Diabetes Management

A Protocol For Schools

To be used in conjunction with the following documents:

a) Ministry of Education Policy Program Memorandum #81
b) Board Operating Procedures: Administration of Prescribed and Emergency Medication, Elementary and Secondary

Revised: 2009

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Diabetes Management: A Protocol for Schools

The *Diabetes Management: A Protocol for Schools* is a guideline to be used by school and community personnel to support and ensure the safety of children with diabetes in our schools. The development of this document has been a collaborative project involving representatives from the Halton District School Board, the Halton Catholic District School Board, Region of Halton departments of Health and Social and Community Services, Community Care Access Centre of Halton and the Canadian Diabetes Association and the Trillium Health Sciences Centre, Diabetes Unit**.**

Purpose

1. To provide school personnel in the Halton District School Board and the Halton Catholic District School Board with information and guidelines regarding the requirements of care for students with diabetes;

2. To provide information about the management of risks associated with diabetes for all involved parties

3. To develop an information and resource manual for school personnel about the management of diabetes in school children.

Introduction

Diabetes mellitus is a disease resulting from a lack of insulin action. Insulin is a hormone produced by the pancreas. Without insulin, carbohydrates (starch and sugars) in the food we eat cannot be converted into stored energy (called blood glucose or "blood sugar"[1]) required to sustain life. Instead, unused glucose accumulates in the blood and spills out into the urine.

The majority of people with diabetes develop the problem in adulthood. They can still produce some insulin and may be able to control their diabetes by diet alone or with oral medication.

Children and adolescents with diabetes are different; they are unable to make any insulin and must take insulin injections each day.

At this time, no one knows why children and adolescents develop diabetes. It is known, however, that this disease is not the result of poor eating habits nor is it infectious.

[1] *The terms 'blood glucose' and 'blood sugar' are interchangeable*

Philosophy of Diabetes Management

The ultimate goal of diabetes management within the school setting is to have the child be independent with their care. This independence includes the specific management of diet, activity, medication (insulin) and blood sugar testing, as required. Independence of care also includes the development of self-advocacy skills and a circle of support among persons who understand the disease and can provide assistance as needed.

Children are diagnosed with diabetes at various stages of their lives. Some will be very young, and others older and more mature, some will have special needs. The goal for all of these children is to become as independent as possible, as soon as possible in managing their diabetes. The school role is to provide **support** as the child moves from dependence to independence and to create a supportive environment in which this transition can occur. Nevertheless, the ultimate responsibility for diabetes management rests with the family and the child.

It is important that the school develop emergency procedures for teachers who have a child with diabetes in their class. Sample forms are contained in the appendix of this document.

General Information

"Managing diabetes is a full time job for the family and student with diabetes. Teachers and school personnel are in a very special position, and their understanding of the unique needs of the student with diabetes is important."- Jim Whitson, Chair – Ontario Division, Education Task Force, Canadian Diabetes Association

School-aged children with Type 1 diabetes spend 30 to 35 hours a week in the school setting. This represents more than half of their waking weekday hours. School personnel can support a student with diabetes by learning about the disease and by having frequent, open communication with parents and the child. This will help to reduce apprehension and anxiety in the child and parent, provide a positive attitude toward the child's participation in school activities and contribute to the student's well being.

When the blood glucose is in proper balance, the child or adolescent will behave and achieve as others. In terms of academic performance, physical activity, behaviour and attendance at school, the teacher's expectations of students should be the same as if he or she did not have diabetes.

The Legal Considerations

The focus of this document is preventative in nature. In partnership with parents/guardians, the student and school staff, this Diabetes Management Protocol outlines roles, responsibilities and the legal context within which specific action(s) shall be taken to protect the health and welfare of students with diabetes in our

schools. The legal context for action is formed by a variety of legal principles, precedents, and interpretations drawn from several areas of law.

Duty of care is a legal principle that:

- identifies the obligation of individuals and organizations to take reasonable measures to care for and to protect those for whom they are responsible; and
- identifies an appropriate level or standard of care.

The concept of duty of care is absolutely fundamental to caring for children in schools (ex. First aid provisions). If clients (students, employees) are vulnerable, cannot protect, defend or assert themselves, either permanently or temporarily (as can occur in an accident, first aid situation, and diabetic coma), the duty becomes more intense and the standard, higher. Failure to take reasonable precautions could result in liability if a student suffers severe hypoglycemia while under a teacher's care and supervision.

In **common law,** the level of care teachers must provide students is based upon, what is deemed, the special relationship that exists between teachers and students. This relationship is akin to the relationship between parents and their children. **Case law** precedent has already determined that teachers have a duty to administer oral medication in non-emergency situations or make alternative arrangements where there is an expectation by parents that the medication will be administered.

Teachers have a legal responsibility to shelter students from harm by providing the level of care and supervision that could reasonably be expected of a prudent parent.

> "to give assiduous attention to the health and comfort of the pupils, to the cleanliness, temperature and ventilation of the school, to the care of all teaching materials and other school property, and to the condition and appearance of the school buildings and grounds."
> Education Act, s.265(j)

At the present time, Program/Policy Memorandum #81 (1984) does not prevent school staff from administering injections in an emergency but, neither does it impose an obligation to do so.

The board's liability policy provides coverage for employees acting within the scope of their duties with the board. Thus, all school staff who administer first aid to a student who is hypoglycemic within the school or on school activities, are covered.

DIRECTIONS: to School Personnel

It is important to distinguish between non-emergency and emergency situations.

Non-Emergency Situations

In non-emergency situations, including routine care, students with diabetes or their parents will administer the insulin injections.

Emergency Situations (life threatening)

In emergency, life-threatening situations, where a student suffering from low blood sugar is unresponsive or unconscious and is unable to self-administer the appropriate treatment, the response of school staff shall be a 911 call for Halton Emergency Medical Services.

The use of glycogen injections (Glucagon) in these situations will not be administered by school staff.

Emergency Medical Services personnel require the following, if available:

- student's name
- date of birth
- OHIP number
- Emergency contact information
- medical history – available on the OSOR card and the Emergency Treatment Form
- observations about what the student was doing prior to the event
- medications and any treatment prior to EMS arrival.

Definitions: Three Main Types of Diabetes

Type 1 Diabetes usually affects children and adolescents and is the focus of this document. In Type 1 Diabetes, the pancreas is unable to produce insulin and injections of insulin are essential.

Type 2 Diabetes comprises 90% of diabetes in Canada. It usually develops in adulthood, although recently increasing numbers of children in high-risk populations are being diagnosed. In Type 2 diabetes the pancreas may produce some insulin, but the body is unable to use the insulin that is produced effectively. Type 2 diabetes may be controlled with diet and exercise or with oral medication. Eventually, people with Type 2 Diabetes may need insulin.

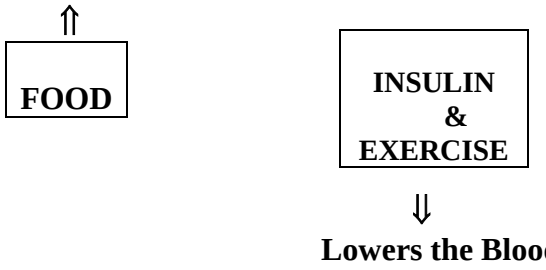
Gestational Diabetes affects 4% of pregnant women and usually goes away after the baby is born, however, gestational diabetes is a precursor to Type 2 diabetes between 40% and 60% of the time.

Type 1 Diabetes – The Balancing Act

The treatment of diabetes is a balancing act.

Food on the one side increases the amount of glucose in the blood. Exercise and insulin on the other side lower the blood glucose level by allowing the glucose to be used for energy.

Raises the Blood Sugar



The goal of the balancing act is to keep the blood glucose levels in a healthy range.

His or her doctor determines the target range for each individual child. The parents should inform the school staff of the child's optimal levels if the child is not independent with diabetes management. Most students will be aware of their blood sugar targets.

When in doubt, treat !

Why is it so important to achieve optimal blood sugar control?

Recent research (Diabetes Control and Complications Trial (DCCT) – 1993 and the United Kingdom Prospective Diabetes Study (UKPDS) – 1995) has provided evidence that good blood sugar control can reduce the risk of complications.

Such complications – kidney disease, blindness, limb amputation and sexual dysfunction not only take their toll in human suffering but cost Canada's health care system over 9 billion dollars annually for direct and indirect health care services.

Issues of Concern

Adjustment period after diagnosis
When a child has recently been diagnosed with diabetes, the parents usually feel shocked and scared. They also may feel numb, sad, guilty and angry. The fact that diabetes is a serious disease with significant complications and that their child will have to live with the complexities of its management for the rest of their lives (or until a cure is found) is quite overwhelming. The first year after diagnosis may be difficult while the family and student works with the Diabetes Health Care Team to adjust to all they have to learn and do to cope with life with diabetes.

School personnel can help by:

- Learning as much as possible about diabetes at http://www.diabetes.ca
- Communicating openly with parents
- Providing special considerations as suggested in the Canadian Diabetes Association publications, "Kids with Diabetes in School" and "Kids with Diabetes in Your Care"
- Helping other students in the class understand diabetes. This might be done by the parent, the Canadian Diabetes Association, or the student himself or herself.

An added resource is the Diabetes Nurse Educator at the Joseph Brant Hospital Paediatric Diabetes Clinic who will come to the school and provide staff with general and specific guidance.

Independence versus protection

Parents and school personnel need to protect the child while encouraging him or her to develop independent diabetes management skills.

Children must learn to manage their own diabetes. They can do it. Even very young children can share the work of managing diabetes. How much a student can do depends on his or her age, how long he or she has had diabetes and any disabilities or special needs.

Hypoglycemia (Low blood glucose) – an Emergency

Hypoglycemia is an emergency situation caused by LOW blood sugar. The situation can develop within minutes of the child appearing healthy and normal.

When in doubt, TREAT!

Causes	Symptoms	Treatment
Low blood glucose usually develops as a result of one or more of the following: • insufficient food due to delayed or missed meal • more exercise or activity than usual without a corresponding increase in food; and/or • too much insulin	A person who is experiencing hypoglycemia will exhibit some of the following signs: • cold, clammy or sweaty skin • pallor • shakiness, lack of coordination (eg. deterioration in writing or printing skills) • irritability, hostility, and poor behaviour • a staggering gait • eventually fainting and unconsciousness In addition the child may complain of: • nervousness • excessive hunger • headache • blurred vision and dizziness • abdominal pain and nausea	It is imperative at the first sign of hypoglycemia you **give sugar immediately.** If the parents have not provided you with more specific instructions which can be readily complied with, give: • 6 oz/125 ml of regular pop (not diet pop); or • 6 oz./125 ml of fruit juice; or • 3-4 teaspoons/10 ml or 3-4 packets of sugar; or • 4-5 glucose tablets; or • 3-4 teaspoons/10 ml honey

It may take some coaxing to get the child to eat or drink but you must insist; however, if the child's level of consciousness is impaired enough that he or she is not cooperating, then a 911 call must be made for EMS.

If there is no noticeable improvement in about 10 to 15 minutes repeat the treatment. When the child's condition improves, he or she should be given

solid food. This will usually be in the form of the child's next regular meal or snack.

Until the child is fully recovered he or she should not be left unsupervised. Once the recovery is complete the child can resume regular class work. If, however, it is decided that the child should be sent home, it is imperative that a responsible person accompany him or her.

Parents should be notified of all incidents of hypoglycemia. Repeated low blood glucose levels are undesirable and unnecessary and should be drawn to the parent's attention so that they can discuss the problem with their doctor

If unsure whether the child is hypoglycemic, **always give sugar**! A temporary excess of sugar will not harm the child but hypoglycemia is potentially serious.

NOTE: Do not give food or drink if the child is unconscious. Roll the child on his/her side and seek medical assistance immediately.

Kids With Diabetes In Your Care – Canadian Diabetes Association

Mild to moderate hypoglycemia is common in the school setting. School personnel need to know the causes, symptoms and treatment of hypoglycemia. Symptoms of mild to moderate hypoglycemia can be misinterpreted by school personnel. The nature of the emergency is often misunderstood, placing a student at serious risk. The Signs and Symptoms of Hypoglycemia chart in the appendix is a guide to be consulted.

Severe Hypoglycemia will occur in 3-8/100 students with diabetes per year and occur most commonly at night. Severe hypoglycemia is rare in the school setting. However, given the current treatments for diabetes, hypogylcemia may occur during daytime hours.

In severe hypoglycemia, the student may be unconscious or conscious. There may be seizures. If the student is unconscious, having a seizure or unable to swallow, **do not** give food or drink.

- Roll the student on his/her side
- Call 911 or emergency medical services
- Inform parents or guardians

Glucagon (Glycogen)

Glycogen is an emergency drug that is used to treat hypoglycemia. It should only be used under the direction of a physician. Glycogen is a naturally occurring substance produced by the pancreas and it enables a person to produce his or her own blood glucose to correct a hypoglycemic state.

School staff should be educated about the potential for hypoglycemia in a student with diabetes; however, school staff will not be giving glycogen injections.
In an emergency situation, where a student is severely hypoglycemic, a glycogen injection may be done by trained Halton EMS paramedics. It is important to note that hypoglycemia presenting in a school setting would not normally be an immediate life-

threatening condition – that is, Halton ambulances with advanced care paramedics can respond immediately. Paramedics will make the proper assessment and provide treatment, as required. For specific guidelines for sports, field trips and other co-instructional activities, please see page 11.

Hyperglycemia – High Blood Glucose

Hyperglycemia is not an emergency condition requiring immediate treatment. However, prevention of hyperglycemia is key to delaying or avoiding serious complications. The parents and the child's physician need to be aware of persistent hyperglycemia.

High Blood Glucose

Children with diabetes sometimes experience high blood glucose. The earliest and most obvious symptoms of high blood glucose are increased thirst and urination. If noticed, these should be communicated to the parents to assist them in the long-term treatment. They are not emergencies that require immediate treatment.

Causes

High blood glucose often develop as a result of one or more of the following:

- too much food;
- less than the usual amount of activity;
- not enough insulin; and/or
- illness.

Many times, however, there does not seem to be an obvious explanation.

Kids With Diabetes In Your Care – Canadian Diabetes Association

In the classroom, the behaviour of students with hyperglycemia may be taken for misbehaviour (i.e. frequent requests to go to the bathroom or requests for frequent drinks).

Interference with school activities

When blood sugar levels are outside the target range (i.e. hypoglycemia or hyperglycemia) the student's learning, behaviour and participation may be affected.

Hyperglycemia and hypoglycemia may also affect the students' behaviour. However, having diabetes is not an excuse for inappropriate behaviour.

Sick Days

The Sick Child

Children with diabetes are no more susceptible to infection or to illness than their classmates. They do not need to be in a special "health class" at school. Their attendance record should be normal.

When children with diabetes become ill with the usual fevers and other childhood sicknesses the blood glucose balance is likely to be upset. Careful monitoring with blood glucose and urine testing, a fluid diet and extra insulin may be required. Such illness management is the responsibility of the *parents,* not you.

When children with diabetes become ill at school, the parents should be notified immediately so that they can take appropriate action.

Vomiting and inability to retain food and fluids are serious situations since food is required to balance the insulin.

If the child vomits, contact the parents immediately. If unable to reach the parents, take the child directly to the nearest hospital.

Kids With Diabetes In Your Care – Canadian Diabetes Association

Blood Glucose Self-Monitoring: Testing Blood Sugar

Why do It?
Monitoring of Blood Glucose is a tool one uses for achieving the target blood sugar levels.

Blood sugar levels will change with eating, physical activity, stress, or illness. Sometimes the blood sugar fluctuates for no apparent reason.

Knowing blood sugar levels will:
- Help the student understand the balance of food, insulin and exercise
- Help the doctor adjust insulin and food
- Help avoid the consequences of hypoglycemia and hyperglycemia.
- Monitoring will give early warning without waiting for the onset of symptoms.

Equipment
A small meter, which runs on batteries (There are various meters on the market)
Test strips
Lancet device
Lancets
Log book

Procedure for Blood Glucose Monitoring
- The student washes hands with warm water and soap
- Inserts a lancet in the lancet device
- Places a test strip in the meter
- Pokes the side of the finger tip and obtains a drop of blood
- Places the blood on the area indicated on the test strip
- Waits for 5 to 45 seconds, depending upon the meter
- Notes the reading and records in log book or automatically recorded in meter

Timing varies with the individual and is done according to the advice of the child's physician and parents. Usually the blood glucose is tested before meals, before bed and before/during/after exercise.

Ketone Monitoring

This monitoring is not usually done daily as with blood glucose testing. However, in rare cases, some students with diabetes monitor their ketone levels according to guidelines prescribed by their healthcare professional. Teachers and other school personnel have no responsibilities in the actual procedure.

However, it is important for the teacher:

a) To understand and accommodate the student who needs to monitor ketones.

b) To call the parents immediately if any student with diabetes becomes ill, especially with vomiting (see #5 below)

What Teachers Should Know About Ketones:

1. Hyperglycemia (see High Blood Glucose) may result in ketones in the blood and urine.
2. In hyperglycemia, glucose stays in the blood and the body cannot use it for fuel. The body then breaks down fat for fuel. This process produces ketones as a by-product. If ketone levels continue to rise the child's blood becomes acidic.
3. Rising ketone levels can spiral into the potentially dangerous condition known as Diabetic ketoacidosis (DKA).
4. Left untreated DKA can kill.
5. DKA usually develops over several days, but frequent vomiting can cause the ketones to build up in just a few hours. DKA can develop within a day in adolescents who have not taken insulin for that day.
6. The flu and stomach viruses are common contributors to DKA.
7. Students on insulin pumps develop DKA more quickly than if they were using injected insulin because they have no long-acting insulin to tide them over.
8. High blood glucose plus ketones may mean that the student needs more insulin than their usual regimen calls for.
9. Each student should have individualized guidelines explaining how to handle sick days and what to do if ketones are on the rise.

Example:

"…Pieter Van Staalduinen, a ten year old with type 1 diabetes, felt dizzy while sitting in class at his school in Calgary. With the strips he carries with him at all times, Pieter went to the bathroom and used one of the strips to test his urine. Sure enough, his ketone levels were high.

He called his father, who left work and drove to Pieter's school, gave him a shot of insulin, hung around for a while, then checked Pieter's ketone levels again. Normal range. Father and son went their separate ways, having nipped a potentially serious complication of type 1 diabetes in the bud."

Insulin Injections

Recent advances in medical devices allow people with diabetes to choose the way they administer their insulin:

- Conventional syringe and vial method
- Insulin pen
- Insulin pump

Most insulin injections are administered outside school hours – before breakfast and supper and at bedtime. However, the insulin regimen varies with the individual and some students do require an insulin injection before lunch.

Student Responsibility for Diabetes Management

If a student is not taking responsibility for his or her diabetes care it may be due to other factors, such as language, cognitive ability, maturity level, behavioural issues and psychosocial barriers. This calls for communication between parents, teachers and possibly other professionals.

Sports and Co-Instructional Activities

Children with diabetes should be encouraged to participate in as many activities as they choose. They should not be excluded from school field trips. School sports and other co-instructional activities can promote self-esteem and a sense of well-being.

For children who wish to participate in vigorous physical activity, good planning is essential so that the blood glucose balance is maintained. The major risk of unplanned vigorous activity is low blood glucose. This can be prevented by eating additional food.

Parents should be notified of special days that involve extra activity so that they can ensure that the child has extra food to compensate.

Sports or other activities that take place during mealtime require extra planning. Timing of meals and snacks may be varied and the insulin dose adjusted so that children with diabetes can safely participate.

It is advisable that both the parent and the child with diabetes carry some form of fast-acting sugar such as glucose tablets or juice boxes on outings or sports events.

It is critical that the child's teachers, especially Physical Education teachers and coaches, are familiar with the symptoms, treatment and prevention of hypoglycemia.

Appendices

Appendix A

Sample Letter to Parents/Guardians

Date:

Dear Parents/Guardians:

RE: SCHOOL PROTOCOL FOR DIABETES TREATMENT

To be prepared for your child's diabetic needs and in case of low blood glucose during the school day, please refer to the attached information and forms.

Request and Consent – Diabetes Interventions
Please read through this form and complete the appropriate sections. Return the form to your child's school principal prior to your child's start of school.

Type 1 Diabetes: Hypoglycemia Emergency Treatment Form
Please complete three (3) copies of this form with a recent photo of your child (minimum 2"x3" head and shoulder shot). These forms will be posted in the staff room, health room and other appropriate locations in the school.

Parent/Guardian Responsibilities Checklist
Please review your responsibilities outlined on the checklist. If you have any questions, please contact the school principal.

Student Responsibilities Checklist
Please review the contents with your child.

Call the school to arrange a meeting with your school principal and your child's classroom teacher prior to your child beginning school. Working together, we endeavour to provide the safest possible learning environment for your child.

Sincerely

Principal

Appendix B (1)

REQUEST AND CONSENT
DIABETES INTERVENTIONS

Student's Name_____Teacher:_____
Birth Date: ____/____/____/ Health Card #_____
Address:_____
(Street) (City) (Postal Code)

I/WE/Parents/Guardians understand that:

a) Teachers and principals and other school staff are not health professionals and have no more information about the medical condition of my child other than that which has been provided to them in writing by myself or by the child's doctor. They are not experts in recognizing the symptoms of my child's medical condition or in treating it.

b) To the extent he/she is able, my child has been trained by me or by health professionals, to recognize his/her own need for intervention/medication and to respond to it by requesting intervention or by self administering the appropriate medication.

c) Where practical, my child is responsible for the necessary medication and apparatus.

d) I/We are responsible for ensuring that:
- there is a supply of fast acting sugar (oral glucose/orange juice etc) at the school
- blood glucose monitoring items are contained in a safe container, labelled with my child's name, for transport and storage in class
- insulin injection items are contained in a safe container, labelled with my child's name.
- We have informed the teacher that for incidents relating to the diabetes I/we wish to be contacted regarding the following type(s) of incident(s):

_____
_____

PLEASE NOTE:

Neither the school administrator nor the staff is responsible for:
- insulin injections
- storing of insulin overnight
- determining procedure for low blood glucose count
- providing a supply of fast acting sugar (oral glucose, orange juice, etc.)
- Adminstration of glycogen injections (Glucagon)

In the event of an emergency (severe hypoglycemia incident), I authorize the school staff identified to obtain emergency services and to authorize such emergency

treatments as is necessary. I agree to assume responsibility for all costs associated with medical treatment.

I/we give permission that the hypoglycemia Emergency Treatment Form with the picture of my child can be posted in appropriate locations in the school.

I have reviewed the Diabetes Management Parent and Child Responsibilities and the School Responsibilities in the package.

Parent:_____ Date:_____

Appendix B (2)

HYPOGLYCEMIA
EMERGENCY TREATMENT FORM

Students Name:_____
Classroom Teacher:_____ STUDENT PICTURE

PARENT/EMERGENCY CONTACTS:
(Prioritize Calls – 1-2-3) and

1.Parent_____(H)_____(w)_____

2. Parent_____(H)_____(W)_____

3. Other_____(H)_____(W)_____
(names – print) (telephone)

Daily Blood SugarTesting Time(s): _____

EMERGENCY TREATMENT FOR HYPOGLYCEMIA

SIGNS AND SYMPTOMS:
Sweating Trembling Dizziness Mood changes
Hunger Headaches Blurred Vision Extreme tiredness/paleness
Other, please specify_____

OPTIMUM LEVEL (RANGE) OF BLOOD SUGAR is _____

Location of Sugar Treatment WITH STUDENT ___ OTHER_____

WHEN IN DOUBT - TREAT

SELECT ONE TREATMENT (see student's treatment chart in their blood sugar testing kit), PROVIDED BY PARENT, FROM THE FOLLOWING:

4oz. (125 ml) of fruit juice/drink (junior juice box) OR
2-3 tsp (10-15 ml) of sugar (3-4 packets) OR
4oz. (125 ml) of regular pop (not diet type) OR
2-3 tsp (10 – 15 ml) of honey OR
3 glucose tablets OTHER _____

CALL PARENTS TO INFORM THEM

Wait 10 – 15 minutes. If there is no improvement, repeat the above treatment.

DO NOT LEAVE THE STUDENT ALONE.

If the student is unconscious, having a seizure or unable to swallow DO NOT give food or drink

***Roll the student on his/her side**
***Call 9-1-1**
***Inform parents or guardians**

DIABETES STUDENT MANAGEMENT PLAN

NAME OF STUDENT _____ , _____ **CLASSROOM TEACHER** _____
Last name First Name .

ROUTINE	MANAGEMENT
1. BLOOD SUGAR CHECKING ☐ My child can independently check blood sugar / read meter ☐ My child needs supervision to check blood sugar / read meter	**Parent please check appropriate *routine* blood sugar checking times:** **Balanced Day** **or** **Regular Day** ☐ **Before 1st nutrition break (time)** ☐ **Before 2nd nutrition break (time)** ☐ **Before Morning Break (time)** ☐ **Before Lunch (time)** ☐ **Before Afternoon Break (time)** Healthy blood sugar range _____ *Call parent if blood sugar* _____ _____ _____
2. NUTRITION BREAKS	**1. Student must be able to eat on time** **2. Student must be able to eat <u>all of the required food</u> prepared by parent at each break.** **3. Supervision may be required** ***Communication with the parent if the child does not eat required food is important*** _____
3. INSULIN ☐ My child does not take an insulin injection at school ☐ My child takes insulin at school ☐ by injection. ☐ by insulin pump ☐ Insulin is given by ☐ Child ☐ Parent ☐ Nurse	Insulin by injection / insulin pump to be administered at the following times **Balanced Day** **or** **Regular Day** ☐ **Before 1st nutrition break (time)** ☐ **Before 2nd nutrition break (time)** ☐ **Before Morning Break (time)** ☐ **Before Lunch (time)** ☐ **Before Afternoon Break (time)** **NOTE:** Educators do not give injections or operate insulin pumps _____ _____ _____
4. EXERCISE PLAN (To help prevent a low blood sugar).	Please indicate what your child must do prior to exercise to help prevent a low blood sugar (i.e. take juice) **1. Before exercise : _____** _____ **2. During exercise:** _____ **3. After exercise:** _____ Child's blood testing meter kit and fast acting sugar should always be on hand during exercise activities
5. ILLNESS	Call parent if student vomits. If parents not reached within 30 minutes, call 911 to transfer to nearest hospital. Inform EMS, student has Type 1 diabetes.
6. SUPPLIES TO BE KEPT AT SCHOOL **(RESPONSIBILITY OF THE PARENT)**	☐ Fast acting sugar, carbohydrate snack in emergency – "low kit". ☐ Blood glucose meter and test strips, lancets. ☐ Insulin pen, pen needles or syringe, insulin (in case of pump failure). Location: _____

This personal information is being collected, used and disclosed to school staff and volunteers in accordance with the Personal Health. Information Protection Act, Municipal Freedom of Information and Protection of Privacy Act, Education Act, for the purpose of addressing the needs of the student with type 1 diabetes. I agree that the school may post my child's picture, take emergency measures and share this information as necessary with the school staff and health care providers.

Date:_____ Parent's signature: _____

Appendix C (1)

SCHOOL ADMINSTRATORS RESPONSIBILITIES CHECKLIST:

ADMINISTRATIVE AND OPERATIONAL PROCEDURES:

- Process in place, to facilitate parents receiving, completing and returning the following forms prior to the child's first day of school (when possible):
  - Request and Consent – Diabetes Interventions
  - Type 1 Diabetes – Hypoglycemia Emergency Treatment Form (3)
  - Introductory information letter to parents. (not to be returned)
  - Parent/Guardian Responsibility For Their Diabetic Child (not to be returned)
  - Student Responsibility for Diabetes Condition (not to be returned)

- During registration dates throughout the school year – provide parents of child(ren) who indicate their child has diabetes – copies of the above information forms and forms to complete.

- Survey parents in September newsletter for children who have diabetes and have not identified their child to the principal to do so immediately.

- Provide the Board's Transportation Department with a list of students with diabetes riding the school bus. Complete and send required form as soon as reasonably possible.

- Receive and review the completed 'Request and Consent – Diabetes Interventions' form for the child with diabetes and from the information develop a plan of action using the Board's/school's diabetes protocol along with the child's parents and classroom teacher.

AWARENESS AND COMMUNICATION:

- Convene a meeting with parents of the child with diabetes, and appropriate school staff (classroom teacher, subject teachers etc) to gather medical information related to the diabetic condition:
  - special needs or concerns regarding the health and care of the child
  - typical signs and treatment of low blood glucose
  - protocol for meals and snack times
  - when the school is to contact the parents (eg. after incidents of moderate or low blood glucose, low reading on the glucose blood monitoring, not finishing meals/snacks.)
  - review the school guidelines concerning: causes, prevention, identification and treatment of hypoglycemia.

- Convene a meeting (early in school year) of all school staff to identify students with diabetes and outline the Board's/school's protocol for identification, prevention and treatment of low blood glucose (hypoglycemia).

- Provide inservice training for school staff to prepare those involved to respond effectively to hypoglycemia incidents and other emergency situations.

- Ensure process in place where a student with diabetes, new to the school or newly diagnosed, who arrives at the school during mid term is identified to all school staff

- Ensure that the diabetic child's Emergency Treatment Forms are posted in required locations (staff room, health room, classroom etc.)

- Provide teachers with resources (human, video, print etc) to assist their efforts in making the students in their class aware of what diabetes is.

- Inform School Council of school diabetes protocol to increase community awareness of diabetes and board protocol for management

BLOOD GLUCOSE MONITORING/INSULIN INJECTION

- Provide a safe, hygienic, private space or space where child is comfortable in the school for students to perform self-blood-glucose monitoring and insulin injections throughout the school day.

- Provide for suitable supervision for students (where necessary).

- Follow Board procedures for safe disposal of sharps (injection devices), lancets and testing strips.

- Follow Universal Precautions for blood and bodily fluid protocol where applicable.

- Awareness of ketone monitoring, if applicable for a specific student

TREATMENT:

DIET REQUIREMENTS:

- Provide for a secure, accessible and appropriate place to store emergency food supplies (oral glucose, orange juice etc), throughout the school (eg. homeroom, gym, principals office etc.)

- Provide opportunities for fast acting sources of sugar to be taken by students anywhere on school property, on buses or during school sanctioned activities. (School rules may have to be relaxed)

- Must endeavor to ensure that students eat all meals and snacks fully, where applicable, and on time. Be flexible with time requirements for eating – child with diabetes may
  need more time

- Provide for communication to parents, where requested, if child is unable to eat or when student does not finish meal.

- Provide procedures to communicate to parents when new supplies of fast acting sugar are required.

EMERGENCY PROCEDURES:

- Procedure in place where appropriate school staff contact parents:
  - immediately after treatment of moderate or severe low blood glucose
  - when student is unable to eat or vomits

- Ensure that contact names and numbers are kept up to date for each student

- Follow the emergency treatment protocol as outlined on the Type 1 Diabetes – Hypoglycemia Emergency Treatment Form.

- Simulate a hypoglycemia emergency – similar to a fire drill – to ensure that all elements of the emergency treatment plan is in place and that everyone knows their role and what to do.

Appendix C (2)

CLASSROOM TEACHER &/OR SCHOOL SUPERVISOR OF DIABETIC CHILD RESPONSIBILITIES CHECKLIST

- ❑ Meet the parent(s), where possible, prior to start of school to gather information related to their child's diabetes.
  - special needs or concerns regarding the health and care of their child
  - typical signs and treatment of low blood glucose, for that child
  - protocol for meals and snack times, for that child
  - when school is to contact parents (eg. after incidents of moderate or severe low blood glucose, when student does not finish meals/snacks etc.)
  - review school guidelines concerning: causes, prevention, identification and treatment of hypoglycemia.

- ❑ Participate in meeting convened by the principal to inservice staff on the school's protocol for awareness, causes, prevention, identification and treatment of low blood glucose.

- ❑ Review with the principal the parent's completed 'Request and Consent – Diabetes Interventions' form for their diabetic child.

- ❑ If volunteer in class, make aware of child with diabetes

TREATMENT/EMERGENCY PROCEDURES:

- ❑ Know your role for responding to hypoglycemia episodes (eg. providing fast-acting sugar for treatment of hypoglycemia)

- ❑ Know the location of the student's emergency treatment supplies (eg. homeroom, office, health room etc.)

- ❑ Permit the student with diabetes to take action to prevent or treat low blood glucose (allow flexibility in class routine and school rules as required)

- ❑ Know the emergency contact procedures (including which school personnel are responsible for contacting parents and/or emergency services).

- ❑ Inform parents when the supply of fast acting sugar (oral glucose, orange juice etc.) is running low.

- ❑ Identify the child with diabetes to supply teachers and on-call teachers

- ❑ Identify the diabetic child to all teachers, support staff, volunteers etc. that come into the classroom. Review the school's emergency protocol with the mentioned personnel.

- ❑ Post the child's 'Emergency Treatment Form' in the classroom where parental approval is received. (Alternate place is in the supply teacher folder).

- Develop open lines of communication and encourage student to inform you when he/she feels the first symptoms of low blood sugar or a general feeling of 'unwellness'. Discuss with child how he/she is to signal you that he/she is experiencing a reaction.

- Where appropriate, discuss diabetes with the class, in age appropriate terms.

- Prepare for the diabetic child during special events such as school trips, parties, athletic activities etc. (specifically: have emergency glucose on hand, watch for signs of hypoglycemia).

- Review emergency plans with other teachers/volunteers before field trips.

- Ensure that the items for blood glucose monitoring and insulin injections are located in a secure and safe place.

Appendix C (3)

SCHOOL STAFF RESPONSIBILITIES CHECKLIST:

- Attend diabetes information meeting convened by the principal.

- Be able to identify students with diabetes in the school – be familiar with names and faces.

- Be familiar with the school's Hypoglycemia Emergency Treatment Form

- Know the names of the school's first aid providers and location of the first aid station.

Appendix C (4)

PARENTS/GUARDIANS RESPONSIBILITIES CHECKLIST

- ❑ Inform the school of their child's diabetes

- ❑ Meet with the school administration and appropriate school staff, e.g. classroom teacher, prior to the child's first day of school and provide information related to their child's diabetic condition including:
    - Special needs or concerns regarding the health and care of their child
    - Typical signs and treatment of low blood glucose
    - Times for meals and snack times
    - When the school is to contact parents, e.g. after incidents of moderate or severe low blood glucose etc
    - Review school guidelines concerning causes, prevention, identification and treatment of hypoglycemia and include highlighted special signs or characteristics for their child

- ❑ Complete the following forms and submit them to the school principal before your child's first day of school:
    - Request and Consent – Diabetes Interventions form
    - 3 copies of the Type 1 Diabetes-Hypoglycemia Emergency Treatment form

- ❑ Inform school administration regarding changes in their child's health, lifestyle, diabetes procedures, management and emergency contact numbers on an on-going basis

- ❑ Provide and maintain a supply of fast-acting sugar, e.g. oral glucose, orange juice, etc. at the school

- ❑ Provide a safe container for blood glucose monitoring items and insulin injection items and medication labelled with your child's name for transport and storage requirements

- ❑ Teach your child:
    - the importance of wearing a diabetes identification, Medic Alert, at all times
    - age appropriate understanding of the causes, identification, prevention and treatment of low blood glucose
    - to recognize the first symptoms of low blood glucose, when possible
    - to communicate clearly to adults/those in authority that he or she has diabetes and when feeling a reaction starting or a general feeling of unwellness, when possible
    - to be responsible for all treatment apparatus, including proper disposal
    - to cope with teasing or being left out
    - to report bullying and threats to an adult in authority so age-appropriate strategies can be provided
    - to eat only foods approved by parents
    - to take as much responsibility as possible for his or her own safety

Appendix C (5)

STUDENT WITH DIABETES RESPONSIBILITIES CHECKLIST

- Wears his/her Medic Alert identification at all times during the school day.
- Has age appropriate understanding of his/her diabetes.
- Recognizes symptoms of a low blood sugar reaction and can take age-appropriate action to treat the symptoms, where possible
- Takes responsibility for proper eating habits
- Takes responsibility for bringing and looking after his/her blood glucose monitoring and insulin injection apparatus, including proper disposal
- Has an age-appropriate understanding of how to administer the blood glucose monitoring system, blood testing, insulin injection, safe disposal of lancets and needles,
- Takes age-appropriate responsibility in providing self administration of appropriate low blood glucose treatment.
- Promptly informs an adult that he/she has diabetes as soon as symptoms appear or when experiencing a general feeling of unwellness, when possible
- Reports bullying and threats to an adult in authority.
- Copes with teasing, not participating in certain activities and develops age-appropriate coping strategies.

Appendix D

A DAY IN THE LIFE OF A JUVENILE DIABETIC by Martin Middleton

7:00 a.m.	wake up, wash up, get dressed
7:30 a.m. to 8:00 a.m.	check blood sugar levels (if over a certain level, will have to adjust the amount of insulin given) if too low, have a small drink of juice before I do my insulin needle after entering blood on glucometer, and reading blood sugar level, mix appropriate amounts of 2 kinds of insulin into needle, rotate various needle injection sites and do the next one MUST have breakfast (juice, cereal, toast, protein (cheese or meat) wait for the bus
8:30 a.m.	arrive at school
9:00 a.m.	rotate classes
10:45a.m.	recess – MUST have 1 fruit and 1starch (by now or before if needed)
11:50 a.m.	lunch – MUST have 2 or 3 starch, 1fruit/veg., 1 protein
12:50 p.m.	classes resume; if there is a gym class I have to have minimum of ½ fruit before class so I don't get too low
2:25 p.m.	afternoon recess – MUST have 1 fruit and 1starch
3:40 p.m.	take the bus home
4:05 p.m.	I'm hungry but can't eat if my blood sugar is too high. I will check my blood sugar on the glucometer: if I'm low, I can have veggies/dip, a few crackers and cheese or some chips, but if I'm high, I can have food that doesn't raise my blood sugar like celery, salad and cucumbers
4:30 to 5:30 p.m.	dinner – I MUST have 2 or 3 starch, 1 fruit, 1 protein, 1dairy Before dinner – I will check my blood sugar again – and again, do the appropriate amount of insulin. This insulin is a fast-acting one (different kind from the morning or night needle. Rotate needle site before injecting insulin.
8:00 p.m.	check blood sugar again – depending on the reading on the glucometer (high or low) depends on how much insulin to inject on the next needle site.

Every time I check my blood sugar, I must prick one of my fingers and draw blood – this blood is placed on a strip on my glucometer which gives me a "reading" on my blood sugar count – Ideally, I need to be between 6 and 8 - … lower than 6 is a concern, and higher than 10 is not good for me. If the reading says "Hi" it means

that my blood sugar count is dangerously high and if it got higher I could go into a coma. If the reading says any number below 6, I usually have a juice.
My finger tips get really sore.
My arms, legs and stomach also get sore as these are the "site" areas where I inject the insulin with a 1.0cc ½ inch needle into my body at least 3 times every day.

A DAY WITH A PROBLEM FOR A JUVENILE DIABETIC

I wake up in the morning, I felt a bit off – My reading was 4.3
and I was a bit shaky. I did my needle , had breakfast and took the bus to school. I felt better after breakfast. The first period of school was fine – no problems. The second period, I was in Language – doing a Journal response. All of sudden, I got this weird feeling, - I was weak and dizzy. I knew right away that I needed something to eat. I asked the teacher to go to my locker to get a snack and she said it was okay. I ate 1 cookie and thought that would be enough. The rest of the morning went well.
After lunch, I went to French class. I was in class for about 15 or 20 minutes, when again, the same thing happened like in the morning. I got weak, pale, and dizzy. I dropped my pencil, and I was putting my head down on the desk. I asked my teacher to go to the washroom. He suspected something was wrong, and followed me into the hall. He walked me to the office. The office staff got me a juice from the vending machine. My home room teacher came into the office and reminded me that I should TELL when I'm having a low. It was lucky that my French teacher could tell I wasn't well but I just didn't want the kids in my class to know.
I didn't feel right after that. The school staff was able to call my mom who came to get me and take me home to rest.

Appendix E

EMERGENCY HEALTH PROCEDURES PACKAGES FOR NEW PUPILS

- letter to parents
- request and consent form
- Hypoglycemia Emergency Treatment Forms (3 copies)
- School Administrator Responsibility Checklist
- Classroom Teacher Responsibility Checklist
- Parent Responsibility Checklist
- Student with Diabetes Responsibility Checklist

Appendix F

Resources

Print:

Alberta Children's Hospital. *Type 1 diabetes in children: A passport to knowledge* (CD-ROM). Calgary: Savvy knowledge Systems Corp., 1998.

Brachenridge, B. & R. Rubin. *Sweet Kids*. Alexandria, Virginia: American Diabetes Association, 1996.

Daneman, D. & M. Frank. Students with diabetes mellitus, the teachers role. In *Medical problems in the classroom,* 3rd ed, edited by R. Haslam and P. J. Valletutti. Austin, Texas: Pro Ed, 1996.

Daneman, D. & M. Frank, K. Perlman. *When a child has diabetes.* Toronto: Key Porter Books, 1998.

Elliott, J. *If your child has diabetes: An answer book for parents.* New York: Perigee Books, 1990.

McArthur, R. *Children have diabetes too: Learning together as a family.* Calgary: Alberta Children's Hospital, 1986.

Wysocki, T. *The ten keys to helping your child grow up with diabetes.* Alexandria, Virginia: American Diabetes Association, 1997.

Canadian Diabetes Association. *Kids with diabetes in school.* A resource document. Contact 1-800-BANTING or www.diabetes.ca

Video:

Care of children with diabetes in child care and school setting (video 20 minutes). Lawrence, Kansas: Magic Lantern Communications Ltd., Learner Manage Design Inc., 1990.

Care of children with diabetes in child care and school settings: Skill testing program. (video 35 minutes). Lawrence, Kansas: Magic Lantern Communications Ltd., Learner Manage Design Inc., 1990.

Growing and living with type 1 diabetes for teenagers (video 13 minutes). USA: Jean Betschart, Chronimed Publishing, 1993.

Living with diabetes: Tips for teachers (video 19 minutes). Milwaukee, Wisconsin: Maxishare Productions in association with Wisconsin Connection for Children's Hospital of Wisconsin, 1996.

Appendix G

Update to Diabetes Protocol: March 2007

1. Every child diagnosed with Type 1 Diabetes must have an up-to-date Hypoglycemia Emergency Treatment form. This form must be personalized to each child as each child's responses are unique.

2. The Emergency Treatment Form must be placed in each of the child's teachers' Student Medical Conditions folder, usually kept on their desk. The form must be posted in the staff room, or health room etc.

3. To assist school personnel with the development of the child's Treatment Plan, the school administrator arranges a meeting with the parents and Paediatric Diabetes Educator (family provides this contact information) or a health professional from the Local Community Care Access Centre to develop the plan. This step is particularly important for a child who is newly diagnosed with Type 1 diabetes and will be necessary should the child's condition change.

4. Inside each child's blood sugar testing kit, a chart of blood sugar ranges and treatments must be posted as educators do not make treatment decisions. Ex.

Bood Sugar Range	Treatment
6-10	Do nothing
5	Drink juice box
4	Drink juice box
3	Drink juice box
2	Drink juice box

5. Low Blood Sugar: if the reading on the glucometer is below the child's normal range, have child apply stated treatment. Wait 10 to 15 mins. and repeat treatment. Do not leave the child alone. Have child redo blood sugar test after second treatment. It may be practical to escort child to the office before the second treatment so child can be monitored if the supervisor must leave for other duties.

6. How often a child tests their blood sugar level during the school day is determined by the Diabetes Educator and the parent. This information should be stated on the emergency Treatment Form.

7. Each child's blood sugar testing kit contains a sharps container. All sharps from the tesing are placed in this container and the family arranges for disposal. Schools do not have sharps containers.

8. Whether a child with Type 1 Diabetes uses the syringe or insulin pump injection method, each school must have a team approach for supporting the child. This is particularly important for newly diagnosed children and for young children. As children get older, they generally prefer to manage their condition without assistance. In all other cases, young children need to be

supervised when doing their blood sugar testing so that they read the number on the glucometer accurately and choose the appropriate treatment as outlined on their chart inside their kit.

9. The **team approach** involves at least 3 staff members: classroom teacher, educational assistant, lunchroom supervisor, and/or school administrator. This ensures that the young child will have a trained supervisor available for the testing session(s) and these individuals know the child's signs and symptoms of hypoglycemia and can provide the appropriate intervention.

10. For the child who uses an insulin pump, the Diabetes Educator working with the child and family will assist the school with developing the individual child's contingency plan. This is a much more detailed system and is unique to each child.

11. Please Note: school personnel do not
    - Administer insulin syringe injections
    - Push the release button on the insulin pump
    - Administer glucagon syringe injections

12. In the CHATT HDSB Student Health comference, this protocol is posted along with a powerpoint presentation for staff to educate them about Diabetes. It is imperative that if a school has a child with diabetes that staff review this powerpoint presentation annually.