

Students with Diabetes

Dear _____:
School Personnel

Diabetes is one of the most common chronic diseases in school-age children, affecting more than 150,000 across the United States. During your tenure as a teacher, you likely have or will have a student with diabetes in your care. During school hours, children often rely on school staff to provide the support and encouragement needed to carry out their diabetes-related health plans.

With the first day of school approaching, now is a great time to begin working with parents and the school health team to ensure diabetic children have a safe environment in which to learn. The nurse, principal, physical education teacher and classroom teacher play essential roles in ensuring students are able to manage their disease. When children's diabetes is properly managed, they feel better, are more productive at school, and can possibly prevent long-term complications caused by diabetes.

The first step to enabling your students to properly care for their diabetes is to learn more about it. To help get you started, you will find the following materials enclosed:

- **Diabetes Primer:** This guide offers guidance on how to meet the needs of a child with diabetes and helps you understand the disease.
- **Diabetes Resource Guide:** An overview of key diabetes organizations throughout the United States where you can learn more about the disease.
- **Diabetes Medical Management Plan:** A personalized student diabetes management tool to keep on file in the classroom and school office.

Please share these materials with the appropriate school staff. If you have any questions about the materials enclosed here or are interested in learning more about diabetes and proper management, please contact me at _____ during the hours of _____:____ AM - _____:____ PM. *Phone Number*

Warm regards,

Diabetes Educator

Students with Diabetes

Information for Teachers and Other School Personnel

If you work with children, it is likely that at some point you will have a child with diabetes in your care. Diabetes requires a great deal of self-care. When children with diabetes are at school, they often rely on school staff to provide the support and encouragement they need to carry out their self-care. Schools also have a legal responsibility to accommodate the special needs of children with diabetes (see “The Law and Diabetes”). This guide will help you understand the disease and offer guidance on how to meet the needs of a child with diabetes.

What is Diabetes?

Diabetes is a chronic disease that impairs the body’s ability to use food properly. The hormone insulin, which is produced in the pancreas, helps the body to convert food into energy. In people with diabetes, either the pancreas doesn’t make insulin or the body cannot use insulin properly. Without insulin, glucose—the body’s main energy source—builds up in the blood.

Children with diabetes typically have insulin-dependent (type 1) diabetes, in which the pancreas doesn’t make insulin. They need daily insulin injections to enable their bodies to use food properly. Two kinds of problems can occur when the body doesn’t make insulin. Hyperglycemia occurs when blood glucose levels get too high—for example, when the body gets too little insulin or too much food. Untreated, hyperglycemia may develop into ketoacidosis, a very serious condition.

Hypoglycemia is the opposite of hyperglycemia. It occurs when blood glucose levels get too low—for example, when the body gets too much insulin or too little food. Hypoglycemia is the most common problem in children with diabetes.

Diabetes is not contagious. You cannot “catch” diabetes from someone who has it. Diabetes can run in families. Researchers continue to study how and why diabetes occurs in certain children and families. Although diabetes cannot be cured, it can be controlled. Research has shown that maintaining good control of blood glucose levels can prevent long-term complications of diabetes.

The Law and Diabetes

Diabetes is considered a disability under federal law. It is illegal to discriminate against a person with a disability. Children with diabetes must have full access to public programs, including the public schools, and are entitled to special education services if needed. A child’s school must prepare a plan that outlines how the child’s special healthcare needs will be met and designate a school staff member who is responsible for implementing the plan. The child’s parents must be consulted about the plan, which cannot be changed without the parents’ consent. The plan should be updated annually.

Treating Diabetes

The goals of diabetes treatment in children are:

- Maintain normal growth and development
- Keep blood glucose levels within a target range (not too high, not too low)
- Promote healthy emotional well-being

Ideas about how to treat diabetes have changed considerably in recent years. Today, diabetes treatment plans are geared toward the needs of the individual child and their family.

Efforts to maintain blood glucose levels in a target range involve balancing insulin, food intake, and exercise. Remember: Food raises blood glucose levels, while insulin and exercise lower them. A good diabetes treatment plan includes:

- Eating reasonably, consistently, and on schedule

- Testing blood glucose levels regularly
- Adjusting insulin as blood glucose levels and activities warrant
- Exercising regularly

Blood Glucose Testing

Regular testing of blood glucose levels is an essential part of diabetes care. Testing is done by taking a drop of blood, usually from a finger, and placing it on a special test strip in a glucose meter. Blood glucose meters are easy to use, and most children quickly learn how to do their own blood glucose tests. Diabetes healthcare professionals frequently recommend that children test their blood glucose levels during the school day (for example, before eating lunch and before strenuous exercise).

Blood glucose levels are measured in milligrams per deciliter (mg/dl). A normal blood glucose level is between 70 and 120 mg/dl. Keeping blood glucose levels within this range is rarely possible in children with diabetes. A healthcare provider will often identify a target range for blood glucose levels—for example, 80 to 180 mg/dl.

However, maintaining blood glucose levels within the target range cannot always be accomplished. Children’s varying schedules and eating habits, as well as the physical changes that occur as they grow, can mean that blood glucose levels are out of range for no apparent reason. It’s important that children are never made to feel it’s their fault if their blood glucose is out of range.

Insulin Injections

Most children manage diabetes with two-to-three insulin injections per day, however, this number varies from child-to-child. Insulin injections typically are administered at regular times of the day. There is no strict rule about the age at which children should be able to administer their own injections.

Some children and teenagers use an insulin pump, which delivers a continuous low dose of insulin, as an alternative to insulin injections. An insulin pump comes with special instructions for care and maintenance, which should be included in a written plan.

Meals and Snacks

Children with diabetes do best if they can eat meals at about the same time every day. They usually need to eat a mid-afternoon snack, and sometimes a midmorning snack as well. Additional snacks may be needed before, during, or after exercise.

The child may bring snack foods to school each day, or the child’s parents may ask to keep a supply of snack food at school. Crackers with peanut butter or cheese, pretzels, apples, and juice make ideal snacks. Parents may ask to see lunch menus ahead of time to help plan insulin dosages.

Parents often will want to know in advance about any special activities that will change the child’s usual eating schedule. A schedule change can usually be dealt with by adjusting the child’s meal plan or insulin dose.



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School Parties

Many party foods can be high in sugar or carbohydrates, so children with diabetes may bring their own popcorn or pretzels to eat at a party. A child with diabetes may be able to eat birthday cake or other special food occasionally. The child may need to take more insulin than usual to prevent high blood glucose. Playing an energetic game also can be a good way of lowering blood glucose levels after eating sweets.

Sports and Exercise

Children with diabetes can and should play games and sports with their friends. Exercise helps to lower blood glucose levels. In addition, taking part in gym class and team sports helps a child with diabetes to make friends and feel like “one of the gang.”

Regular exercise is important because of the need to balance the effect of exercise with food and insulin. A child with diabetes may need to eat a snack before, during, or after strenuous exercise. If possible, the child should test blood glucose levels before taking part in a game or sport to determine when to eat a snack and how much food to eat.

Because children’s lives involve a lot of spontaneous activity, it’s a good idea for a child with diabetes always to carry snack foods like pretzels or crackers with cheese or peanut butter. Children also should also sugar cubes, hard candy, glucose tablets, or another form of quick-acting sugar to treat low blood glucose. The timing of exercise may affect a child’s meal plan and need for insulin. Parents should be notified in advance if a game or sports event will change the child’s meal time. Children with diabetes should not exercise if they are having symptoms of low blood glucose.

Hyperglycemia (high blood glucose)

Hyperglycemia occurs when blood glucose levels get too high, which can occur when:

- The body gets too little insulin, too much food, or too little exercise
- The body is under stress from a cold, sore throat, or illness

Recognizing and Treating Hyperglycemia

Symptoms:

- Excessive thirst
- Fatigue, weakness
- Frequent urination
- Blurred vision

Ketoacidosis

When the cells of the body cannot get enough glucose, the body starts to burn fat for energy, producing waste products called ketones. High levels of ketones cause ketoacidosis. Ketones can be detected with a simple urine test. Parents may request that the child do a test for ketones when symptoms of hyperglycemia are present. Ketoacidosis must be treated promptly because it can lead to a diabetic coma.

Recognizing and Treating Ketoacidosis

Symptoms:

- Dehydration (sunken eyes; dry, cracked lips)
- Drowsiness, labored breathing
- Vomiting
- Abdominal pain
- Fruity-smelling breath

Hypoglycemia (low blood glucose)

Hypoglycemia occurs when blood glucose levels are too low, which can happen when:

- The body gets too much insulin or not enough food
- Meals or snacks are missed or eaten late
- The child gets more exercise than usual

Hypoglycemia is the most common problem in children with diabetes. It is typically mild and can be treated easily. Most school-age children can tell when their blood glucose is low. Very young children who aren’t aware of symptoms, or who can’t communicate that they are feeling “low,” need careful observation for subtle signs like daydreaming or irritability.

Recognizing and Treating Hypoglycemia

Symptoms:

- Shakiness, trembling
- Sweating
- Hunger
- Poor coordination
- Fatigue, sleepiness
- Slurred speech
- Pale skin
- Rapid pulse
- Irritability, crying
- Dizziness
- Headache
- Lack of concentration, daydreaming

What to do:

- Do not leave child unattended.
- Give child a sweet food or beverage (e.g. fruit juice, glucose tablets, sugar cubes, hard candy, regular soda).
- Repeat if child does not feel better after 10-15 minutes.
- When child feels better, feed a meal or snack as soon as possible.
- If no meal or snack is scheduled, give child crackers with cheese or peanut butter, half a sandwich, or a bowl of cereal with milk.
- Test child’s blood glucose level.
- Give child time to recover. For example, a test or exam should not be given right after an episode of hypoglycemia.

Severe Symptoms:

- Loss of consciousness
- Seizures

What to do:

- Have designated person give child a glucagon injection immediately.
- Notify child’s parents and/or physician immediately.

Eating sweets is not harmful to a child with diabetes who is having an episode of low blood glucose. Giving the child something sweet to eat is the right thing to do.



Diabetes Resources

National and International Diabetes Organizations/Corporations

American Diabetes Association (ADA)

1701 N. Beauregard St.
Alexandria, VA 22311
Phone: 1-800-DIABETES
<http://www.diabetes.org>

American Association of Diabetes Educators (AADE)

100 W. Monroe St.
Suite 400
Chicago, IL 60603
Phone: 1-800-338-3633
<http://www.aadenet.org>

Children with Diabetes

5689 Chancery Place
Hamilton, OH 45011
http://www.childrenwithdiabetes.com/index_cwd.htm

Diabetes Exercise and Sports Association (DESA)

8001 Montcastle Drive
Nashville, TN 37221
Phone: 1-800-898-4322
<http://www.diabetes-exercise.org/index.asp>

Juvenile Diabetes Research Foundation International (JDRF)

120 Wall St.
19th Floor
New York, NY 10005
Phone: 1-800-533-CURE
<http://www.jdrf.org>

International Diabetes Center (IDC)

3800 Park Nicollet Blvd.
Minneapolis, MN 55416-2699
Phone: (952) 993-3393
<http://www.internationaldiabetescenter.com>

International Diabetes Federation (IDF)

Avenue Emile De Mot 19,1000
Brussels, Belgium
Phone: 011-32-2-538-55-11
<http://www.idf.org/home>

Roche Diagnostics, maker of ACCU-CHEK® blood glucose meters

9115 Hague Rd.
Indianapolis, IN 46250-0457
Phone: (317) 521-3685
<http://www.accu-chek.com>

Academic and Research Institutions or Organizations

American Association of Clinical Endocrinologists (AACE)

1000 Riverside Ave.
Suite 205
Jacksonville, FL 32204
Phone: (904) 353-7878
<http://www.aace.com>

Centers for Disease Control and Prevention (CDC) & National Institutes of Health (NIH) – National Diabetes Education Program (NDEP)

4770 Buford Highway N.E.
Mailstop K-10
Atlanta, GA 30341-3717
Phone: (770) 488-5000
<http://www.cdc.gov/diabetes/ndep/index.htm>

Diabetes Action Research and Education Foundation (DAREF)

426 C Street N.E.
Washington, DC 20002
Phone: (202) 333-4520
<http://www.diabetesaction.org>

Diabetes Research Institute (DRI)

University of Miami School of Medicine
1450 N. W. 10th Ave.
Miami, FL 33136
Phone: (305) 243-5300
<http://www.drinet.org/>

Endocrine Society

8401 Connecticut Ave.
Suite 900
Chevy Chase, MD 20815-5817
Phone: (301) 941-0200
<http://www.endo-society.org>

Joslin Diabetes Center of the Harvard Medical School

One Joslin Place
Boston, MA 02215
Phone: (617) 732-2400
<http://www.joslin.org>

National Diabetes Information Clearinghouse (NDIC) –

National Institute of Health (NIH)
One Information Way
Bethesda, MD 20892-3560
Phone: (301) 654-3327
<http://www.diabetes.niddk.nih.gov>

National Institute of Diabetes and Digestive & Kidney Diseases (NIDDK)

of the National Institutes of Health (NIH)
9000 Rockville Pike
Bethesda, Maryland 20892
Phone: (301) 496-4000
<http://www.niddk.nih.gov>



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Related Sources

American Association of Kidney Patients (AAKP)

3505 E. Frontage Road
Suite 315
Tampa, FL 33607
Phone: 1-800-749-2257
<http://www.aakp.org>

American Dietetic Association (ADA)

120 S. Riverside Plaza
Suite 2000
Chicago, IL 60606
Phone: 1-800-877-1600
<http://www.eatright.org>

American Foundation for Urologic Disease (AFUD)

1000 Corporate Blvd.
Suite 410
Linthicum, MD 21090
Phone: 1-800-828-7866 or (410) 689-3990
Internet: <http://www.afud.org>

American Podiatric Medical Association (APMA)

9312 Old Georgetown Road
Bethesda, MD 20814
Phone: (301) 571-9200
<http://www.apma.org>

Amputee Coalition of America (ACA)

900 E. Hill Ave.
Suite 285
Knoxville, TN 37915-2568
Phone: 1-888-AMP-KNOW (1-888-267-5669) or (865) 524-8772
<http://www.amputee-coalition.org>

National Eye Institute (NEI)

of the National Institutes of Health (NIH)
31 Center Drive
MSC 2510
Bethesda, MD 20892-2510
Phone: (301) 496-5248
<http://www.nei.nih.gov>

National Kidney Foundation (NKF)

30 E. 33rd St.
Suite 1100
New York, NY 10016
Phone: 1-800-622-9010 or (212) 889-2210
<http://www.kidney.org>



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Diabetes Medical Management Plan

To be completed by parents/health professionals and reviewed with school staff. Copies should be kept in the student's classroom and on file in the main school office.

Diabetes Care Plan For: _____ School: _____

Date of Birth: ___/___/___ Grade: _____ Home Room Teacher: _____

Physical Condition: (Circle one) Type 1 Diabetes Type 2 Diabetes

Contact Information

Please notify parent/guardian in following situations: _____

Guardian #1: _____

Address: _____

Telephone: Home: _____ Work: _____ Cell: _____

Guardian #2: _____

Address: _____

Telephone: Home: _____ Work: _____ Cell: _____

Student's Doctor/Health Care Provider: _____

Address: _____

Telephone: _____ Emergency Number: _____

Other Emergency Contact: _____

Relationship: _____

Telephone: Home: _____ Work: _____ Cell: _____

Blood Glucose (Sugar) Monitoring

Target range for blood glucose is: (Circle one) 70-150 70-180 Other

Usual times to check blood glucose: _____

Times to do extra blood glucose checks: (Circle one) Before exercise After exercise

When student exhibits symptoms of Hyperglycemia/Hypoglycemia

Other: (Explain) _____

Can student perform own blood glucose checks? (Circle one) 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.

(Circle one) 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? (*Circle one*) 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: _____

Student Pump Abilities/Skills: (*Circle one for each*) 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? (*Circle one*) Yes No

<i>Meal/Snack</i>	<i>Time</i>	<i>Food content/amount</i>
Breakfast	_____	_____
Mid-morning snack	_____	_____
Lunch	_____	_____
Mid-afternoon snack	_____	_____
Dinner	_____	_____

Snack before exercise? (*Circle one*) 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):



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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.

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 | _____ Insulin pump and supplies |
| _____ Insulin pen, pen needles, insulin cartridges | _____ Lancet device, lancets, gloves, etc. |
| _____ Fast-acting source of glucose | _____ Urine ketone strips |
| _____ Carbohydrate containing snack | _____ Insulin vials and syringes |
| _____ 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 Physician/Health Care Provider

Date

Student's Physician/Health Care Provider

Date

