Toronto District School Board

Diabetes Management

MANAGING DIABETES IN OUR SCHOOLS

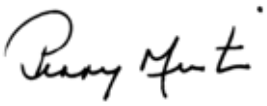



2010

The Toronto District School Board has a primary responsibility to ensure the safety of students and staff inside our schools and on Board property. To that end, the Diabetes Management Procedure has been developed to help TDSB staff better understand diabetes and their role in its management of it in our schools.

Type 1 diabetes affects one in every 300 to 400 children and Type 2 diabetes is appearing with more frequency in pubertal children and adolescents. This management strategy – developed in consultation with Board staff, health organizations and the parent community – supports effective management diabetes of in our schools. Education and training will support the continued safety of our students with diabetes.

Sincerely,



Penny Mustin
Deputy Director, Operations

INTRODUCTION

What is Diabetes?

Diabetes is a serious disease that impairs the body's ability to use food properly. In students with diabetes, insulin is either not produced or does not work efficiently. There are three types of diabetes, each which require different management:

Type 1 Diabetes (insulin dependent)
Type 1 can occur at any age, but is most commonly diagnosed between infancy and late 30s. In this type of diabetes, the pancreas produces little or no insulin and the individual must inject insulin several times every day. Type 1 diabetes affects approximately 1 in every 300 to 400 children and cannot be prevented or cured.

Type 2 Diabetes (non-insulin dependent)
Type 2 diabetes typically develops in adulthood. In this type, the body either does not produce enough insulin or the insulin produced does not work efficiently. Students with Type 2 diabetes may need to self-monitor their blood glucose and in some cases, take oral medication or injected insulin.

Gestational Diabetes
Gestational diabetes develops in 2-5 per cent of pregnant women. This type of diabetes usually disappears after childbirth but can result in a higher risk of future development of Type 2 diabetes for the mother.

WHAT IS DIABETES?

Signs and Symptoms

When blood glucose is in proper balance, children or adolescents will behave as others. When it is not, diabetes can lead to hypoglycaemia or hyperglycaemia, which in the most severe cases can be life threatening.

Hypoglycaemia (low blood sugar)

This occurs when the amount of blood sugar is lower than an individual's target range. This can develop quickly and requires an immediate response. Be alert for the following symptoms and contact parents if mild symptoms appear, including:

- Cold, clammy or sweaty skin
- Paleness, quietness
- Shakiness or lack of coordination
- Fatigue, dizziness
- Irritability, hostility and poor behaviour

Severe hypoglycaemia can be life-threatening. Call 911 for emergency medical services, call parent/guardian/caregiver and treat with injectable glucagon. Symptoms of severe hypoglycaemia include:

- Confusion
- Slurred speech
- Staggered gait

Signs and Symptoms

Hyperglycaemia (high blood sugar)

This occurs when the amount of blood sugar is higher than the individual's target range for a prolonged period of time. An urgent response to severe high blood sugar levels is not necessary if there are no symptoms.

Parent/guardian/caregiver should be notified the same day if school personnel note the following symptoms:

- Frequent trips to the washroom to urinate
- Excessive thirst
- Blurred vision
- Hunger

An urgent response to severe hyperglycaemia symptoms may be necessary in the event that the student experiences some of the following symptoms:

- Nausea
- Vomiting
- Extreme thirst
- Frequent/excessive urination
- General malaise

If any of these symptoms is present, school staff must call 911 immediately. The parent/guardian/caregiver should be alerted and if they cannot be reached, school staff should accompany the student to the hospital.

Roles and Responsibilities

The following information is based on the TDSB Operational Procedure PR607, Diabetes Management

Ensuring the safety of students with diabetes in a school setting depends on the cooperation and support of the entire school community. To minimize risk and to ensure rapid response to an emergency, parents, students and school personnel must all understand and fulfill their responsibilities.

(a) School Principal

(i) Operational Duties

A. Reviews Operational Procedure PR607, Diabetes Management, with entire staff each year in September and throughout the school year when required.
B. Notifies cafeteria staff, lunchroom supervisors, other school-based staff and volunteers of the individual student's Diabetes Management Plan.
C. Advises occasional teachers to review the individual Diabetes Management Plans for students in their assigned classroom.
D. Ensures that the parent/guardian/caregiver is called and emergency action is taken as required when the student has not responded to the actions outlined in the Diabetes Management Plan. Where necessary, arranges for transport of students to a hospital or emergency medical facility. Designates a staff person to accompany the student to the hospital.
E. Provides a discreet location where the student may self-monitor and/or self-administer medication.
F. Provides a secure location(s) for the student's emergency supplies in the school office and classroom, as necessary.
G. Informs School Council of the Board procedure on Diabetes Management and provides information on diabetes identification and prevention.
H. Provides appropriate supervision, including during self-monitoring and/or self-administration of

Roles and Responsibilities

(ii) Consent and Parental Involvement

A. Ensures that upon registration, parent/guardian/caregiver and students are asked to supply information on diabetes.
B. Meets with parent/guardian/caregiver to complete the following:
   - Form 536A, Administration of Prescribed Medication
   - Form 536B, Management of Emergency Medical Concerns
   - Form 536C, Student Medical Alert
   - Form 607A, Diabetes Management Plan
   - Form 607B, Hyperglycemic Emergency Plan and/or Hypoglycemic Emergency Plan
   - Excursion Form 511E, Medical Information
   - Excursion Form 511K, Physical Education Information
   - Excursion Forms 511C, 511I, 511J, as appropriate
C. Convenes a case conference which may include parent/guardian/caregiver, the student if appropriate, school staff to gather medical information related to the condition including identification and management of an individual student's diabetes. In some instances, CCAC Case Manager, Care Coordinator and/or Diabetic Care Educators may also be part of the case conference.
D. Obtains consent from parent/guardian/caregiver and student with diabetes to share information with staff and other approved individuals.
E. Works closely with the parent/guardian/caregiver and student with diabetes to provide ongoing support.
F. Requests parent/guardian/caregiver provides all required supplies and food for their children.
G. Ensures that CCAC is contacted for all students who are unable to manage their blood glucose (sugar) monitoring, insulin injections or pump independently as well as to request support for training and education of involved school personnel. Medication which safely can be administered by a layperson within the terms and conditions of collective agreements may be administered by staff.

Roles and Responsibilities

(iii) Documentation

A. Develops and maintains a file for each student including but not limited to:
   - current management and treatment;
   - a copy of instructions from the student's physician or nurse, if appropriate; and
   - forms identified in 4.4.(a)(ii)(B)

B. Communicates information on diabetes to parent/guardian/caregiver, students, employees and volunteers and updates information as appropriate.

C. Ensures that Form 536B, Management of Emergency Medical Concerns, is posted in a non-public area of (i.e. staff room and/or school office, classroom etc.) and the Teacher's Day Book. Ensures that Hypoglycemic or Hyperglycemic Emergency Action Plans are readily available.

D. Provides cafeteria staff with a copy of the Management of Emergency Medical Concerns (Form 536B) in the food preparation area where staff can review it discretely while respecting the privacy and confidentiality of the student.

E. Provides the Board's Transportation department with a list of students with diabetes riding the school bus.

(iv) Professional Learning

A. Distributes information on managing diabetes to school-based staff and others who are in direct contact with students on a regular basis.

B. Provides information for school staff regarding how to respond to hypoglycaemic incidents and other emergency situations related to diabetes.

C. Provides teachers with appropriate resources to use in their classrooms.

D. Directs staff to online course on Key to Learn.

Roles and Responsibilities

(a) Parent/Guardian/Caregiver of a Student with Diabetes

i. Informs the school of the child's diabetes and completes forms identified in 4.4.(a)(ii)(B).
ii. Participates in a case conference with school principal, teacher, involved health professionals as required.
iii. Informs school administration regarding changes in the child's health, lifestyle, diabetes procedures, management and updates emergency contact numbers on an ongoing basis.
iv. Provides and maintains at the school a supply of fast-acting sugar (carbohydrates) e.g. oral glucose, juice.
v. Provides a safe container for blood sugar monitoring items, insulin injection items and medication labelled with the child's name.
vi. Provides and replenishes all necessary diabetic related supplies including:
    - glucose monitor and strips;
    - lancing devise and lancets;
    - insulin, syringes/pen needles;
    - sharps container or for insulin pump, extra infusion set, insulin cartridge, insulin, batteries as appropriate; and
    - glucagon needle, Emergency Glucagon Kit.
vii. Teaches children:
    - to wear MedicAlert® identification;
    - to understand the causes, identification, prevention and management of low/high blood sugar as appropriate to his/her age or cognitive ability;
    - to recognize and act on the first symptoms of low blood sugar;
    - to communicate clearly to adults/those in authority that he or she has diabetes and when feeling the onset of symptoms or a general feeling of "unwellness";
    - to be responsible for all management apparatus, including proper disposal container;
    - to report any possible bullying and threats to an adult in authority;
    - to eat only foods approved by parents; and to participate at an age appropriate level in their Diabetes Management Plan.

Roles and Responsibilities

(d) Students with Diabetes

i. Wears his/her MedicAlert® identification at all times during the school day.
ii. Recognizes the symptoms of a low blood sugar reaction.
iii. Manages symptoms.
iv. Takes responsibility for following an established eating plan as outlined in the student management plan.
v. Takes responsibility for bringing and looking after his/her blood glucose (sugar) monitoring and insulin injection apparatus, including proper disposal in an appropriate manner.
vi. Participates in blood glucose checking, insulin administration and safe disposal of sharps.
vii. Informs an adult promptly that he/she has diabetes as soon as symptoms of low blood sugar appear or when experiencing feelings of being unwell.
viii. Self monitors his/her blood glucose regularly with a glucose meter and keeps the results within a target range.

(e) Parent/Guardian/Caregiver within the School Community

i. Supports a safe and caring school environment for all members of the school community.
ii. Participates in parent information sessions.
iii. Encourages their children to respect students with diabetes and their management plans.

(f) Community Care Access Centre and School Health Support Services

i. Receives applications from parent/guardian/caregiver for health support services beyond the capacity, resources and/or requirements of the schools and/or Board.
ii. Supports students directly or informs, supports and consults with appropriate school staff.

Effective Practices in Schools

Blood Glucose Monitoring/Insulin Injection
Students need a safe, hygienic, private space or space where they are comfortable in the school to perform self-blood-glucose monitoring and insulin injections throughout the school day. In some instances, they may require support or supervision of these activities.

Some students may not be unable to perform self-blood glucose monitoring and or insulin administration throughout the school day. School staff is not able to undertake these functions, but support may be sought from parents and/or the Community Care Access Centre. This will be discussed as part of the Diabetes Management Plan and arrangements made where students are not able to self care.

Management of Diet Requirements
Proper timing of meals and snacks is important for a student with diabetes to maintain proper blood sugar levels. Students need the opportunity to eat all meals and snacks fully, where applicable, and on time. Students may require more time, flexibility and supervision as they eat lunch or snacks throughout the day. As well, some assistance may be required to keep an appropriate schedule. Students should have a safe place in the classroom to keep their required food.

In addition, emergency food supplies that include oral glucose, juice and/or fast-acting sugar should be available in other locations in the school including the school office and gymnasium. The location of emergency supplies should be recorded on the Diabetes Management Plan. Staff should be aware of the location of emergency supplies. Where classmates are sufficiently mature to understand the importance of these emergency supplies, they too can be informed of the location.

Parents/guardians/caregivers are responsible for the provision of all food and emergency supplies for their children. Additional supplies should be provided for special events such as excursions or days with high levels of physical activity.

Effective Practices in Schools

Creating a Positive Environment for Students with Diabetes
School personnel can support students with diabetes by learning about the disease and by having frequent, open communication with parents and students. This will help to reduce apprehension and anxiety in students, parents, and school personnel.

Open communication will support a positive attitude toward students' full participation and ensure that students participate in all school activities including excursions and sports activities.

When the blood glucose is in proper balance, children or adolescents 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 they did not have diabetes.

Considerations for Students with Special Needs
In the event that students are not able to be independent in their care (e.g. a student may be too young, physically and/or developmentally challenged or in a diabetes emergency situation) adult intervention will be required on their behalf to ensure their safety and management of their diabetes.

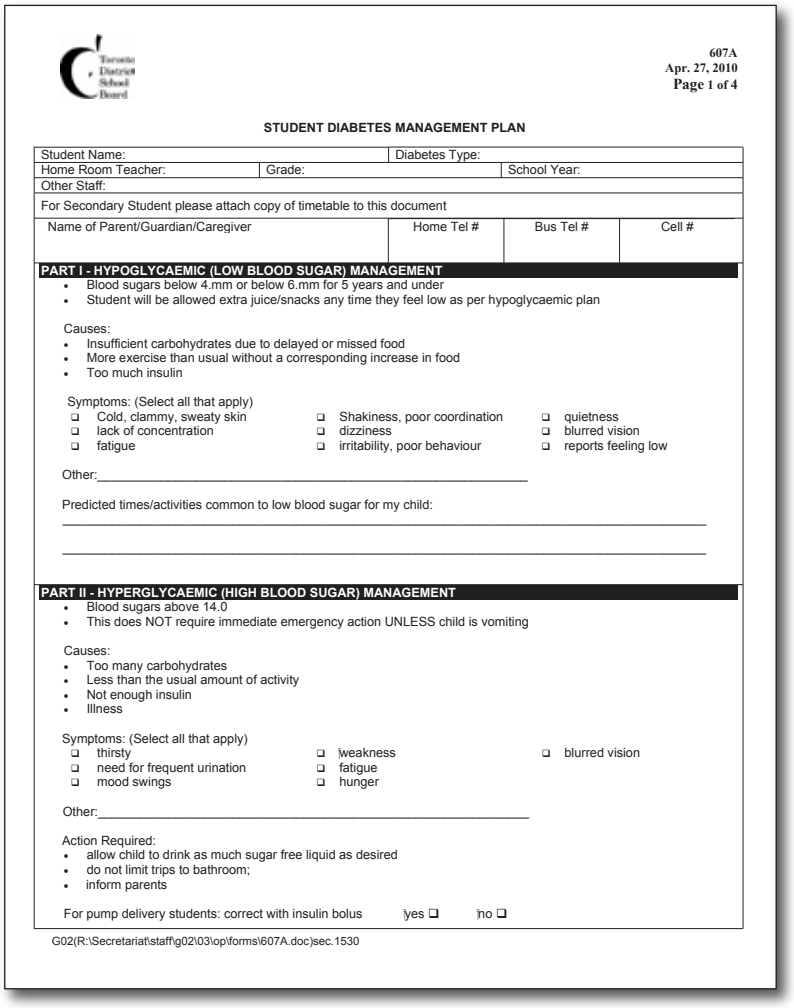
If students are not taking responsibility for their diabetes care it may be due to other factors including:

- language
- cognitive ability
- physical ability
- maturity level
- behavioural issues
- psychosocial barriers

This requires communication between parent/guardian/caregiver, teachers and other professional support as appropriate and may require more direct intervention and support to ensure their safety.

Research indicates that with increasing age comes decreasing compliance and worsening of blood sugar control. This can be understood within the context of normal adolescent development and their desire to be independent. The adolescent student may require ongoing guidance and support to ensure safe management of their diabetes.

Diabetes Management Plan



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STUDENT DIABETES MANAGEMENT PLAN

Student Name:		Diabetes Type:	
Home Room Teacher:	Grade:		School Year:
Other Staff:			
For Secondary Student please attach copy of timetable to this document			
Name of Parent/Guardian/Caregiver	Home Tel #	Bus Tel #	Cell #

PART I - HYPOGLYCAEMIC (LOW BLOOD SUGAR) MANAGEMENT

- Blood sugars below 4.mm or below 6.mm for 5 years and under
- Student will be allowed extra juice/snacks any time they feel low as per hypoglycaemic plan

Causes:
- Insufficient carbohydrates due to delayed or missed food
- More exercise than usual without a corresponding increase in food
- Too much insulin

Symptoms: (Select all that apply)

❑ Cold, clammy, sweaty skin	❑ Shakiness, poor coordination	❑ quietness
❑ lack of concentration	❑ dizziness	❑ blurred vision
❑ fatigue	❑ irritability, poor behaviour	❑ reports feeling low

Other:_____

Predicted times/activities common to low blood sugar for my child:
_____
_____

PART II - HYPERGLYCAEMIC (HIGH BLOOD SUGAR) MANAGEMENT

- Blood sugars above 14.0
- This does NOT require immediate emergency action UNLESS child is vomiting

Causes:
- Too many carbohydrates
- Less than the usual amount of activity
- Not enough insulin
- Illness

Symptoms: (Select all that apply)

❑ thirsty	❑ weakness	❑ blurred vision
❑ need for frequent urination	❑ fatigue	
❑ mood swings	❑ hunger	

Other:_____

Action Required:
- allow child to drink as much sugar free liquid as desired
- do not limit trips to bathroom;
- inform parents

For pump delivery students: correct with insulin bolus yes ❑ no ❑

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Each student with diabetes will have a Diabetes Management Plan.

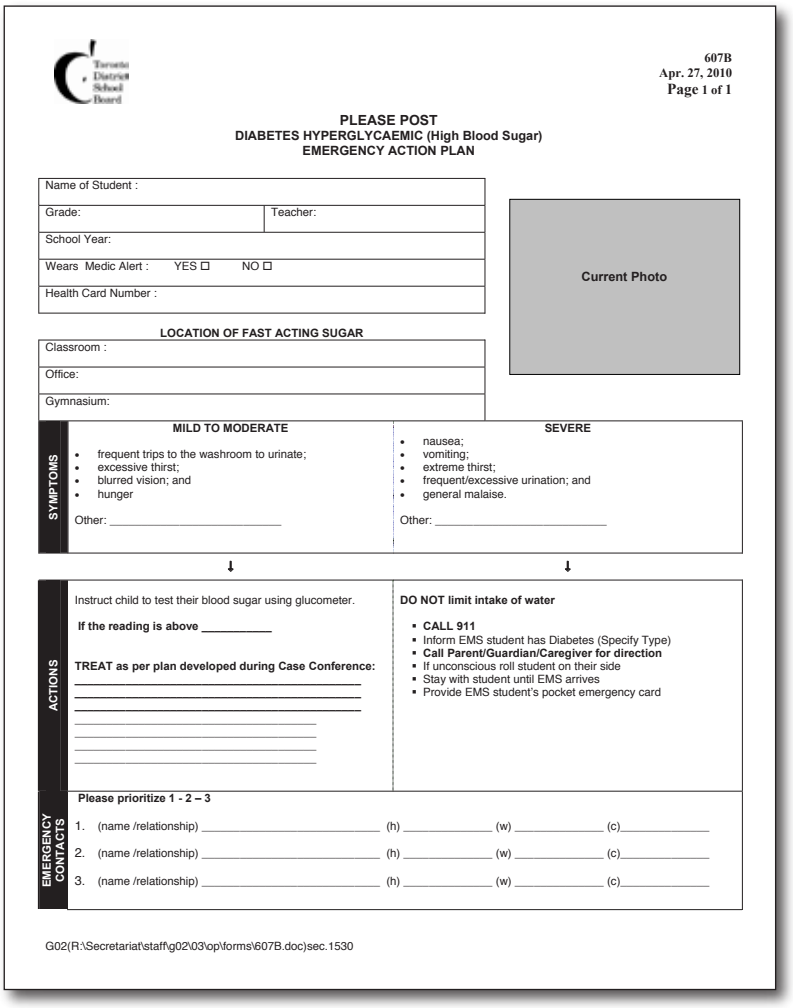
This plan, developed in consultation with the parent/guardian/caregiver, provides all necessary information about the student, including:

- Unique signs and symptoms of hyperglycaemia or hypoglycaemia
- Nutrition breaks information
- Insulin delivery system
- Supplies
- Excursion protocol
- Contact information

The Diabetes Management Plan will be located:
- Main office
- Teacher's Day Planner

DIABETES MANAGEMENT PLAN

Emergency Action Plan



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PLEASE POST
DIABETES HYPERGLYCAEMIC (High Blood Sugar)
EMERGENCY ACTION PLAN

Name of Student :	
Grade:	Teacher:
School Year:	
Wears Medic Alert : YES ☐ NO ☐	
Health Card Number :	

Current Photo

LOCATION OF FAST ACTING SUGAR

Classroom :
Office:
Gymnasium:

SYMPTOMS

MILD TO MODERATE

- frequent trips to the washroom to urinate;
- excessive thirst;
- blurred vision; and
- hunger

Other: _____

SEVERE

- nausea;
- vomiting;
- extreme thirst;
- frequent/excessive urination; and
- general malaise.

Other: _____

ACTIONS

Instruct child to test their blood sugar using glucometer.

If the reading is above _____

TREAT as per plan developed during Case Conference:

_____
_____
_____
_____
_____
_____
_____

DO NOT limit intake of water

- **CALL 911**
- Inform EMS student has Diabetes (Specify Type)
- **Call Parent/Guardian/Caregiver for direction**
- If unconscious roll student on their side
- Stay with student until EMS arrives
- Provide EMS student's pocket emergency card

EMERGENCY CONTACTS

Please prioritize 1 - 2 – 3

1. (name /relationship) _____ (h) _____ (w) _____ (c)_____
2. (name /relationship) _____ (h) _____ (w) _____ (c)_____
3. (name /relationship) _____ (h) _____ (w) _____ (c)_____

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Each student with diabetes has an Emergency Action Plan, which includes vital information, such as:

- Photo
- Location of fast-acting sugar
- Signs and symptoms
- Emergency procedures
- Contact information

This is posted in:

- Student's Classroom
- Teacher's daybook
- Office
- Staff room
- Cafeteria/lunchroom

Diabetes Management Tools

Blood Glucose Meter

A blood glucose meter is an electronic device for measuring the blood glucose level. A relatively small drop of blood is placed on a disposable test strip which interfaces with a digital meter. Within several seconds, the level of blood glucose will be shown on the digital display.

Diabetes Management Tools

Fast-Acting Sugar

A form of carbohydrate that will raise blood glucose levels relatively quickly when ingested. To treat hypoglycemia, the standard advice is to consume 10-15 grams of “fast-acting” carbohydrate.

Each of the following items provides roughly 10-15 grams of carbohydrate:

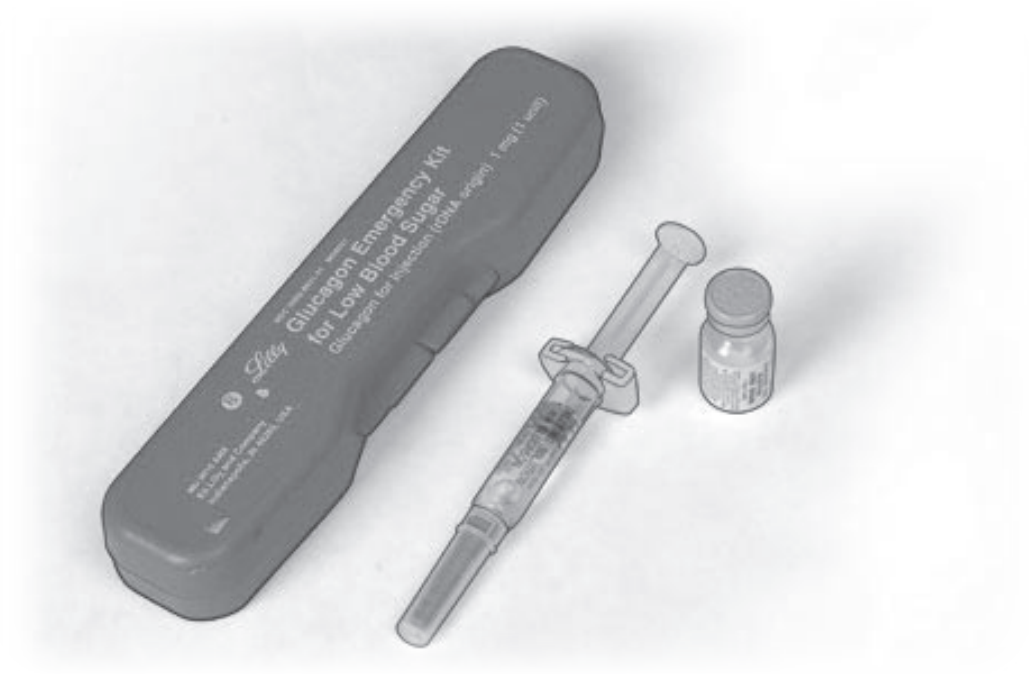
- 5-6 LifeSaver candies
- 4-6 ounces regular (non-diet) soda
- 4-6 ounces of orange juice
- 2 tablespoons of raisins
- 8 ounces of non-fat or low-fat milk
- One tube (0.68 ounces) of Cake Mate decorator gel

There are also a number of commercially available glucose tablets and gels.

Diabetes Management Tools

Injectable Glucagon

An injectable form of glucagon is vital first aid in cases of severe hypoglycemia when the victim is unconscious or for other reasons cannot take glucose orally. The glucagon is given by intramuscular, intravenous or subcutaneous injection, and quickly raises blood glucose levels.



Diabetes Management Tools

Diabetes Care Kit (low kit)

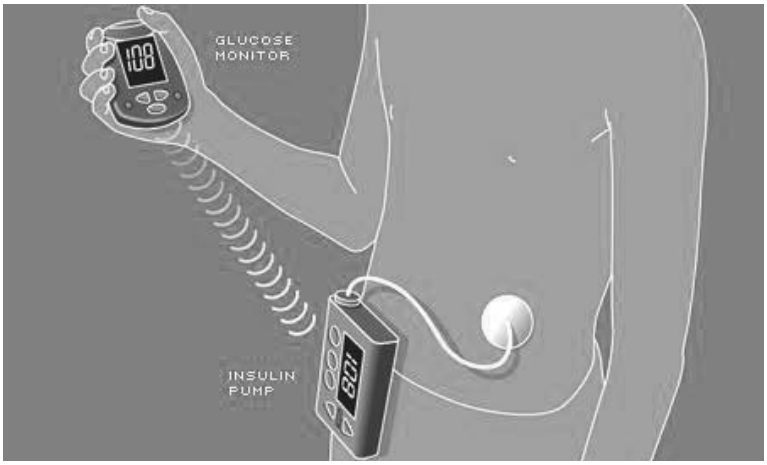
Includes:

- Glucose meter
- Extra battery for meter
- Test strips
- Lancing device and lancet
- Insulin
- Syringes
- Glucagon emergency kit
- Fast-acting glucose

Diabetes Management Tools

Insulin Pump
The insulin pump is a medical device used for the administration of insulin in the treatment of diabetes mellitus, also known as continuous subcutaneous insulin infusion therapy. The device includes:

- the pump itself (including controls, processing module, and batteries)
- a disposable reservoir for insulin (inside the pump)
- a disposable infusion set, including a cannula for subcutaneous insertion (under the skin) and a tubing system to interface the insulin reservoir to the cannula.



An insulin pump is an alternative to multiple daily injections of insulin by insulin syringe or an insulin pen and allows for intensive insulin therapy when used in conjunction with blood glucose monitoring and carb counting.

Additional Information

General

- Canadian Diabetes Association: www.diabetes.ca
- American Diabetes Association: www.diabetes.org
- Children with Diabetes at School: www.childrenwithdiabetes.com
- Health Canada: www.healthcanada.gc.ca
- Joslin Clinic: www.joslin.harvard.edu
- Juvenile Diabetes Research Foundation: www.jdrf.ca
- Ontario Physical Health Education Association: www.ophea.net
- Trillium Health Centre: www.trilliumhealthcentre.org
- Hamilton Health Sciences: www.hamiltonhealthsciences.ca
- Supporting Students with Type 1 Diabetes in the Classroom (DVD approx. 15-20 minutes) Trillium Health Centre, 2008
- Diabetes in Children and Teens: A Survival DVD and booklet
- www.trilliumhealthcentre.org/programs_services/womens_childrens_services/childrensHealth/familyCareCentre/media/diabetesmov.html

For School Principals and Staff

- TDSB Physical and Education and Outdoor Education Safety Documents
- Diabetes Management: A Handbook for Principals and School Staff

Glossary of Terms

Blood Glucose
The amount of sugar in the blood at a given time. Blood glucose levels fluctuate with in a normal rage but in students with diabetes that fluctuation can be exaggerated well beyond the normal range.

Blood Glucose monitoring
Students with diabetes should self monitor their blood glucose regularly with a glucose meter and work to keep the results within a target range. Levels will change depending on food consumption, physical activity, stress, illness, problems with the insulin delivery system and many other unknown factors. To obtain a reading, a drop of blood is placed on a blood glucose strip which is inserted into a blood glucose meter.

Diabetes Care Kit (Low Kit)
Used for the monitoring and treatment of symptoms for hypoglycaemia (low blood sugar), the kit contains:

- blood monitor/ strips/lancet
- fast-acting sugar (Fast-acting sugar tablets /juice)
- pocket Information Card or emergency contact card
- glucagon

Diabetic Ketoacidosis (DKA)
DKA is a life threatening condition caused by a severe shortage of insulin, which can occur, at the time of diagnosis. In children with established diabetes DKA is generally preventable. DKA results in a build up of sugar and ketones in the blood and leads to vomiting and severe dehydration. DKA happens over a period of hours not minutes and is always preceded by high blood sugar symptoms (excessive thirst and excessive urination).

Fast-Acting Glucose
A carbohydrate to eat or drink that is absorbed quickly by the body to correct low blood sugar i.e. juice, glucose tablets.

Glucose
Glucose is a simple sugar produced when carbohydrates are consumed and /or released by the liver or the muscles in the body. It is the primary source of energy for the body.

Glossary of Terms

Hypoglycaemia (low blood glucose)
Hypoglycaemia is an emergency situation and occurs when the amount of blood glucose has dropped below 4.0 mml. Symptoms of hypoglycaemia can be mild, moderate or severe. Hypoglycaemia is most often a result of an individual having injected too much insulin, or eaten too little food, or exercised without extra food. The symptoms of a mild and/or moderate hypoglycaemia are usually recognized by the student and may include but are not limited to:

- hunger
- increased heart rate
- shakiness
- headache
- dizziness
- blurred vision
- clammy
- sweaty skin
- irritability
- extreme tiredness
- inability to concentrate
- mood changes

Left untreated the student may become confused, present with slurred speech and a staggered gait and eventually become unresponsive and in the most severe case become unconscious.

Glucagon
Glucagon is a hormone that raises blood glucose. An injectable form of glucagon is used in an emergency situation to safely treat severe hypoglycaemia. Please note that no harm can come from administering glucagon injections.

Hyperglycaemia
Hyperglycaemia occurs when the amount of blood sugar is higher than an individual's target range. An urgent response to severe high blood sugar levels are often not accompanied by symptoms and need not concern school personnel. However, parents should be notified at the end of the school day (sooner if the parents request this) if school personnel note frequent trips to the bathroom to urinate and /or excessive thirst. Parents should to be called immediately if the student has a stomach ache, nausea, and/or vomiting.

Insulin
Is a hormone that is required to effectively convert glucose to energy for the body to use. With no insulin, glucose builds up in the blood instead of being used for energy. Therefore, students with Type 1 diabetes must administer insulin by syringe, insulin pen or insulin pump. Students with Type 2 Diabetes whose bodies make insulin but are unable to use it effectively will require life style changes, oral medication and/or insulin.

Ketones
Ketones are an acid created when the body burns its own fat. Ketones are common in Type 1 diabetics because the body cannot get enough glucose from the blood. The insulin cannot deliver energy to the body's cells, so the body has a survival mechanism that begins burning fat. In most Type 1 diabetics there may not be a lot of fat to burn. Diabetics may want to know what their ketone level is as a means of managing their blood glucose levels more efficiently.

Target Range
Acceptable blood glucose levels based on the Canadian Diabetes Association's Clinical Practice Guidelines and personalized for the student by the parent/guardian/caregiver and the diabetes care team.