



# Guidelines for creating safe and healthy schools for students with diabetes

# Table of contents

<b>Introduction</b>	<b>Page 3</b>
<b>Section 1: What does diabetes mean?</b>	
<b>What is diabetes?</b>	<b>Page 4</b>
<b>How do people get diabetes?</b>	<b>Page 4</b>
<b>The school's role</b>	<b>Page 5</b>
<b>Diabetes treatment regimes</b>	<b>Page 6</b>
<b>Daily diabetes management techniques and strategies</b>	<b>Page 6</b>
<b>Cause and Effect</b>	<b>Page 7</b>
<b>Student behaviour and participation</b>	<b>Page 7</b>
<b>Blood Glucose Monitoring</b>	<b>Page 9</b>
<b>Section 2: Management of Diabetes in Schools</b>	
<b>Managing diabetes in Schools</b>	<b>Page 10</b>
<b>What happens if blood sugars are outside of the healthy range?</b>	<b>Page 12</b>
<b>Section 3: Roles and Responsibilities</b>	
<b>Responsibilities of the school principal</b>	<b>Page 14</b>
<b>Responsibilities of school staff</b>	<b>Page 14</b>
<b>Responsibilities of parents/guardians</b>	<b>Page 14</b>
<b>Responsibilities of a student with diabetes</b>	<b>Page 15</b>
<b>Additional responsibilities of Extended Day staff</b>	<b>Page 15</b>
<b>Section 4: Glossary and Definitions</b>	<b>Page 16</b>
<b>Appendices</b>	
<b>Sample Individual Diabetes Care Plan</b>	<b>Page 18</b>
<b>Daily Communication Card</b>	<b>Page 21</b>
<b>Helpful Tips</b>	<b>Page 22</b>
<b>Signs and Symptoms of Hypoglycemia</b>	<b>Page 23</b>
<b>Signs and Symptoms of Hyperglycemia</b>	<b>Page 25</b>
<b>Resources</b>	<b>Page 27</b>

## **Introduction and Acknowledgements**

The following guidelines were developed to support principals, parents/guardians and the school community (all staff and students) in creating a safe environment for students with diabetes. It provides the information needed to help all parties manage the risks associated with diabetes.

The development of this document has been a collaborative project involving the Ottawa-Carleton District School Board (OCDSB), the Children's Hospital of Eastern Ontario (CHEO), Champlain Community Care Access Centre (CCAC), and Ottawa Public Health.

Thanks also to Trillium Health Authority for allowing the adapted use of their visual charts of symptoms and signs of hyper- and hypoglycemia.

# What does diabetes mean?

## What is diabetes?

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 (glucose) which is required to sustain life. Instead, unused glucose accumulates in the blood and spills out into the urine.

### **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 child is born.

## How do people get diabetes?

The majority of people with diabetes develop the problem in adulthood. Individuals with Type 2 diabetes can still produce some insulin and may be able to control their diabetes by diet alone or with oral medication.

Children and adolescents with Type 1 diabetes are different; they are unable to make any insulin and must take insulin injections daily. 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.

Children are diagnosed with diabetes at various stages of their lives. The greatest increase in Type 1 Diabetes is in children under 5 years of age. Some will be very young, others older and more mature, and some will have special needs. The goal for all of these children is to become as independent as possible in managing their diabetes as soon as possible in a supportive and nurturing school environment that includes all school personnel (including extended day staff, custodial staff, etc). Students will develop independence at different rates.

When a child has recently been diagnosed with diabetes, parents usually feel shocked and scared. The fact that diabetes is a serious disease with significant complications, as well as the fact 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) can be quite overwhelming. The first year after diagnosis may be difficult while the family and student work with their diabetes health care team to adjust to life with diabetes.

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 provide assistance as needed.

## **The school's role**

The school's role is to provide support as the student moves from dependence to independence and to create a supportive environment in which this transition can occur. It is important that the school develop supportive practices and protocols for school staff in a school with a student with diabetes. Nevertheless, the ultimate responsibility for diabetes management rests with the family and the child.

Students spend at least 30-35 hours per week in a school setting; this represents more than half their waking hours. For students with diabetes, therefore, it is vital that the student, parent/guardian, school personnel and involved health care providers are clear, confident and capable in their roles and responsibilities. It is essential that school personnel have accurate and current information about diabetes and how it is managed to reduce stigma and other problems that may put a student's health and safety at risk.

The *Education Act* imposes specific duties on teachers and principals. Section 265 (j) of the *Act* stipulates that principals have a duty "to give assiduous attention to the health and comfort of the pupils". 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.

Students living with diabetes have the right to full and equal participation in school and all school-related activities without the fear of exclusion, stigmatization, or discrimination.

On-going communication with parents is important for the safe management of diabetes in students. Daily communication of blood sugar levels is essential for young students or students with special needs. As children develop their ability to manage their own diabetes, this communication may take various forms (e.g., tracking of blood sugar levels, recording in daily agenda, monitoring in glucose meter).

Timely communication is essential when significant high and low blood sugar levels are present.

## **Diabetes Treatment Regimes**

**Type 1** diabetes requires insulin which is given either by injection or using an insulin pump.

**Type 2** diabetes in children can sometimes be managed by lifestyle changes and oral medication, but many will also need insulin.

### **Injections**

Injections are prescribed two to four times per day. Diabetes control is improved with more injections per day. The timing is as follows:

- Two injections: Breakfast and Supper
- Three injections: Breakfast, Supper and Bedtime
- Four injections: Breakfast, Lunch, Supper and Bedtime. (some students on this regimen will also take insulin with snacks)
- The type of insulin injected is dependent on the number of injections. All children will have a basal dose of insulin (long-acting insulin) and a bolus dose of insulin (short-acting).

### **Insulin Pump Therapy**

- An insulin pump is a device that delivers basal insulin continuously through a small tube inserted under the skin that is changed every 2-3 days by the student or caregiver. Extra fast-acting insulin (bolus) is given by the pump before each meal or snacks and to correct high blood sugar readings. This extra insulin must be manually entered into the pump as calculated by the amount of carbohydrates in food and the blood glucose level. In other words, the pump can deliver the insulin, but has to be told how much to give. Children often require assistance with this step to ensure proper data has been entered.

## **Daily Diabetes Management Strategies and Techniques**

To maintain optimal health, a student living with diabetes must balance medication, including insulin, food, and activity every day.

Diabetes is an onerous disease. The management of it involves a unique daily balance and constant attention to diet, activity and insulin. Because the treatment can vary daily, frequent blood glucose monitoring (at least 4 times per day) is necessary to determine whether this balance is being achieved.

With support from school personnel, most students can manage their diabetes independently or with minimal support. The OCDSB guidelines are intended to work with parents/guardians to encourage a progression toward independence and confidence. However, some students take longer to progress and some are unable to perform the daily diabetes management tasks. These students may require trained personnel to assist with or administer insulin, monitor blood sugar (with lancets), or supervise food intake and activity. Additionally, a student experiencing hyper/hypoglycemia may be unable to perform school-related or other tasks.

## **Cause and effect**

**FOOD** increases the amount of glucose/sugar in the blood.

In someone without diabetes, the body makes just the right amount of insulin to balance their blood glucose levels as they eat.

When a student with diabetes takes an insulin injection before school, the dose is meant to match a predetermined amount of carbohydrates (CHO) in their meals and snacks. If a student does not consume their full meal, they are at risk for a low blood glucose following lunch.

Students on insulin pumps tell the pump how much they plan to eat. If the student does not eat the food they planned, the student/caregiver /supervising adult may subtract the amount of carbohydrate accordingly. If this is done, the student will not be at risk for low blood glucose readings. If a full dose was already given, the total amount of carbohydrates must be eaten.

Dietary selections are the sole responsibility of the parent and/or student. The OCDSB promotes a healthy living/eating/active lifestyle.

**EXERCISE** usually lowers glucose/blood sugar levels.

Students may take some juice or a snack containing carbohydrates before an activity to prevent blood sugar going too low. Some may decrease their insulin prior to activity.

Changes in planned activities (e.g., cancellation of scheduled physical activity or involvement in extracurricular activities, etc.) may impact the amount of insulin required. Please refer to the student's Individual Diabetes Care Plan.

**INSULIN** lowers glucose/blood sugars. Insulin must be taken by injection or by wearing an insulin pump.

## **Student behaviour and participation**

When blood sugar levels are outside the target range (i.e. hypoglycemia or hyperglycemia) the student's learning, behaviour and participation may be affected. However, having diabetes cannot be assumed to be the reason for inappropriate conduct.

Students with diabetes should 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 students who wish to participate in vigorous physical activity, good planning is essential so that the blood glucose level is maintained. The major risk of unplanned vigorous activity is low blood glucose. This can be prevented by eating additional food containing carbohydrates or decreasing insulin if appropriate.

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

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 students with diabetes can safely participate.

It is important that both the school staff involved and the student with diabetes carry some form of rapid acting sugar such as glucose tablets or juice boxes on field trips, sports events, or other outings.

Students with diabetes are no more susceptible to infection or to illness than their classmates. However when students 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 insulin.

## **Blood Glucose Monitoring**

All children with diabetes must do blood glucose checks at least 4 times per day. Extra checks may also be done anytime the child is feeling symptoms of high or low blood glucose, before and after activity, or when eating extra snacks. The individual care plan should indicate that key time points for each individual child.

Some children may use continuous glucose monitoring (CGM) systems. A small sensor is inserted under the skin each week and is attached to a transmitter that will automatically relay glucose readings to an insulin pump or receiver for viewing.

Children utilizing these devices may still be required to do a finger-stick test to validate the sensor reading or to calibrate the pump/receiver. The CGM is essentially like a video as compared to a snapshot using a glucose meter and can provide minute to minute information on blood glucose trends.

# Management of Diabetes in Schools

The goal of managing diabetes is to keep the blood glucose/blood sugar levels in the healthy range. A doctor will determine the target range for each individual child. Each student with diabetes should have an Individual Diabetes Care Plan, (IDCP) updated as required, on file at the school. The identity of a child with diabetes must be shared with all staff in the school (both core and extended day). The IDCP must be made available to all staff in regular contact with the child. As children develop independent management strategies, they will have varied awareness of their blood sugar targets.

## **Managing Diabetes in Schools**

The principal is required to ensure that all appropriate staff are informed. The following steps are encouraged and will be supported by the District.

1. Support for a student with diabetes at school will be guided by the Individual Diabetes Care Plan (IDCP). CHEO will guide the development of the IDCP in conjunction with the parent/guardian and student for all newly diagnosed students. Should a student already diagnosed with diabetes in the school require a change to their insulin regime and need a new IDCP, CHEO will alert parents to provide the school with the revised IDCP. If a conflict between the school and the parent/student occurs with regard to the IDCP, CHEO will facilitate discussion on an as needed basis.
2. On registration, or as soon as possible following the start of school, or as soon as possible following diagnosis, the student's IDCP should be provided to the school by the parent/student.
3. It is not necessary for a new Individual Diabetes Care Plan to be filed at the beginning of each year. The care plan kept on file by the school will guide all in-school management for the student. The school must be informed of any changes to the IDCP. The parent/guardian may, in discussion with the school, modify the IDCP to encourage more independence or to recognize the changing capacities of the student to manage their own diabetes.
4. The principal must make the student's Individual Diabetes Care Plan available to staff in regular contact with the student. The principal must also ensure that occasional teachers and casual EAs and ECEs have access to the required and relevant information.
5. The principal, in collaboration with parents and school personnel, will establish an in-school blood sugar monitoring plan to meet the student's needs. This plan will be derived from the student's Individual Diabetes Care Plan..
6. The principal, through the staff, will permit the student or assigned trained personnel to check blood sugar conveniently and safely, wherever the student is located in the school, or, if preferred by the student, in a safe and private location.

7. Staff and the student will be aware of a protocol providing for the safe disposal of lancets and needles. In the case of a student who is not able to safely self-test due to age or ability, staff will have to use a lancet and/or lancing device. This action represents a reasonable standard of care and would be deemed as 'suitable accommodation' for the student.
8. During examinations, tests and quizzes, accommodations for students with diabetes must be allowed. Accommodations should also be made during field trips, sporting and other extracurricular events. These would include, where appropriate, additional time, a blood glucose meter, hypoglycemia treatment, additional drinks, bathroom breaks and snacks as required.
9. The principal, with the staff involved, will ensure the student's diabetes kit and sugar monitoring supplies are available to him/her at all times and will notify the parent/guardian if the blood sugar monitoring supplies need to be replenished. The principal should also notify the parent/guardian if there is a concern regarding the working order of the blood glucose meter or expired supplies. In addition, the principal, along with all school personnel in contact with the student on a regular basis, should commit to some ongoing communication with the parent/guardian to ensure the health, safety well-being and inclusion of the student in school life. This ongoing communication could include some or all of the following:
  - a) any issues of concern related to the student's diabetes management in school;
  - b) any reporting of incidents of hypoglycemia/hyperglycemia that required assistance;
  - c) where possible informing the parent/guardian in advance of any predictable change to the usual school routine, including but not limited to, changes in physical activity schedules, field trips, changes in school lunch or recess times, and special activity days;
  - d) the dissemination of specific information to staff members regarding individual students with diabetes; and
  - e) the publication of more general information about diabetes for the school council, students' council and other school organizations as appropriate.
10. The *OCDSB Guidelines for Creating Safe and Healthy Schools for Students with Diabetes* should be reviewed with staff and the school council on an annual basis and a copy located and readily available in the classroom of any student with diabetes. A copy should also be located in the office.
11. To prevent the spread of infection of any type, when aiding a student with blood glucose monitoring school personnel must employ good hygiene practices and appropriate first aid procedures (for example, use of rubber gloves).
12. During examinations, tests and quizzes, in the event of a hypoglycemic event in the half hour preceding or at any time during an exam, a student should be granted an

additional 30-60 minutes as needed to allow for cognitive recovery from hypoglycemia.

13. Parents/guardians should always provide the school with information on how to reach them on short notice to advise or assist staff regarding emergency arrangements including transportation to hospital. Current and accurate telephone numbers for parents/guardians and designated emergency contacts must be on file in the office.
14. Parents/guardians will authorize the release of relevant information to those who may be involved in the care of the student by signing OCDSB 902: Diabetes Emergency Treatment Protocol Registration.

## What happens if blood sugar levels are outside of the healthy range?

### Hyperglycemia and Hypoglycemia

**Hyperglycemia (high blood sugar)** alone is not an emergency condition, however, when associated with vomiting, requires emergency assistance. Please refer to the sample Individual Diabetes Care Plan for more information on signs symptoms and treatment for students, including those students who are managed by a pump. The earliest and most obvious symptoms are increased thirst and urination.

If noticed these should be communicated to parents to assist them in long term treatment. In the classroom, the behaviour of students with hyperglycemia may mistakenly be taken as misbehaviour (i.e. frequent requests to go to the bathroom, requests for frequent drinks, irritability and/or lack of focus).

**Hypoglycemia (low blood sugar)** is a **medical emergency situation** caused by **LOW** blood sugar. The situation can develop within minutes of the child appearing healthy and normal. **In all cases refer to the student's Individual Diabetes Care Plan**

**Mild to moderate hypoglycemia** is common in the school setting. School personnel need to know the causes, symptoms and treatment of hypoglycemia (see chart below). 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.

**Severe Hypoglycemia** is associated with loss of consciousness and/or seizure. It most commonly occurs at night. Severe hypoglycemia is rare in a school setting with appropriate response to mild to moderate hypoglycemia aligned with the Individual Diabetes Care Plan.

When severe hypoglycemia occurs and the student is unconscious or unable to swallow:

- do not give food or drink
- roll the student on his/her side
- call 9-1-1
- rub fast acting gel or icing sugar on the inside of student's cheek
- contact parents/guardians
- notify OCDSB Emergency Line

## HYPOGLYCEMIA AT A GLANCE

Hypoglycemia causes	Symptoms	Treatment
<p>Low blood sugar usually develops as a result of one or more of the following:</p> <ul style="list-style-type: none"> <li>• insufficient food due to delayed or missed meal</li> <li>• more exercise or activity than usual without a corresponding increase in food; and or</li> <li>• too much insulin</li> </ul>	<p>A person who is experiencing hypoglycemia will exhibit some of the following signs:</p> <ul style="list-style-type: none"> <li>• cold, clammy or sweaty skin</li> <li>• pallor (paleness)</li> <li>• shakiness, lack of coordination, irritability,</li> <li>• lethargy</li> <li>• sluggishness, feeling of weakness</li> <li>• eventually fainting and unconsciousness</li> </ul> <p>In addition the child may complain of:</p> <ul style="list-style-type: none"> <li>• nervousness</li> <li>• excessive hunger</li> <li>• headache</li> <li>• blurred vision and dizziness</li> </ul>	<p>It is imperative at the first sign of hypoglycemia you have the student test their blood sugar if they are able. If unable, treat as a low blood sugar anyway. <b>Give rapid acting sugar immediately</b></p> <p>The sugar can be in the form of:</p> <ul style="list-style-type: none"> <li>• juice/pop (not diet)</li> <li>• lifesavers</li> <li>• glucose tabs</li> <li>• rapid acting sugar or sugar gel pack or icing sugar on the inside of the student's cheek (as directed in the student's Individual Diabetes Care Plan)</li> </ul>

**\*Please note school staff do not give glucagon injections**

Note: In the event of an emergency, an ambulance will be called even if parents/guardians cannot be reached.

*Each teacher/ECE/EA of a student with diabetes must know how to recognize the symptoms and administer initial treatment for hypoglycemia. Regardless of age, a student must not be left alone when hypoglycemia is suspected.*

***In the event of severe hypoglycemia schools must call 911.***

*Fast acting sugar such as icing sugar or glucose from the Diabetes "Safe" kit can be applied to the inside of the cheek. School employees should be aware that they will not be found liable if they take reasonable steps to assist a student with diabetes in an emergency situation.*

# Roles and Responsibilities

## **Responsibilities of the School Principal**

**It is the responsibility of the school Principal/Early Learning Manager to:**

- a) identify any student with diabetes for staff;
- b) meet with parents to discuss their child's Individual Diabetes Care Plan;
- c) ensure that the Individual Diabetes Care Plan is included in the OSR, posted with other students with life threatening allergies, distributed to teachers, EAs, and ECEs office and casual staff as appropriate and posted in key locations;
- d) ensure that staff have training appropriate to their involvement with the student. This training includes the reading of the OCDSB Guidelines for Creating Safe and Healthy Schools for Students with Diabetes and the viewing of a training video produced by CHEO on blood glucose monitoring;
- e) approve the location for the student's diabetes safe kit and making this information available to all appropriate staff;
- f) ensure staff and students are aware of the location of the sharps container and of appropriate disposal protocols; and
- g) maintain communication with the parent/guardian to ensure ongoing support for the student.

## **Responsibilities of School Staff**

**It is the responsibility of the school staff in regular contact with a student with diabetes to:**

- a) read the *OCDSB Guidelines for Creating Safe and Healthy Schools for Students with Diabetes* and have a copy in the student's classroom as a resource for all classroom staff;
- b) ensure that changes in regular school activity that affect the amount of activity or food available to the student are managed in alignment with the student's Individual Diabetes Care Plan and in co-operation with the student;
- c) allow the student to regularly and often monitor blood glucose levels in a safe place;
- d) verify the location of the student's diabetes kit;
- e) understand the symptoms and treatment of hypoglycemia and hyperglycemia as they affect both immediate health and classroom behaviour;
- f) provide opportunities for students to deal with symptoms as necessary, including frequent access to washrooms or drinking water;
- g) ensure that OTs and others who may be occasionally supervising the student with diabetes are aware of the diabetes safe kit, the Individual Diabetes Care Plan and any other information. This should also be contained in the OT handbook;
- h) attend any training offered by the school or District; and
- i) provide assistance to student to ensure diabetes safe kit is available at all times eg. school trips and to communicate to parents if supplies are needed.

## **Responsibilities of Parents/Guardians**

### **It is the responsibility of parents/guardians to:**

- a) provide a copy of the student's Individual Diabetes Care Plan to the school, review the Individual Diabetes Care Plan at the start of every school year and sign to confirm no change;
- b) review with the school the IDCP whenever changes to the student's insulin or diabetes management regimen are made;
- c) ensure that the student's blood glucose meter is in good working order with sufficient supplies on a daily basis;
- d) inform school personnel of any changes to the student's routine that would mean a change from the Individual Diabetes Care Plan;
- e) ensure that the student's diabetes safe kit is supplied with all necessary emergency treatment;
- f) provide all snacks, emergency snacks and fast-acting glucose for the management of the student's diabetes and treating hypoglycemia;
- g) encourage the student, in so far as is possible, to:
  - i. an age appropriate understanding of the causes, identification, prevention and treatment of low blood glucose
  - ii. recognize the first symptoms of low blood glucose
  - iii. communicate clearly to adults/those in authority that he/she has diabetes and when feeling a reaction starting or a general feeling of not being well
  - iv. be responsible for all treatment apparatus, including proper disposal
  - v. report bullying and threats to an adult in authority so age-appropriate strategies can be provided
  - vi. eat only foods approved by parents; and
  - vii. take as much responsibility as possible for his or her own safety; and
- h) provide all emergency contact names and numbers to the school.

## **Responsibilities of a Student with Diabetes**

### **It is the responsibility of a student with diabetes to:**

(As appropriate for the student)

- a) have an age or ability appropriate understanding of their diabetes;
- b) recognize symptoms of a low blood sugar reaction and treating the symptoms age appropriately;
- c) take responsibility for good eating habits;
- d) have a diabetes safe kit (e.g., supply of rapid acting sugar such as oral glucose, orange juice, etc.) at school, notifying school personnel when supplies are low, and reminding staff that the safe kit is taken on all school outings;
- e) bring and look after glucose monitoring, blood testing, insulin injection, and the safe disposal of lancets and needles after self-testing;
- f) provide self administration of appropriate low blood glucose treatment when possible;
- g) inform an adult as soon as symptoms appear; and
- h) wear his/her Medic Alert identification (if applicable) at all times during the school day.

## **Additional responsibilities of the Extended Day Program staff**

Staff should ensure information related to Diabetes Management and the Individual Diabetes Care Plan is shared with other sites when the student will be in a different location (i.e., December Break, March Break, Summer Break)

# Glossary/Key Definitions

**Blood Glucose (BG) level** refers to the amount of sugar found in the blood.

**Blood Glucose monitoring/self-monitor blood glucose (SMBG)/monitor** refers to the student's practice of monitoring their blood sugar often and regularly with a drop of blood on a blood glucose test strip inserted into a glucose meter. Students with diabetes are encouraged to keep their meter with them.

**Continuous Glucose Monitoring System (CGM)** refers to a device that has a small sensor inserted under the skin and provides a blood glucose reading every 5 minutes.

**Diabetes Kit (or Hypokit or Safe kit)** refers to the assembly of materials for the emergency treatment of high or low blood sugar (particularly low—hypoglycemia) and any other equipment or support the parents/guardians provide in accordance with the student's Individual diabetes Care Plan.

**Diabetic Ketoacidosis (DKA)** refers to a serious complication of diabetes associated with high blood sugar, abdominal pain, nausea, vomiting and ketones (fruity smelling breath). If left untreated, it can be life threatening.

**Diabetes Mellitus also known as Type 1 or Juvenile Diabetes**, refers to a medical condition that results from the inability of the pancreas to produce insulin leading to abnormally high glucose (sugar) levels in the blood.

**Fast-acting Glucose** refers to a rapidly absorbed source of carbohydrate to eat or drink for the treatment of mild to moderate hypoglycemia. A source of fast acting glucose should be kept with or near a student with diabetes at all times.

**Glucagon** is a hormone that raises blood glucose. An injectable form of glucagon is used to treat severe hypoglycemia.

**Glucometer** refers to a medical device used to measure the concentration of sugar in the blood.

**Glucose** refers to the fuel that the body needs to produce energy. Glucose (sugar) comes from carbohydrates such as breads, cereal, fruit and milk.

**Hyperglycemia “high blood glucose”** refers to the condition which occurs when the amount of blood glucose (sugar) is higher than an individual's target range. An urgent response to hyperglycemia may be necessary.

**Hypoglycemia “low blood glucose” (mild or moderate)** refers to an urgent and potentially emergency situation which occurs when the amount of blood glucose (sugar) has dropped below an individual's target range. Hypoglycemia requires treatment with fast acting glucose and rechecking of blood sugar until levels have stabilized within the target range. Hypoglycemia can be a result of an individual having injected too much insulin, or eaten too little food, or exercised without extra food.

**Hypoglycemia (severe)** refers to an urgent and life threatening situation requiring assistance of another person and an emergency response. Symptoms include fainting, seizure, and difficulty speaking.

**Individual Diabetes Care Plan (IDCP)** refers to the standardized document completed by CHEO that includes details of the student's condition and specific care directions.

**Insulin** refers to the hormone that is required to 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, people with type 1 diabetes must administer insulin by syringe, insulin pen or insulin pump.

**Insulin Pen** refers to a device for injecting insulin for the treatment of diabetes.

**Insulin Pump** refers to a device used to administer insulin continuously through a small tube inserted under the skin. The same device is also used to give the extra insulin needed with meals or to correct high blood glucose levels.

**Ketones** refer to the compounds produced by the body when there is no insulin or not enough insulin in the body. Ketones can make a diabetic student feel sick and can lead to a serious illness (DKA). Ketones should be checked using a blood ketone meter or urine ketone strips when blood sugar is high (above 13.9mmol/L)

**Lancets** refer to the small, sharp objects that are used to prick the skin. Lancets are designed to only be used once, and then disposed of in a safe way. Lancets must be disposed of safely in a sharps container as they can carry infection.

**Lancing** refers to an essential part of successful diabetes management for many people with diabetes. This piercing of the skin draws a small drop of blood to the surface in order to test blood glucose levels using a blood glucose monitor and blood glucose test strips. Although some diabetics prick themselves with a lancet, many prefer to use a special lancing device. **Lancing devices** are designed to firmly grip the lancet, and are operated by simply clicking a button.

**Sharps** refer to used syringes, insulin pen needles for insulin administration, and lancets for blood glucose monitoring that must be disposed of carefully in appropriate containers.

**Target Range** refers to acceptable blood sugar levels personalized for the student in the Individual Diabetes Care Plan but based on the Canadian Diabetes Association Clinical Practice Guidelines.

**Type 2 Diabetes** refers to a condition rarer in young people than adults in which the pancreas does not produce enough insulin or does not properly use the insulin it makes.



<p><b>ACTIVITY PLAN</b> (To help prevent a low blood sugar).</p>	<p>Please indicate what the student must do prior to exercise to help prevent a low blood sugar (i.e. take food or test )</p> <p>1. Before exercise: _____</p> <p>2. During exercise: _____</p> <p>3. After exercise: _____</p> <p>* If activity is cancelled please consult OCDSB plan and call parents Student's blood testing meter kit and fast acting sugar should always be on hand during exercise activities.</p>
<p><b>ILLNESS</b></p>	<p>Call parent if student vomits. If the child has persistent vomiting and a BG of &lt;4 or &gt;17, he/she may need to be taken to the hospital, try to reach contacts asap</p>
<p><b>Diabetes “Safe” Kit- TO BE KEPT AT SCHOOL</b> (RESPONSIBILITY OF THE PARENT to maintain supplies) (RESPONSIBILITY OF THE SCHOOL STAFF to ensure it is accessible at all times eg. field trips, lockdowns and fire drills)</p>	<p>Several kits may be available in different locations:</p> <ul style="list-style-type: none"> <li>€ Fast-acting sugar, carbohydrate snack in emergency - “Hypo Kit”</li> <li>€ Gel or Icing sugar for Severe low</li> <li>€ Blood glucose meter and test strips, lancets.</li> <li>€ Insulin pen, pen needles or syringe, insulin (in case of pump failure).</li> <li>€ Contact numbers</li> </ul> <p>Location(s) of the above items as a Kit: _____</p>
<p><b>MANAGING LOW BLOOD GLUCOSE (HYPOGLYCEMIA)</b>  <b>BG less than 4 mmol/L</b></p>	<p><b>Usual symptoms of hypoglycemia for this child are:</b></p> <ul style="list-style-type: none"> <li>€ shaky                      € irritable/grouchy                      € dizzy</li> <li>€ sweating                      € headache                      € blurred vision</li> <li>€ hungry                      € weak/fatigue                      € fast heartbeat</li> <li>€ pale                      € anxious                      € other</li> </ul> <p><b>Steps to take for mild hypoglycemia (symptoms above, student is responsive):</b></p> <ol style="list-style-type: none"> <li>1. Check BG, give ____ grams of fast acting carbohydrate (eg, ½ cup juice, 4 tablets, 15 skittles)</li> <li>2. Recheck BG in 15 minutes</li> <li>3. If still below 4 mmol/L, repeat steps 1 and 2</li> </ol> <p><b>Steps for severe hypoglycemia (student is unconscious/unresponsive)</b> <b>Steps for severe hypoglycemia (student is unconscious/unresponsive)</b></p> <ol style="list-style-type: none"> <li>1. Place the student on their side in the recovery position, rub gel/icing sugar to inside of cheek.</li> <li>2. Call 911, Do not give food or drink(choking hazard)Supervise students closely while waiting for EMS</li> <li>3. School Admin to implement plan for parent notification</li> </ol>
<p><b>MANAGING VERY HIGH BLOOD GLUCOSE (HYPERGLYCEMIA)</b>  <b>BG higher than _____ mmol/L</b></p>	<p><b>Usual symptom of hyperglycemia for this child are:</b></p> <ul style="list-style-type: none"> <li>€ extreme thirst                      € excessive voiding                      € headache</li> <li>€ hungry                      € abdominal pain                      € blurred vision</li> <li>€ warm, flushed skin                      € other _____</li> </ul> <p><b>Severe Hyperglycemia: notify parents immediately</b></p> <ul style="list-style-type: none"> <li>€ rapid, shallow breathing                      € Vomiting                      € Fruity breath</li> </ul>

	<p><b>Treatment of hyperglycemia</b></p> <ul style="list-style-type: none"> <li>€ Provide water/ sugar-free fluids      € Delay exercise      € Insulin by pump(parent decision)</li> <li>€ Provide carbohydrate-free snacks if hungry</li> <li>€ If possible and supplies provided by parents, check urine or blood for ketones. If positive, parents must be called</li> <li>€ Inform parents. If child is unwell, notify right away. If incidental finding of high BG at a meal time and child is otherwise well, can inform them through agenda or pre-planned communication strategy as follows:</li> </ul>
<p><b>Special Needs:</b> A child with special considerations may require more assistance than outlined in plan</p>	<p><b>Comments;</b></p>

Parent/Guardian: \_\_\_\_\_ Date: \_\_\_\_\_

School Personnel: \_\_\_\_\_ Date: \_\_\_\_\_

Diabetes Nurse Educator/ Dietitian (optional) \_\_\_\_\_ Date: \_\_\_\_\_



**DAILY COMMUNICATION CARD**

THIS DAILY COMMUNICATION CARD CAN BE USED BY PARENTS AND SCHOOL STAFF TO COMMUNICATE EACH DAY:

Student Name:				
Day/ Date:	€ 1 <sup>st</sup> nutrition break € Morning break	€ Lunch	€ 2 <sup>nd</sup> nutrition break € Afternoon break	€ After school
Food: e.g. grams of carbohydrate				
Blood sugar				
Activity				
Comment/Staff initial				

Note This information may also be provided in the student's daily agenda.



1

**Every Student is unique**

Each student with diabetes may have different symptoms of a low blood sugar

2

**Occasional teachers and casual ECEs and EAs need information.**

Make sure all occasional teachers and casual ECEs and EAs are informed that they have a student with type 1 diabetes in their classroom and share the Individual Diabetes Care Plan with them.

3

**Don't draw unnecessary attention to your student's condition**

Students with diabetes want to be just like anyone else

4.

**Don't put a label on the student with diabetes**

Do not blame diabetes for everything. We all have bad days!

5

**Always be prepared**

Always carry fast-acting sugar everywhere including recess, fire drills, field trips, special presentations & assembly.

6.

**Be patient**

High & low blood sugars can make it difficult for the student to concentrate, including during tests and exams.

7.

**Keep the lines of communication open**

Regular communication with the student's parents is important. Using a method to regularly communicate the blood sugar readings can be very helpful

8

**Consistency**

Always inform parents when there will be changes to the daily routine especially if snacks or activity times will be changed.

9.

**Support Classmates**

Make sure classmates understand why the student with diabetes may be eating and drinking in class at times when it is not usually permitted

10

**All school staff should know:**

Which student(s) has/have type 1 diabetes

What a low blood sugar is

How to respond to low blood sugar

# Hypoglycemia: Signs and Symptoms

TREMBLING



BLURRED VISION



HEADACHES



SWEATING



MOOD CHANGES



DIZZINESS



EXTREME TIREDNESS & PALENESS



HUNGER



# Hypoglycemia: How to keep a student with type 1 diabetes safe

The most likely emergency situation likely for a student with Type 1 diabetes is hypoglycemia or low blood sugar also known as insulin shock. A low blood sugar means that the level of sugar present in the blood is inadequate for the brain to function properly. When the brain detects low blood sugar it sends signals to the student to alert them. In the student's Individual Diabetes care plan there should be a description of how the student presents with a low blood sugar. Each student will exhibit their own unique symptoms. There should also be instructions about how to proceed but there are general guidelines to follow. Low blood sugars can occur at any time and in any place. They are not always

**Know which student has type 1 diabetes :** Encourage the student to wear a medic alert bracelet

predictable or preventable so being aware and prepared is key.

**Be alert to the changes that signal a low blood sugar** If the student looks unwell, acts strangely or states they feel low, stay with them and allow the student to check their

**Know how to treat a low blood sugar:** At the first sign of a low blood sugar allow the student to check their blood sugar level using their meter

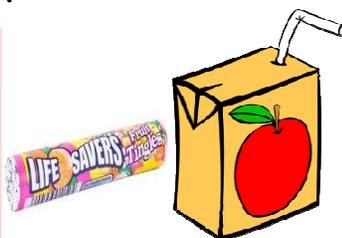
If the reading on the meter is below 4.0 ensure the student takes their fast acting sugar immediately.

Some examples are:

175mls (6oz) juice or pop (not diet)

or 5-6 Lifesavers

or 3 glucose tablets or as directed by parent



**Understand that the student is in a very vulnerable state when their blood sugar is low.**

The student whose blood sugar is low may not be able to think clearly. They need to be supervised, by an adult, until they feel better. This can take up to 15 minutes. If the student doesn't feel better after 15 minutes ask them to recheck their blood sugar level. If the reading is still below 4.0 repeat the above action and call their parents.

**If in doubt manage as a low blood sugar** - If the student looks unwell, acts strangely or states they feel low and is unable to check their blood sugar, manage the situation as a low blood sugar.

**Know what might cause a low blood sugar:** Insufficient food due to a delayed or missed meal · More exercise than usual · Too much insulin

# Hyperglycemia: Signs and Symptoms (high blood sugar)

DROWSINESS



FREQUENT URGE TO URINATE



EXTREME THIRST



DRY MOUTH



FREQUENT BED WETTING



BLURRED VISION



### What can cause a high blood sugar?

- Too much food
- Illness
- Stress
- Growth spurts
- Less than the usual amount of exercise (indoor recess, assemblies, presentations, examinations etc)
- Not enough insulin / insulin pump not working
- Sometimes we don't know why the blood sugar is too high!



### What can I do to help the student whose blood sugar is too high?

Understand that the student may feel unwell when their blood sugar level is high.  
Understand that these symptoms are beyond the control of the student

- Allow the student to check their blood sugar since symptoms of high blood sugar can be confused with symptoms of low blood sugar
  - Allow the student to drink water at their desk
  - Allow the student to have open bathroom privileges
  - Understand that the student may feel irritable & tired, which can impact their academic performance
  - See the student's school diabetes plan, since parents may need to be notified
- Do NOT use exercise to lower blood sugar as this could potentially make the blood sugar go higher

It is not always easy to control blood sugars using injected insulin. Inevitably there will be times when the student experiences blood sugar levels that are too high. A blood sugar level that is greater than 14 (>14) is usually considered too high, but always refer to the student's Individual Diabetes Care Plan for their parameters. The earliest and most obvious symptoms of high blood sugar are increased thirst and urination. A high blood sugar is NOT usually an emergency, but may require classroom accommodation(s).

## Resources

[http://www.trilliumhealthcentre.org/programs\\_services/womens\\_childrens\\_services/childrensHealth/familyCareCentre/media/diabetesmov.html](http://www.trilliumhealthcentre.org/programs_services/womens_childrens_services/childrensHealth/familyCareCentre/media/diabetesmov.html)

*A Survival Guide –diabetes in children and teens* –Supporting students with Type 1 diabetes in the Classroom- produced by the Trillium Health Centre, 2007

[http://www.trilliumhealthcentre.org/programs\\_services/womens\\_childrens\\_services/childrensHealth/familyCareCentre/paediatricDiabetesClinic.html](http://www.trilliumhealthcentre.org/programs_services/womens_childrens_services/childrensHealth/familyCareCentre/paediatricDiabetesClinic.html)

**Canadian Diabetes Association.** *Guidelines for the Care of Students Living with Diabetes at School* (September 2014): <http://www.diabetes.ca/getmedia/173678f6-1a4a-4237-bd55-aa7ba469a602/guidelines-for-students-in-school.pdf.aspx>

B.C. Children’s Hospital- Online module for educators, “Taking Care of Diabetes at School”; <http://www.bcchildrens.ca/Services/SpecializedPediatrics/EndocrinologyDiabetesUnit/ForProfessionals/TakingCareOfDiabetesAtSchool.htm>

International Diabetes Federation School Toolkit; Available online at; <http://www.idf.org/education/kids>

- **International Diabetes Federation:** Kids and Diabetes in School (KiDS) program includes information package in eight languages, suitable for downloading and printing, as well as an app. Each product has sections for parents of children with diabetes, parents in general, children, and school staff: <http://www.idf.org/education/kids>

Canadian Paediatric Society/ Canadian Pediatric Endocrine Group Joint Position Statement. Managing type 1 diabetes in school: Recommendations for policy and practice . <http://www.cps.ca/en/documents/position/type-1-diabetes-in-school>

- **IWK Health Centre Pediatric Diabetes Team in Halifax.** Online video training modules for school staff, three modules from 9 to 13 minutes each: <http://www.iwk.nshealth.ca/page/video-diabetes-school>