



STATE OF MICHIGAN
DEPARTMENT OF EDUCATION

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January 3, 2001

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MEMORANDUM

To: Superintendents of Local and Intermediate School Districts, Administrators of Public School Academies and Building Principals

From: Sue C. Carnell, Director
Office of School Excellence

Subject: Management of Students with Diabetes in the School Setting

Diabetes is one of the most common chronic diseases of childhood. The number of children with diabetes, who require accommodation during the school day to do blood glucose testing, have between meal snacks, and even to take insulin injections is increasing. The need for careful control and self-management of diabetes by the child/family is an essential component of care in order to prevent short and long term complications.

Communication between parents/guardians, school personnel, the student's health care providers, and the school nurse (if available) is important to successfully manage diabetes. This packet of materials contains sample forms that can be used by school personnel to facilitate the communication needed to enable the student with diabetes to successfully manage his/her disease and continue to achieve academically. The Management of Students with Diabetes Workgroup, chaired by Karma Common of the Michigan Department of Community Health and Pat Nichols of the Michigan Department of Education, trusts these materials will be useful to schools.

Schools should provide training to all school staff, including secretaries, bus drivers, and noon aides, about diabetes and its management. This training should include:

- information about the disease,
- the signs and symptoms of hypoglycemia and hyperglycemia,
- what to do in a medical emergency, and
- the special planning needed for the student with diabetes during school functions such as parties, field trips, participation in sports, and after school activities.

This training should take place annually for any school in which there is a student with diabetes, or as needed if a student is newly diagnosed with this disease. See the attached Resource List for persons who may be able to train or assist in finding trainers in diabetes.

Clear guidelines and procedures should be established by school administrators as to the roles and responsibilities of designated staff who will assist the student with diabetes with blood glucose testing, insulin injections or other needed health services in the school setting. Emergency plans need to be written and be accessible to designated staff in case of a hypoglycemic reaction, or suspected hyperglycemic onset. Specific training about health services necessary during the school day for individual students should be done by a licensed health professional.

Questions about this memorandum may be directed to Marilyn Schneider at (517) 373-7247.

DIABETES FACT SHEET

Diabetes is one of the most common chronic diseases of childhood. In the United States, approximately 124,000 children and youth under the age of 19 have diabetes. The number of children with diabetes who require accommodation during the school day to do blood glucose testing, have between meal snacks, and even to take insulin injections has dramatically increased. Medical science recognizes the need for careful control of this disease, and for self-management by the child of his/her disease as an important component of that control. Controlling diabetes means maintaining a balance between insulin, food and exercise. Diabetes is NOT a communicable or contagious disease. Diabetes is a chronic disorder that can result in immediate and long term complications such as damage to the eyes, kidneys, and vascular and nervous systems if not managed properly.

There are two types of diabetes: Type 1 diabetes is caused by an autoimmune disorder in which the insulin-producing cells of the pancreas are destroyed. Insulin is a hormone that is essential in allowing sugar to move into the cells and be used for energy by the body. People with type 1 diabetes must take insulin injections every day.

Type 2 diabetes in youth is a rapidly growing health problem. In this type of diabetes, the cells of the pancreas still produce insulin, but the cells may not respond properly to the insulin, or the insulin produced may not be sufficient to meet the needs of the body. Risk factors for this type of diabetes include obesity and sedentary lifestyle.

Children and adolescents are taught by their health care provider that diabetes is a self-managed disease. This means that the child or adolescent (depending upon the child's age and abilities) may be giving himself/herself insulin injections, monitoring his/her blood glucose levels with a glucometer, testing urine, keeping written records, and taking snacks as needed between meals in the school setting and at school functions. There are no medications other than insulin by injection approved for children with diabetes. Some physicians may be giving some oral medications in type 2 diabetes in youth, but treatment is individualized based on the student's needs.

The management of diabetes on a day-to-day basis includes maintaining a balance between insulin intake or production, food intake, and exercise and physical activity. All three (insulin, food, and activity) have a major effect on diabetes control and the prevention of acute complications such as hypoglycemia (low blood sugar) and hyperglycemia (high blood sugar). Both of these complications can occur during school hours, but a hypoglycemic reaction is the most common.

In the case of a hypoglycemic reaction, the student with diabetes has taken insulin, and either not eaten food in the amount needed or extra exercise or physical activity has increased the body's need for sugar for energy, thus leaving too much insulin in the system. The student with diabetes may recognize the early warning symptoms of a hypoglycemic reaction. In the early stages of hypoglycemia, the student can take food (juice, regular soda pop, hard candy, glucose tablets) to reverse the hypoglycemia. However, hypoglycemia can progress quickly and the student may lose consciousness. This would be a medical emergency and an injection of glucagon (a hormone that naturally releases sugar from the liver) and an immediate call for emergency medical care would need to be done. Never give an unconscious student anything by mouth – food or liquids. See attached *Signs of a Diabetic Emergency*.

Hyperglycemia generally is slower to develop, but school staff needs to be alert to the early signs and symptoms of this condition. In children, a minor illness such as a cold or the flu can upset the balance of insulin, food, and activity and result in a build-up of extra sugar in the blood stream. If a student tests his/her blood and it shows a high blood sugar reading, the student may need to do a test for ketones. Ketones are a product of the body using fat stores for energy when a lack of insulin doesn't allow the body to break down carbohydrates into sugars for energy. The test for ketones is done on a urine sample. A moderate or large reading (amount) of ketones requires immediate medical attention.

THE ROLE OF SCHOOLS IN HELPING THE STUDENT WITH DIABETES MANAGE HIS/HER DISEASE

1. Students with diabetes, under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, must be given "reasonable accommodation" in the school setting so that their disease can be managed successfully and their schooling not adversely affected by their disability or perceived disability.
2. Knowledge and training about diabetes and its control for total school staff, including support staff such as bus drivers, cafeteria workers, and noon aides, should become, at a minimum, an annual event in each school in which there is a student with diabetes. This training must include:
 - a. education about diabetes,
 - b. the management procedures that the student and/or school personnel will be responsible for during the school day,
 - c. the early warning signs of hypoglycemia and hyperglycemia,
 - d. what to do in case of hypoglycemia or hyperglycemia,
 - e. special planning needed for school functions such as parties, field trips, before and after-school activities, particularly those involving physical activity or exercise, and
 - f. reporting procedures for changes in the student's physical or emotional behavior and condition.

Designated staff who will have responsibility for services such as giving injections, doing blood glucose and ketone testing will need training specific to these procedures. This training should be done by a licensed health professional, and updated annually.

3. Communication between the student's parents/guardians, health care providers, and school personnel should begin as soon as the student with diabetes is identified. In the absence of school nursing or contracted nursing services, the principal or his/her designee should contact the parents to discuss the need for written physician's instructions and a care plan for the student with diabetes to be completed and returned to the school as soon as possible. A meeting with the parents/guardians may be necessary to clarify aspects of the student's management plan so that school personnel who will interact with the student throughout the school year can feel comfortable and competent about the student's condition. This is as important for high school students with diabetes as for younger students.
4. An easily accessible emergency care plan for the student with diabetes in case of a severe hypoglycemic reaction that clearly states what is to be done for the student as signs and symptoms appear.
5. Arrange for a "teachable moment" lesson for other students in the classroom of the student with diabetes about the disease. The "teachable moment" should be sensitive to the feelings of the student with diabetes.

School: _____ This information expires on June 30, _____

SCHOOL-BASED CARE PLAN for the STUDENT with DIABETES

Name: _____ Birth Date: _____

Address: _____

Parents or Emergency Contact: _____ Home Phone: _____

Work Phone: _____ Pager/Cell: _____

SYMPTOMS SPECIFIC TO STUDENT

Low blood sugar

1. _____
2. _____
3. _____

High blood sugar

1. _____
2. _____
3. _____

TO BE COMPLETED BY PHYSICIAN

The following activities will require supervision and/or assistance for _____ during the school day.

Please check all that apply.

☐ May self test?

☐ Blood glucose testing

Daily at _____
as needed per symptoms

☐ Blood glucose testing

☐ Target glucose range

☐ Low blood sugar range

☐ Intervention

☐ High blood sugar range

☐ Intervention

☐ Ketone Checks

If glucose levels over _____ mg/dl

☐ Administer Glucagon

For following symptoms _____

☐ Insulin administration

See attached schedule

☐ Snack

Daily at _____

☐ Snack

As needed

Training for the above procedures will be provided by: _____

Parent/Guardian Signature

Physician Signature

Address

Phone

This information expires on June 30, _____.

SCHOOL-BASED MANAGEMENT PLAN for the STUDENT with DIABETES

STUDENT
PHOTO

STUDENT INFORMATION

Student's Name: _____ Birth Date: _____

Grade: _____ Home Room Teacher: _____

Physical Education Days and Times: _____

Parents: _____ Phone : _____ Pager/Cell: _____

Physician: _____ Phone: _____

TO BE COMPLETED BY THE CHILD'S PHYSICIAN

IF BLOOD SUGAR RESULT IS THIS	PERFORM THIS ACTION

DESIGNATED BLOOD TESTING AREA IN SCHOOL _____
SNACKS TO BE EATEN IN CLASSROOM: ____ YES ____ NO _____

Closeby Designated Snack Area

COMMENTS: _____

Staff members trained to work with this student:

Name _____ Position _____

Name _____ Position _____

SCHOOL-BASED MANAGEMENT PLAN for a DIABETIC STUDENT

STUDENT
PHOTO

STUDENT INFORMATION

Student's Name: Bob Brooks Birth Date: 1/1/91

Grade: 3 Home Room Teacher: Ms. Smith

Physical Education Days and Times: M-W 9:30 am

Parents: Dan & Julie Brooks Phone: 317-222-5500 Pager/Cell: 810-310-5120

Physician: Dr. Shoe Phone: 810-310-5120

TO BE COMPLETED BY THE CHILD'S PHYSICIAN

IF BLOOD SUGAR RESULT THIS	PERFORM THIS ACTION
Below 50	1. Give 2 glucose tabs, 4 oz. high sugar drink, and cheese and crackers
	2. Recheck in 20-30 minutes
	3. Contact parent
51-79	1. Give 4 oz. juice
	2. Send to lunch
	3. Contact parent
80-180	1. Send to lunch
181-240	1. Send to lunch, encourage fluids
Above 240	1. Check ketones
	2. Contact parent
Unable to swallow, speak	1. Administer Glucagon

BLOOD SUGAR TESTING TO BE DONE IN ROOM Yes

SNACKS TO BE EATEN IN ROOM Yes

COMMENTS: _____

Staff members trained to work with this student:

Name _____ Position _____

Name _____ Position _____

SIGNS OF A DIABETIC EMERGENCY

LOW BLOOD SUGAR (HYPOGLYCEMIA)

ONSET CAN BE RAPID. MOST LIKELY TO OCCUR AT PEAK INSULIN ACTION TIMES, SUCH AS BEFORE LUNCH.

SIGNS:

**FAINTNESS/ WOOZINESS/ SHAKINESS
FATIGUE
SWEATING
DIZZINESS /WEAKNESS
PALE SKIN/CLAMMY SKIN
INAPPROPRIATE ACTIONS /CONFUSION
IRRITABILITY/MOOD CHANGES/ CRANKINESS
DIFFICULTY FOLLOWING INSTRUCTIONS
COMBATIVENESS
INCOHERENT SPEECH
UNCONSCIOUSNESS**

SYMPTOMS:

**MUSCLE CRAMPING
HUNGER
NERVOUSNESS
STOMACHACHE
BLURRED VISION /HEADACHE
CONVULSIONS**

HIGH BLOOD SUGAR (HYPERGLYCEMIA)

ONSET MAY BE GRADUAL OR RAPID AND CAN LEAD TO SEVERE ILLNESS OR EVEN DEATH

**EXCESSIVE THIRST AND FREQUENT URINATION
BLURRED VISION
DROWSINESS/FATIGUE
ABDOMINAL PAIN
NAUSEA
VOMITING
LABORED BREATHING AND
FRUITY SMELLING BREATH**

CHILDREN AND YOUTH THAT DISPLAY THESE SYMPTOMS SHOULD BE RESPONDED TO IMMEDIATELY. EACH CHILD MAY REACT DIFFERENTLY. YOU SHOULD HAVE A LIST OF SYMPTOMS EACH CHILD MAY EXHIBIT ON FILE ALONG WITH HOW TO RESPOND. FOR ANY OF THE ABOVE SIGNS & SYMPTOMS, REPORT INCIDENT TO THE CHILD'S PARENT/GUARDIAN.

IF THE CHILD IS VOMITING AND IS UNABLE TO TAKE FLUIDS, CONVULSING OR BECOMES UNCONSCIOUS, OR IF YOU ARE UNCERTAIN OF WHAT TO DO

CALL 911 AND THE CHILD'S PARENT /GUARDIAN

DIABETES RESOURCE LIST

Staff Inservice Training Resources

Upper Peninsula Diabetes Outreach Network (UPDON)
102 West Washington
Marquette, MI 49855
906-228-9203
annconst@up.net

Northern Michigan Diabetes Outreach Network (TIPDON)
480 West Mitchell
Petoskey, MI 49770
231-348-8596
tipdon@racc2000.com

East Central Diabetes Outreach Network (ECDON)
1430 North Center Road
Saginaw, MI 48603
517-249-0170
ecdon@cris.com

Ten Counties in Central and Western Michigan Diabetes Outreach Network (TENDON)
3950 Lake Michigan Drive, NW
Grand Rapids, MI 49544
616-735-1118
tendon@isesrv.net

Southern Michigan Diabetes Outreach Network (SODON)
658 East Chicago Road
Coldwater, MI 49036
517-279-2267
sodon@cbpu.com

SouthEast Michigan Diabetes Outreach Network (SEMDON)
2727 Second Avenue
Detroit, MI 48201
313-965-2351
semdon@nethappens.net

Michigan Diabetes Outreach Networks
www.diabetes-midon.org

Resources -Written

American Diabetes Association, *Clinical Practice Recommendations 2000*, Diabetes Care, January 2000, page S100.

American Diabetes Association, *Wizdom, A kit of wit and wisdom for kids with diabetes (and their parents), For Parents Only*, www.ada@diabetes.org; 1-888-342-2383.

American Diabetes Association, *Wizdom, A kit of wit and wisdom for kids with diabetes (and their parents), For Kids Only*, www.ada@diabetes.org; 1-888-342-2383.

American Diabetes Association, *Clinical Practice Recommendations 2000*, Diabetes Care, January 2000, pages S100-103.

Arizona Early Childhood Diabetes Coalition, *Diabetes and Child Care, A Guide to Serving Children with Diabetes in the Child Care Setting*, Pima County Health Department, Division of Public Health Nursing, Tucson, Arizona, 520-740-8611.

Chase, H. Peter, MD, *Understanding Insulin Dependent Diabetes*, University of Colorado Health Sciences Center, 9th Edition, 2000.

Recommendations for Management of Diabetes for Children in School, Vermont Department of Health, Diabetes Control Program, 802-865-7708, *Recommendations for Management of Diabetes for Children in School*.

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Control and Prevention, *Take Charge of Your Diabetes*, 2nd Edition, 1997.

WEB Resources

www.mdch.state.mi.us/pha/diabetes/index.htm

www.diabetes.org

www.niddk.nih.gov

www.whittier.org

www.childrenwithdiabetes.com/index_cwd.htm

www.diabetesgourmet.com

www.diabetestown.com/helpfor parents/index.html

www.eatright.org

www.cdc.gov/diabetes

Michigan Department of Community Health Diabetes, Dementia, and Kidney Section: diabetes control project – resources such as outreach networks, self-management programs; local and state contacts.

American Diabetes Association: wealth of information, articles, and tips.

National Institute of Diabetes and Digestive and Kidney Diseases: publications, articles, resources, and statistics.

The Whittier Institute for Diabetes (Scripps, California): diabetes management, ongoing research, on-line resources, forum to ask questions.

On-line community for kids, families, and adults with diabetes: books, resources, conferences, recipes, chat rooms.

Diabetes Gourmet Magazine : support groups, books, recipes, general health information.

Grant's Diabetes Town: tips for parents, teachers, babysitters; forms for management and care, holiday tips.

American Dietetic Association: healthy eating, food and nutrition guide.

Centers for Disease Control and Prevention: public health presentation of diabetes, links for funding; links to state programs.

Resource Organizations

American Diabetes Association
30600 Telegraph Road, Suite 2255
Bingham Farms, MI 48025-4532
1-888-342-2383
www.ada@diabetes.org

Juvenile Diabetes Research Foundation
4362 Cascade Road, SE
Grand Rapids, MI 49546
616-942-5487

National Kidney Foundation of Michigan
2305 South Huron Parkway
Ann Arbor, MI 48104
1-800-482-1455

Juvenile Diabetes Research Foundation – Metro Detroit Area
29350 Southfield Road
Suite 42
Southfield, MI 48076

Parent Support Groups

For more information about support groups please contact the Michigan Diabetes Outreach Network at 517-335-8445 or call your regional Diabetes Outreach Network (MDON). MDON also has a web site with a listing of support groups: www.diabetes-midon.org

Members of the Management of Students with Diabetes in Schools Workgroup

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Diabetes Control Program, Division of Chronic Disease and Injury Control
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Frances Luker, RN, BSN, NCSN
School Nurse, Hartland Consolidated Schools
President, Michigan Association of School Nurses

Jean Hare, RN, MPA, CDE
Director of Southern Michigan Diabetes Outreach Network

Kelly Adams
Education Consultant
National Kidney Foundation of Michigan

Grenae Dudley, Ph.D.
Board Member
Juvenile Diabetes Research Foundation, Metro Detroit Chapter
Parent of Child with Diabetes

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