symptoms plus:
- Dry mouth
- Nausea
- Stomach cramps
- Vomiting
- Other:_____

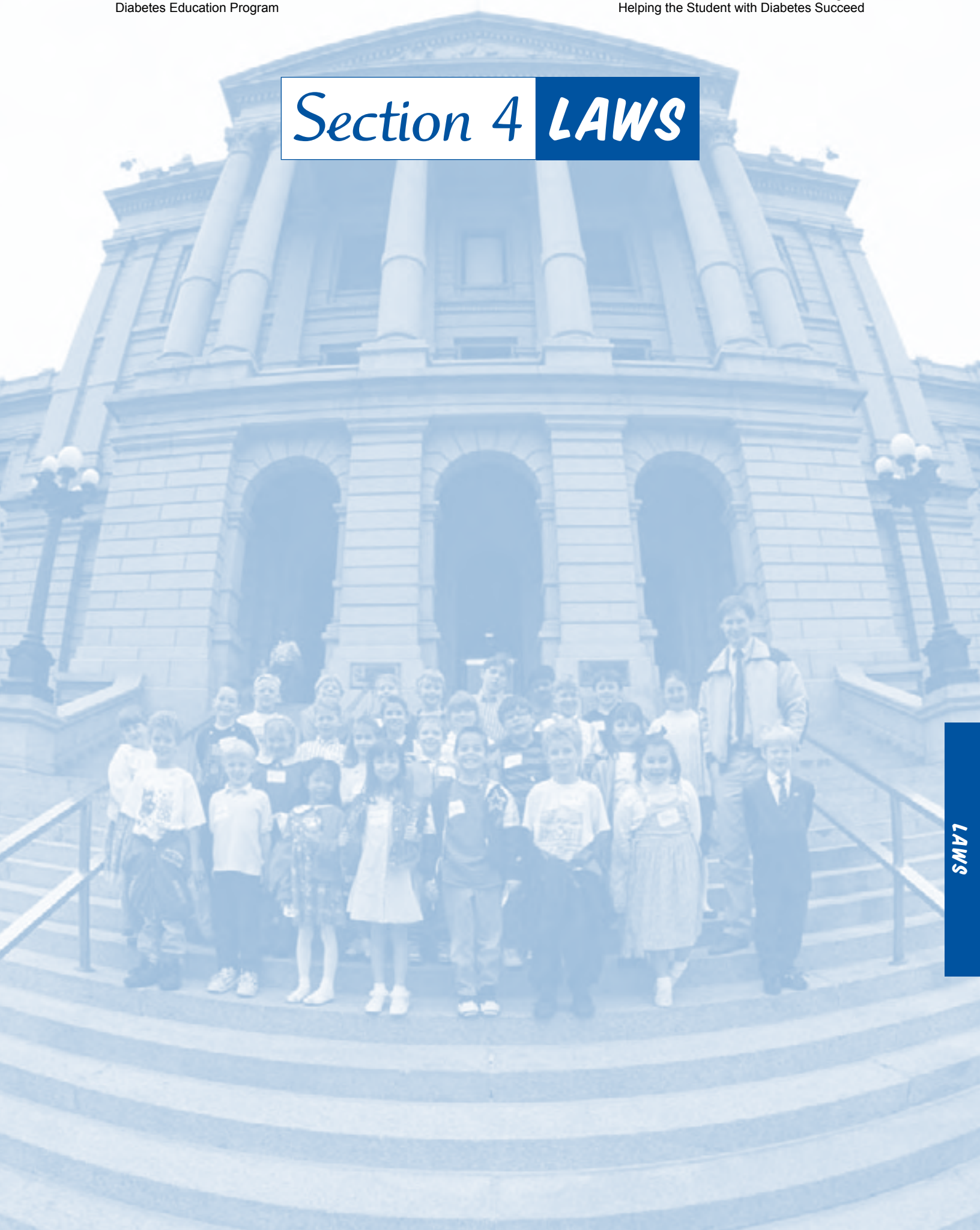
Circle student's usual symptoms.

Severe
- Mild and moderate symptoms plus:
- Labored breathing
- Very weak
- Confused
- Unconscious

Circle student's usual symptoms.

Actions Needed
- Allow free use of the bathroom.
- Encourage student to drink water or sugar-free drinks.
- Contact the school nurse or trained diabetes personnel to check urine or administer insulin, per student's Diabetes Medical Management Plan.
- If student is nauseous, vomiting, or lethargic, ____ call the parents/guardian or ____ call for medical assistance if parent cannot be reached.

Section 4 LAWS



Section 4 LAWS

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. For information on getting copies of the laws, see page 57.

Section 504 of the Rehabilitation Act of 1973 (Section 504) and Americans with Disabilities Act of 1990 (ADA)

Section 504 prohibits recipients of federal funds from discriminating against people on the basis of disability. Title II of the ADA prohibits discrimination on the basis of disability by public entities, regardless of whether the public entities receive federal funds. Public school districts that receive federal funds are covered by both Title II and Section 504 and the obligations of public schools to students with disabilities under each law are generally the same. For schools, these laws are enforced by the Office for Civil Rights (OCR) in the U.S. Department of Education.

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, since each student is different and his or her needs will vary. Historically, students with diabetes have been covered by Section 504 and the ADA.

Under Section 504, students with disabilities must be given an equal opportunity to participate in academic, nonacademic, and extracurricular activities. The regulations also require school districts to identify all students with disabilities and to 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 nondisabled students are met.

However, a student does not have to receive special education services in order to receive related aids and services under Section 504. 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 that schools may have to provide for a particular student with diabetes. 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."

Private schools that receive federal funds 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 are covered by Title III of the ADA.

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 (OSEP) in the Office of Special Education and Rehabilitative Services (OSERS) 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 parents, 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 be involved in the general 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 particular 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 might still be eligible for services under Section 504.

Family Education 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 consent of the student's parent or the eligible student (a student who is 18 years old or older or who attends an institution of postsecondary education). FERPA does allow schools to disclose this information, without obtaining consent, to school officials, including teachers, who have legitimate educational interests in the information, including the educational interests of the child. Schools that do this must include in their annual notification to parents and eligible students the criteria for determining who constitutes a school official and what constitutes a legitimate educational interest. Additionally, under FERPA, schools may not prevent the parents of students, or eligible students themselves, from inspecting and reviewing the student's education records.

How can I get copies of the federal laws?

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

- Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. 794, implementing regulations at 34 CFR Part 104. Available at www.ed.gov/ocr/disability.html.
- Title II of the Americans with Disabilities Act of 1990, 42 U.S.C. 12134 et seq., implementing regulations at 28 CFR Part 35. Available at www.ed.gov/ocr/disability.html.
- 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, at (202) 205–5413 or toll-free at 1–800–421–3481. For TTY, call 1–877–521–2172.
- Individuals With Disabilities Education Act, 20 U.S.C. 111 et seq., implementing regulations at 34 CFR Part 300. Available at www.ed.gov/offices/OSERS/OSEP.
- For copies of the IDEA regulations, you also may contact EdPubs at 1–877–433–7827.
- Family Education Rights and Privacy Act (FERPA), 20 U.S.C.1232g, implementing regulations at 34 CFR Part 99. Available at www.ed.gov/offices/OM/fpco.

How can I get more information?

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 at (202) 205–5413 or toll-free at 1–800–421–3481. For TTY, call 1–877–521–2172. Information is also available on the OCR website, www.ed.gov/ocr. 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) 205–5507 or (202) 205–5637 for TTY. More information about FERPA is available at www.ed.gov/offices/OM/fpco.

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RESOURCE LIST

Help for Students with Diabetes

American Academy of Family Physicians (AAFP)

The AAFP is the national member organization of family doctors. Its website includes articles about the link between obesity and diabetes in young people and how to help children lose weight.

11400 Tomahawk Creek Parkway
Leawood, KS 66211
Phone: (913) 906–6000
www.aafp.org

American Academy of Pediatrics (AAP)

The AAP is a professional membership organization committed to the attainment of optimal physical, mental, and social health and well-being for all infants, children, adolescents, and young adults.

141 Northwest Point Boulevard
Elk Grove Village, IL 60007–1098
Phone: (847) 434–4000
www.aap.org

American Association for Health Education (AAHE)

The AAHE serves health educators and other professionals who promote the health of all people through education and other systematic strategies. Programming focuses on health promotion in schools (K-12), health care, public and community agencies, business/industry, and professional preparation. AAHE is one of six national associations within the American Alliance for Health, Physical Education, Recreation and Dance.

1900 Association Drive
Reston, VA 20191
Toll-free: 1–800–213–7193, Ext. 437
www.aahperd.org/aahe

American Association of Diabetes Educators (AADE)

The AADE is a multidisciplinary organization for health professionals who provide diabetes education and care. The AADE website provides diabetes links, including information about diabetes in children and adolescents.

100 West Monroe Street, Suite 400
Chicago, IL 60603
Toll-free: 1–800–TEAM–UP4
(1–800–832–6874)
www.aadenet.org

American Council on Exercise (ACE)

The ACE is a nonprofit organization that promotes active, healthy lifestyles and their positive effects on the mind, body, and spirit. Its programs are directed to youths as well as adults.

4851 Paramount Drive
San Diego, CA 92123
Phone: (858) 535–8227
www.acefitness.org

American Diabetes Association (ADA)

The ADA's mission is to prevent and cure diabetes and improve the lives of people with diabetes. Founded in 1940, the association conducts programs in all 50 states and the District of Columbia, reaching hundreds of communities across the country. The ADA is a nonprofit organization that provides diabetes research, information and advocacy. The association offers a variety of programs focused on young people with diabetes.

1701 North Beauregard Street
Alexandria, VA 22311
Toll-free: 1–800–DIABETES
(1–800–342–2383)
www.diabetes.org

For information about ADA's training curriculum for school personnel:
www.diabetes.org/schooltraining

American Dietetic Association (ADA)

The ADA is a member organization for registered dietitians and registered technicians representing special interests, including public health, sports nutrition, medical nutrition therapy, diet counseling for weight control, cholesterol reduction, and diabetes. More than 5,000 dietitians now belong to the ADA's specialty group on Diabetes Care and Education.

120 South Riverside Plaza, Suite 2000
Chicago, IL 60606–6995
Toll-free: 1–800–877–1600
Consumer referral: 1–800–366–1655
www.eatright.org

American Medical Association (AMA)

The AMA is the nation's leader in promoting professionalism in medicine and setting standards for medical education, practice, and ethics. As the largest physician membership organization in the United States, the AMA is at the forefront of every major development in medicine and is a steadfast and influential advocate for physicians and their patients. The AMA works tirelessly to promote the art and science of medicine and the betterment of public health.

American Medical Association
Science, Quality and Public Health Group
515 N. State Street
Chicago, IL 60610
Phone: (312) 464–4908

American School Health Association (ASHA)

The mission of the ASHA is to promote and improve the well-being of children and youth by supporting comprehensive school health programs. In addition to a journal, the association produces a book for school nurses and families on managing school-age children with chronic health conditions.

Route 43, P.O. Box 708
Kent, OH 44240
Phone: (330) 678–1601
www.ashaweb.org

Barbara Davis Center for Childhood Diabetes

The Barbara Davis Center for Childhood Diabetes is the largest diabetes and endocrine care program in Colorado with unique facilities and resources for clinicians, clinical researchers, and basic biomedical scientists working to help patients with type 1 diabetes. The center provides state-of-the-art clinical diabetes care to a majority of children and many adults within the Rocky Mountain Region.

4200 East Ninth Avenue
Box B -140
Denver, Colorado 80262
Phone: (303) 315–8796
www.barbaradaviscenter.org

Centers for Disease Control and Prevention (CDC)

The CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. CDC divisions with special relevance to diabetes in students are the Division of Diabetes Translation, the Division of Nutrition and Physical Activity, and the Division of Adolescent and School Health.

4770 Buford Highway, NE
Atlanta, GA 30341
Toll-free: 1–800-311–3435
www.cdc.gov

Division of Diabetes Translation
Toll-free: 1–877–CDC–DIAB
(1–877–232–3422)
www.cdc.gov/diabetes

Division of Nutrition and Physical Activity
www.cdc.gov/nccdphp/dnpa

Division of Adolescent and School Health
www.cdc.gov/nccdphp/dash

Disability Rights Education and Defense Fund (DREDF)

DREDF is a national law and policy center dedicated to protecting and advancing the civil rights of people with disabilities through legislation, litigation, advocacy, technical assistance, and education and training of attorneys, advocates, persons with disabilities, and parents and children with disabilities.

2212 Sixth Street
Berkeley, CA 94710
Phone: (510) 644–2555
www.dredf.org

Diabetes Exercise and Sports Association

This nonprofit service organization is dedicated to enhancing the quality of life for people with diabetes through exercise.

1647-B West Bethany Home Road
Phoenix, AZ 85015
Toll-free: 1–800–898–4322
www.diabetes-exercise.org

Educational Resources Information Center (ERIC)

The ERIC is a federally funded, nonprofit information network designed to provide ready access to education literature for teachers and parents.

1307 New York Avenue, NW, Suite 300
Washington, DC 20005–4701
Toll-free: 1–800–822–9229
www.eric.ed.gov

Indian Health Service (IHS)
IHS National Diabetes Program

The mission of the IHS is to develop, document, and sustain a public health effort to prevent and control diabetes in American Indian and Alaskan Native communities.

5300 Homestead Road, NE
Albuquerque, NM 87110
Phone: (505) 248–4182
www.ihs.gov

Joslin Diabetes Center

The Joslin Diabetes Center and its affiliates offer a full range of services for children and adults with diabetes, including programs to help youngsters with diabetes and their families to better manage the disease.

1 Joslin Place
Boston, MA 02215
Toll-free: 1–800–JOS–LIN1
(1–800–567–5461)
www.joslin.harvard.edu

Juvenile Diabetes Research Foundation International (JDRF)

The mission of JDRF is to find a cure for diabetes and its complications through the support of research.

120 Wall Street
New York, NY 10005–4001
Toll-free: 1–800–533–CURE
(1–800–533–2873)
www.jdrf.org

Lawson Wilkins Pediatric Endocrine Society (LWPES)

The LWPES is a membership organization that promotes the acquisition and dissemination of knowledge of endocrine and metabolic disorders from conception through adolescence. The LWPES website provides links with information about diabetes in
children and adolescents.

867 Allardice Way
Stanford, CA 94305
Phone: (650) 494–3133
www.lwpes.org

National Association of Elementary School Principals (NAESP)

The NAESP promotes advocacy and support for elementary and middle level principals and other education leaders in their commitment to all children.

Linkages to Learning
1615 Duke Street
Alexandria, VA 22314
Toll-free: 1–800–38–NAESP
(1–800–386–2377)
www.naesp.org

National Association of School Nurses (NASN)

The NASN is a nonprofit organization that represents school nurses; it offers continuing education, issues briefs, holds an annual conference, provides legislative updates and position statements, and other materials.

1416 Park Street, Suite A
Castle Rock, CO 80109
Toll-free: 1–866–NASN–SNS
(1–866–627–6767)
www.nasn.org

For information about the National Association of School Nurses' and the Pediatric Adolescent Diabetes Research Foundation's "P.E.D.S." (Pediatric Education for Diabetes in Schools) training workshop and manual, contact NASN.

National Association of Secondary School Principals (NASSP)

The NASSP is a membership organization of middle level and high school principals, assistant principals, and aspiring school leaders from across the United States and around the world. NASSP's motto is "promoting excellence in school leadership," and the association provides members with various programs and services to guide them in administration, supervision, curriculum planning, and staff development to achieve that goal.

1904 Association Drive
Reston, VA 20191
(703) 860–0200
www.principals.org

National Association of State Boards of Education (NASBE)

The NASBE is a nonprofit association that represents state and territorial boards of education. NASBE's principal objectives include strengthening state leadership in educational policymaking, promoting excellence in the education of all students, advocating equality of access to educational opportunity, and assuring continued citizen support for public education.

277 South Washington Street, Suite 100
Alexandria, VA 22314
Phone (703) 684–4000
www.nasbe.org

National Center on Physical Activity and Disability (NCPAD)

The NCPAD provides information about current research, local programs, adapted equipment, recreation and leisure facilities, and many other aspects of physical activity for persons with disabilities, including children and adolescents with diabetes.

1640 West Roosevelt Road
Chicago, IL 60608
Toll-free: 1–800–900–8086
www.ncpad.org

National Education Association (NEA) Health Information Network

The NEA Health Information Network is the nonprofit health affiliate of the National Education Association, the nation's largest labor organization representing 2.3 million public school employees. The mission of the NEA Health Information Network is to ensure that all public school employees, students, and their communities have the health information and skills to achieve excellence in education.

1201 16th Street, NW
Suite 521
Washington, DC 20036–3290
Phone: (202) 833–4000
www.neahin.org

National Information Center for Children and Youth with Disabilities

This national information and referral clearinghouse on special education and disability-related issues provides information about local, state, or national disability groups and gives technical assistance to parents and professionals.

P.O. Box 1492
Washington, DC 20013–1492
Toll-free: 1–800–695–0285
www.nichcy.org

National Institute of Child Health and Human Development (NICHD), National Institutes of Health

The NICHD conducts and supports laboratory, clinical, and epidemiologic research on the reproductive, neurobiologic, developmental, and behavioral processes that determine and maintain the health of children, adults, families, and populations.

31 Center Drive, MSC 2425
Bethesda, MD 20892–2425
Phone: (301) 496–5133
www.nichd.nih.gov

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health

The NIDDK conducts and supports research on many of the most serious diseases affecting public health. The Institute supports much of the clinical research on the diseases of internal medicine and related subspecialty fields as well as many basic science disciplines.

National Diabetes Education Program (NDEP)

The NDEP is a federally sponsored program of the National Institutes of Health and the Centers for Disease Control and Prevention, involving over 200 public and private partners to improve diabetes treatment and outcomes for people with diabetes, promote early diagnosis, and prevent diabetes.

1 Diabetes Way
Bethesda, MD 20892–3600
Toll-free: 1–800–438–5383
www.ndep.nih.gov

National Diabetes Information Clearinghouse (NDIC)

The NDIC is a service of the National Institute of Diabetes and Digestive and Kidney Diseases that provides information about diabetes to people with diabetes, their families, health care professionals, and the public.

1 Information Way
Bethesda, MD 20892–3560
Toll-free: 1–800–860–8747
www.niddk.nih.gov

Pediatric Endocrinology Nursing Society (PENS)

The PENS is a nonprofit professional nursing organization with the goal of advancing pediatric endocrine nursing. Its website features articles about diabetes-related topics, including insulin pump therapy, obesity in children, and development of a pediatric diabetes education program for home health nurses.

P.O. Box 2933
Gaithersburg, MD 20886–2933
Phone: Not available. All contact is through mail or email.
Email: Through website under Contact PENS.
www.pens.org

U. S. Department of Agriculture (USDA)

The USDA supports several programs of importance to students with diabetes: the Center for Nutrition Policy and Promotion, the Food and Nutrition Information Center, and the Food and Nutrition Service.

Center for Nutrition Policy and Promotion
www.usda.gov/cnpp

Food and Nutrition Information Center
www.nal.usda.gov/fnic

Food and Nutrition Service
www.fns.usda.gov/fns

U.S. Department of Education*

The mission of the Department of Education is to ensure equal access to education and to promote educational excellence throughout the nation.

400 Maryland Avenue, SW
Washington, DC 20202

Office for Civil Rights (OCR)

Toll-free: 1–800–421–3481
TTY: 1–877–521–2172
www.ed.gov/ocr

Office of Special Education Programs (OSEP)

Phone: (202) 205–5507
TTY: (202) 205–5637
www.ed.gov/offices/OSERS/OSEP

A detailed listing of organizations and programs related to children and adolescents with diabetes and related conditions may be found in

"Resource Directory: Diabetes in Children and Adolescents".

The directory is available on the NDEP website:

WWW.NDEP.NIH.GOV

* Resources, including websites, are mentioned in this guide as examples and are only a few of the many appropriate resource materials available. Other materials mentioned are provided as resources and examples for the reader's convenience. Listing of materials and resources in this guide should not be construed or interpreted as an endorsement by the U.S. Department of Education of any private organization or business listed herein.

GLOSSARY of Diabetes Terms

A

Americans with Disabilities Act. A federal law enacted in 1990 to protect people with disabilities from discrimination. Under this law, diabetes can 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.

B

Blood glucose level. The amount of glucose in the blood. The recommended blood glucose levels for most people with diabetes are from about 80 to 120 before a meal, 180 or less after a meal, and between 100 and 140 at bedtime.

Blood glucose meter. A device that measures how much glucose is in the blood. A specially coated test strip containing a fresh sample of blood (obtained by pricking the skin, usually the finger, with a lancet) is inserted in the meter, which then measures the amount of glucose in the blood.

Blood glucose monitoring. The act of checking the amount of glucose in the blood. Also called self-monitoring of blood glucose.

C

Carbohydrates. One of the three main classes of foods and a source of energy for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods high in 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, and molasses.

Complications of diabetes. Harmful effects that may happen when a person has diabetes. Short-term complications resulting from poorly controlled or uncontrolled diabetes 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, include blindness, amputation of feet or legs, kidney disease, heart disease, stroke, and nerve damage.

D

Diabetes Medical Management Plan. Describes the medical orders or diabetes regimen developed by the student's health care provider and family.

Diabetic Coma. A severe emergency in which a person is not conscious because his or her blood glucose is too low or too high. See also hyperglycemia; hypoglycemia; and diabetic ketoacidosis.

Diabetic ketoacidosis (DKA). A condition that occurs due to insufficient insulin in the body. This can be due to illness, incorrect doses of insulin, or omitting insulin injections. The acidic state that follows causes fruity smelling breath, deep and rapid breathing, stomach pain, nausea, vomiting, and sleepiness. DKA can lead to coma and death if not treated promptly.

F

Fast-acting glucose. Foods containing simple sugar that are used to raise blood glucose levels quickly during a hypoglycemic episode.

G

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

Glucose. A simple sugar found in the blood. It is the body's main source of energy.

Glucose tablets or gel. Special products that deliver a pre-measured amount of pure glucose. They are a fast-acting form of glucose used to counteract hypoglycemia.

H

Hormone. A chemical produced by an organ that travels in the blood to affect other organs.

Hyperglycemia. A high level of glucose in the blood. High blood glucose can be due to a mismatch in insulin, food, and exercise. Symptoms include thirst, frequent urination, blurred vision, and fatigue.

Hypoglycemia. A low level of glucose in the blood. Low blood glucose is most likely to occur during or after exercise, if too much insulin is present, or not enough food is consumed. Symptoms include feeling shaky, having a headache, or being sweaty, pale, hungry, or tired.

I

Individualized Education Program (IEP). A program designed for students covered by the Individuals with Disabilities Education Act (IDEA).

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, a student's diabetes must impair his or her educational performance so that he or she requires special education and related services.

Insulin. A hormone produced by the pancreas that helps the body use glucose for growth and energy. There are several types of insulin that are used in combination to treat people with diabetes. These different types of insulin have been manufactured either to have immediate (rapid-acting or short-acting insulin), intermediate, or long (basal insulin) onset of action and duration of action in the body. A coordinated combination of insulins is used to allow for adequate treatment of diabetes at meals, snacks, during periods of physical activity, and through the night.

Insulin injections. The process of putting insulin into the body with a needle and syringe or an insulin pen.

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

Insulin pump. A device that delivers a continuous supply of insulin. The insulin is delivered in a steady, measured dose through a system of plastic tubing (infusion set). Most infusion sets are started with a guide needle, then the plastic cannula (a tiny, flexible plastic tube) is left in place, taped with dressing, and the needle is removed.

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

K

Ketoacidosis. See Diabetic ketoacidosis.

Ketones (ketone bodies). Chemicals that the body makes when there is not enough insulin in the blood and the body must break down fat for its energy. Ketones can poison and even kill body cells. When the body does not have the help of insulin, ketones build up in the blood and "spill" over into the urine so that the body can get rid of them. Ketones that build up in the body for a long time lead to serious illness and coma. See also: Diabetic ketoacidosis.

L

Lancet. A fine, sharp-pointed needle used by people with diabetes for pricking their skin to obtain a sample of blood for blood glucose monitoring.

M

Metabolism. The term for the way cells chemically change food so that it can be used to keep the body alive.

Medical alert identification. An identification card and necklace or bracelet indicating the student has diabetes and giving an emergency number to call.

Mg/dL. Milligrams per deciliter. This term is 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 used to implement the student's diabetes medical management plan. The plan describes functional problem areas, sets goals for overcoming problems, and lists tasks/interventions to meet the goals.

P

Pallor. Abnormal paleness of the skin.

Palpitations. Abnormally rapid or violent beating of the heart.

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

Peak effect time. Time when insulin has its major impact on reducing blood glucose levels. See also Insulin.

Q

Quick Reference Emergency Plan. This plan provides school personnel with essential information on how to recognize and treat hypoglycemia or hyperglycemia.

S

Section 504 of the Rehabilitation Act. A federal law that prohibits recipients of federal funds from discriminating against people on the basis of disability.

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

T

Target range. A selected level for blood glucose values that the person with diabetes tries to maintain. The target range is usually determined by the physician in consultation with the patient (or parents, if the patient is a child). See also blood glucose levels.

Test strips. Specially designed strips used in blood glucose meters or in urine testing.

Trained Diabetes Personnel. Nonmedical personnel who have basic diabetes knowledge and have received training in diabetes care, including the performance of blood glucose monitoring, insulin and glucagon administration, recognition and treatment of hypoglycemia and hyperglycemia, and performance of urine ketone testing.

U

Urine ketone testing. A procedure for measuring the level of ketones in the urine.

Care of Children With Diabetes in the School and Day Care Setting

AMERICAN DIABETES ASSOCIATION

Diabetes is one of the most common chronic diseases of childhood, with a prevalence of ~1.7 affected individuals per 1,000 people aged <20 years (1–4). In the U.S., ~13,000 new cases are diagnosed annually in children (4–7). There are about 125,000 individuals <19 years of age with diabetes in the U.S. (8). The majority of these young people attend school and/or some type of day care and need knowledgeable staff to provide a safe school environment (9–12). Both parents and the health care team should work together to provide school systems and day care providers with the information necessary to allow children with diabetes to participate fully and safely in the school experience.

DIABETES AND THE LAW — Federal laws that protect children with diabetes include Section 504 of the Rehabilitation Act of 1973, the Individuals with Disabilities Education Act of 1991 (originally the Education for All Handicapped Children Act of 1975), and the Americans with Disabilities Act. Under these laws, diabetes has been considered to be a disability, and it is illegal for schools and/or day care centers to discriminate against children with disabilities. In addition, any school that receives federal funding or any facility considered open to the public must reasonably accommodate the special needs of children with diabetes. Indeed, federal law requires an individualized assessment of any child with diabetes. The required accommodations should be provided within the child's usual school setting with as little disruption to the school's and the child's routine as possible and allowing the child full participation in all school activities.

Despite these protections, children in the school and day care setting still face discrimination. For example, some day care centers may refuse admission to children with diabetes, and children in the classroom may not be provided the assistance necessary to monitor blood glucose and may be prohibited from eating needed snacks. The American Diabetes Association works to ensure the safe and fair treatment of children with diabetes in the school and day care setting (13–15).

Diabetes care in schools

Appropriate diabetes care in the school and day care setting is necessary for the child's immediate safety, long-term well being, and optimal academic performance. The Diabetes Control and Complications Trial showed a significant link between blood glucose control and the later development of diabetes complications, with improved glycemic control decreasing the risk of these complications (16,17). To achieve glycemic control, a child must monitor blood glucose frequently, follow a meal plan, and take medications. Insulin is usually taken in multiple daily injections or through an infusion pump. Crucial to achieving glycemic control is an understanding of the effects of physical activity, nutrition therapy, and insulin on blood glucose levels.

To facilitate the appropriate care of the student with diabetes, school and day care personnel must have an understanding of diabetes and must be trained in its management and in the treatment of diabetes emergencies. Knowledgeable trained personnel are essential if the student is to avoid the immediate health risks of low blood glucose and to achieve the metabolic control required to decrease risks for later development of diabetes complications. Studies have shown that the majority of school personnel have an inadequate understanding of diabetes and that parents of children with diabetes lack confidence in their teachers' ability to manage diabetes effectively (12,18,19). Consequently, diabetes education must be targeted toward day care providers, teachers, and other school personnel who interact with the child, including school administrators, school coaches, school nurses, health aides, bus drivers, secretaries, etc.

The purpose of this position statement is to provide recommendations for the management of children with diabetes in the school and day care setting.

GENERAL GUIDELINES FOR THE CARE OF THE CHILD IN THE SCHOOL AND DAY CARE SETTING

I. Diabetes Health Care Plan

An individualized Diabetes Health Care Plan should be developed by the parent/guardian, the student's diabetes care team, and the school or day care provider. Inherent in this process are delineated responsibilities assumed by all parties, including the parent/guardian, the school personnel, and the student. These responsibilities are outlined in this position statement. The Diabetes Health Care Plan should address the specific needs of the child and provide specific instructions for each of the following:

1. Blood glucose monitoring, including the frequency and circumstances requiring testing.

The recommendations in this paper are based on the evidence reviewed in the following publications: Diabetes Control and Complications Trial Research Group: The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 329:977–986, 1993; and Diabetes Control and Complications Trial Research Group: The effect of intensive diabetes treatment on the development and progression of long-term complications in adolescents with insulin-dependent diabetes mellitus. *J Pediatr* 125:177–188, 1994.

The initial draft of this paper was prepared by Georgeanna Klingensmith, MD, Francine Kaufman, MD, *Desmond Schatz*, MD, and *William Clarke*, MD. The paper was peer-reviewed, modified, and approved by the Professional Practice Committee and the Executive Committee, November 1998. Most recent review/revision, 2000.

2. Insulin administration (if necessary), including doses/injection times prescribed for specific blood glucose values and the storage of insulin.
3. Meals and snacks, including food content, amounts, and timing.
4. Symptoms and treatment of hypoglycemia (low blood glucose), including the administration of glucagon if recommended by the student's treating physician.
5. Symptoms and treatment of hyperglycemia (high blood glucose).
6. Testing for ketones and appropriate actions to take for abnormal ketone levels, if requested by the student's health care provider.

Figure 1 includes a sample Diabetes Health Care Plan. For detailed information on the symptoms and treatment of hypoglycemia and hyperglycemia, refer to the *Medical Management of Type 1 Diabetes* (20). A brief description of diabetes targeted to school and day care personnel is included in the APPENDIX; it may be helpful to include this information as an introduction to the Diabetes Health Care Plan.

II. Responsibilities of the various care providers

A. The parent/guardian should provide the school or day care provider with the following:

1. All materials and equipment necessary for diabetes care tasks, including blood glucose testing, insulin administration (if needed), and urine or blood ketone testing. The parent/guardian is responsible for the maintenance of the blood glucose testing equipment (i.e., cleaning and performing controlled testing per the manufacturer's instructions) and must provide materials necessary to ensure proper disposal of materials. A separate logbook should be kept at school with the diabetes supplies for the staff or student to record test results; blood glucose values should be transmitted to the parent/guardian for review as often as requested.
2. Supplies to treat hypoglycemia, including a source of glucose and a glucagon emergency kit, if indicated in the Diabetes Health Care Plan.
3. Information about diabetes and the performance of diabetes-related tasks.
4. Emergency phone numbers for the parent/guardian and the diabetes care team so that the school can contact these individuals with diabetes-related questions and/or during emergencies.
5. Information about the student's meal/snack schedule. The parent should work with the school to coordinate this schedule with that of the other students as closely as possible. For young children, instructions should be given for when food is provided during school parties and other activities.

B. The school or day care provider should provide the following:

1. Training to all adults who provide education/care for the student on the symptoms and treatment of hypoglycemia and hyperglycemia and other emergency procedures. An adult and back-up adult(s) trained to *1*) perform fingerstick blood glucose monitoring and record the results; *2*) take appropriate actions for blood glucose levels outside of the target ranges as indicated in the student's Diabetes Health Care Plan; and *3*) test the urine or blood for ketones, when necessary, and respond to the results of this test.
2. Immediate accessibility to the treatment of hypoglycemia by a knowledgeable adult. The student should remain supervised until appropriate treatment has been administered, and the treatment should be available as close to where the student is as possible.
3. If indicated by the child's developmental capabilities and the Diabetes Health Care Plan, an adult and back-up adult(s) trained in insulin administration.
4. An adult and back-up adult(s) trained to administer glucagon, in accordance with the student's Diabetes Health Care Plan.
5. A location in the school to provide privacy during testing and insulin administration, if desired by the student and family, or permission for the student to check his or her blood glucose level and to take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if indicated in the student's Diabetes Health Care Plan.
6. An adult and back-up adult(s) responsible for the student who will know the schedule of the student's meals and snacks and work with the parent/guardian to coordinate this schedule with that of the other students as closely as possible. This individual also will notify the parent/guardian in advance of any expected changes in the school schedule that affect the student's meal times or exercise routine. Young children should be reminded of snack times.
7. Permission for the student to see school medical personnel upon request.
8. Permission for the student to eat a snack anywhere, including the classroom or the school bus, if necessary to prevent or treat hypoglycemia.
9. Permission to miss school without consequences for required medical appointments to monitor the student's diabetes management. This should be an excused absence with a doctor's note, if required by usual school policy.
10. Permission for the student to use the restroom and have access to fluids (i.e., water) as necessary.
11. An appropriate location for insulin and/or glucagon storage, if necessary.

An adequate number of school personnel should be trained in the necessary diabetes procedures (e.g., blood glucose monitoring, insulin and glucagon administration) and in the appropriate response to high and low blood glucose levels to ensure that at least one adult is present to perform these procedures in a timely manner while the student is at school, on field trips, and during extracurricular activities or other school-sponsored events. These school personnel need not be health care professionals.

The student with diabetes should have immediate access to diabetes supplies at all times, with supervision as needed. Provisions similar to those described above must be available for field trips, extracurricular activities, other school-sponsored events, and on transportation provided by the school or day care facility to enable full participation in school activities.

It is the school's legal responsibility to provide appropriate training to school

Figure 1—*Diabetes Health Care Plan.*

Table 1—*Resources for teachers, child care providers, parents, and health professionals*

Children with Diabetes: Information for Teachers & Child-Care Providers, Alexandria, VA, American Diabetes Association, 1999 (brochure); available online at www.diabetes.org/ada/teacher.asp.

Your School & Your Rights: Protecting Children with Diabetes Against Discrimination in Schools and Day Care Centers, Alexandria, VA, American Diabetes Association, 2000 (brochure); available online at http://www.diabetes.org/main/type1/parents_kids/away/scrights.jsp.*

Your Child Has Type 1 Diabetes: What You Should Know, Alexandria, VA, American Diabetes Association, 1999 (brochure); available online at http://www.diabetes.org/main/community/advocacy/type1.jsp*

Treating Diabetes Emergencies: What You Need to Know, Alexandria, VA, American Diabetes Association, 1995 (video); 1-800-232-6733.

Complete Guide to Diabetes, Alexandria, VA, American Diabetes Association, 1999; 1-800-232-6733.

Raising a Child with Diabetes: A Guide for Parents, Alexandria, VA, American Diabetes Association, 2000; 1-800-232-6733.

Clarke W: Advocating for the child with diabetes. *Diabetes Spectrum* 12:230–236, 1999.

Education Discrimination Resources List, Alexandria VA, American Diabetes Association, 2000.*

Wizdom: A Kit of Wit and Wisdom for Kids with Diabetes (and their parents), Alexandria, VA, American Diabetes Association, 2000. Order information and select resources available at www.diabetes.org/wizdom.

The Care of Children with Diabetes in Child Care and School Setting (video); available from, Managed Design, Inc., P.O. Box 3067, Lawrence, KS 66046, (785) 842-9088.

Fredrickson L, Griff M: *Pumper in the School, Insulin Pump Guide for School Nurses, School Personnel and Parents. MiniMed Professional Education, Your Clinical Coach. First Edition, May 2000.* MiniMed, Inc., 1-800-440-7867.

Tappon D. Parker M, Bailey W: *Easy As ABC, What You Need to Know About Children Using Insulin Pumps in School.* Disetronic Medical Systems, Inc., 1-800-280-7801.

*These documents are available in the American Diabetes Association's Education Discrimination Packet by calling 1-800-DIABETES.

staff on diabetes-related tasks and in the treatment of diabetes emergencies. This training should be provided by health care professionals with expertise in diabetes unless the student's health care provider determines that the parent/guardian is able to provide the school personnel with sufficient oral and written information to allow the school to have a safe and appropriate environment for the child. If appropriate, members of the health care team should provide instruction and materials to the parent/guardian to facilitate the education of school staff. Educational materials from the American Diabetes Association and other sources targeted to school personnel and/or parents are available. Table 1 includes a listing of appropriate resources.

III. Expectations of the student in diabetes care

Children and youths should be able to implement their diabetes care at school with parental consent to the extent that is appropriate for the student's development and his or her experience with diabetes. The extent of the student's ability to participate in diabetes care should be agreed upon by the school personnel, the parent/guardian, and the health care team, as necessary. The ages at which children are able to perform self-care tasks are very individual and variable, and a child's capabilities and willingness to provide self-care should be respected.

1. *Preschool and day care.* The preschool child is usually unable to perform diabetes tasks independently. By 4 years of age, children may be expected to generally cooperate in diabetes tasks.
2. *Elementary school.* The child should be expected to cooperate in all diabetes tasks at school. By age 8 years, most children are able to perform their own fingerstick blood glucose tests with supervision. By age 10, some children can administer insulin with supervision.
3. *Middle school or junior high school.* The student should be able to administer insulin with supervision and perform self-monitoring of blood glucose under usual circumstances when not experiencing a low blood glucose level.
4. *High school.* The student should be able to perform self-monitoring of blood glucose under usual circumstances when not experiencing low blood glucose levels. In high school, adolescents should be able to administer insulin without supervision.

At all ages, individuals with diabetes may require help to perform a blood glucose test when the blood glucose is low. In addition, many individuals require a reminder to eat or drink during hypoglycemia and should not be left unsupervised until such treatment has taken place and the blood glucose value has returned to the normal range.

MONITORING BLOOD GLUCOSE IN THE CLASSROOM — It is best for a student with diabetes to obtain a blood glucose level and to respond to the results as quickly and conveniently as possible. This is important to avoid medical problems being worsened by a delay in testing/treatment and to minimize educational problems caused by missing instruction in the classroom. Accordingly, as stated earlier, a student should be permitted to monitor his or her blood glucose level and take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if preferred by the student and indicated in the student's Diabetes Health Care Plan. However, some students desire privacy during testing and this preference should also be accommodated.

In summary, with proper planning and the education and training of school personnel, children and youth with diabetes can fully participate in the school experience. To this end, the family, the health care team, and the school should work together to ensure a safe learning environment.

APPENDIX: BACKGROUND INFORMATION ON DIABETES FOR SCHOOL PERSONNEL — Diabetes is a serious, chronic disease that impairs the body's ability to use food. Insulin, a hormone produced by the pancreas, helps the body

convert food into energy. In people with diabetes, either the pancreas does not make insulin or the body cannot use insulin properly. Without insulin, the body's main energy source—glucose—cannot be used as fuel. Rather, glucose builds up in the blood. Over many years, high blood glucose levels can cause damage to the eyes, kidneys, nerves, heart, and blood vessels.

The majority of school-aged youth with diabetes have type 1 diabetes. People with type 1 diabetes do not produce insulin and must receive insulin through either injections or an insulin pump. Insulin taken in this manner does not cure diabetes and may cause the student's blood glucose level to become dangerously low. Type 2 diabetes, the most common form of the disease typically afflicting obese adults, has been shown to be increasing in youth (21). This may be due to the increase in obesity and decrease in physical activity in young people. Students with type 2 diabetes may be able to control their disease through diet and exercise alone or may require oral medications and/or insulin injections. All people with type 1 and type 2 diabetes must carefully balance food, medications, and activity level to keep blood glucose levels as close to normal as possible.

Low blood glucose (hypoglycemia) is the most common immediate health problem for students with diabetes. It occurs when the body gets too much insulin, too little food, a delayed meal, or more than the usual amount of exercise. Symptoms of mild to moderate hypoglycemia include tremors, sweating, lightheadedness, irritability, confusion, and drowsiness. A student with this degree of hypoglycemia will need to ingest carbohydrates promptly and may require assistance. Severe hypoglycemia, which is rare, may lead to unconsciousness and convulsions and can be life-threatening if not treated promptly.

High blood glucose (hyperglycemia) occurs when the body gets too little insulin, too much food, or too little exercise; it may also be caused by stress or an illness such as a cold. The most common symptoms of hyperglycemia are thirst, frequent urination, and blurry vision. If untreated over a period of days, hyperglycemia can cause a serious condition called diabetic ketoacidosis (DKA), which is characterized by nausea, vomiting, and a high level of ketones in the blood and urine. For students using insulin infusion pumps, lack of insulin supply may lead to DKA more rapidly. DKA can be life-threatening and thus requires immediate medical attention.

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The following organizations have contributed generously to the printing and dissemination of this guide.

Aventis Pharmaceuticals

Eli Lilly and Company

Indian Health Service

Medtronic MiniMed

Novo Nordisk Pharmaceuticals, Inc.

Pfizer Inc.

U.S. Department of
Health and Human Services

A Joint Program of the
National Institutes of Health and the
Centers for Disease Control and Prevention

NIH Publication No. 03-5217
June 2003