

Practice Procedure for the Administration and Care of a Student with Type 1 Diabetes in the Educational Setting

1.0 Purpose

- The purpose of these guidelines is to provide direction on safe practice for diabetes care in the school setting.
- To provide support to those required to provide diabetes care to students while at school.

2.0 Scope

- These guidelines refer to all services where diabetes care is provided within the school environment.

3.0 Background

- Children with diabetes require 2-5 insulin injections daily and at least 4 blood sugar checks daily.
- They need to eat 3 meals and 2-3 snacks a day with specific amounts of carbohydrate at specific times – one usually just before morning recess and one at afternoon recess or as soon as they get home
- Some children want privacy when needing to check their blood sugars and others are open about it

4.0 Recommendations and Education Requirements

- It is recommended that all staff working with students who have diabetes keep their knowledge current by reviewing the resource book provided as it pertains to the checking of blood sugar, injections of insulin, and counting carbohydrates.
- It is recommended that the student's caregiver provide any information pertinent regarding the care of the student with diabetes, supplies required changes in care, or special instructions and complete a School Action plan at the beginning of each school year with updates to the plan as required.
- It is recommended that the student's caregiver, the school employees, and any other identified partners attend an annual case conference to review the practice procedure as well as emergency plan for each individual student at the beginning of each school year and as needed.
- It is recommended that the school division provide training to staff on how to check blood sugar levels and administer insulin if this is not within their professional scope of practice. For instance, Registered Nurses are trained in the checking of blood sugar and administration of insulin and will not require further inservice, however, Educational Associates will require training.
- Educational Associates will receive both theory and hands on training when they are required to check blood sugar levels and administer insulin. A refresher session will be provided at the beginning of each school year for those involved in the care of the students with diabetes.

5.0 Food and Activity in School

- Food is carefully timed and measured to support blood sugar control and parents should provide all snacks and lunch. For smaller students, they should be pre-bagged and labeled with correct times to eat and carb amounts of snack. Calculation of carbohydrate content is the responsibility of the parent.
- Parents should also provide fast acting juice or glucose tablets and check to prevent supplies from running low

- If planning a school party, notify parents so they can provide a suitable party food or incorporate carbs of party food into child's carb targets.
- Children with diabetes should participate in all kinds of activities; however, they may require a small amount of fast acting carbohydrate prior to the activity.

6.0 Contact with parents

- At the beginning of the school year to verify Action Plan; during school year with any changes to Action Plan.
- Communication binder or duotang with record of school actions, i.e. blood sugars done and recorded; low blood sugar treatments; changes to carb and any other events that would assist the parents in the overall management.
- Advance notice of extracurricular trips away from the school or special parties with food.
- When juice supplies or glucose supplies are running out.
- For any questions or concerns. Parents are their child's best diabetes expert.

A. SCHOOL ACTION PLAN

DRAFT Until Discussed with Parent

School Year _____

The following is an individual school action plan for the student with diabetes. This document is a template only and needs to be discussed and planned with the child's parents. For further information, see resources at the end.

Plan for: _____

Daily Routine: This is an example only and should be tailored to the individual child, depending on age and abilities.

Time	Task	Action to Take (to be completed by parent/guardian)	Who is Responsible (to be completed by school)										
Insert recess time	<ul style="list-style-type: none"> • Check blood sugar (if parent's request this as a routine check) – see page 42 for procedure. • Practice universal precautions when using lancet device and disposing of lancet in sharp's container. Have sharps container close. 	<table border="0"> <tr> <td>Blood Sugar</td> <td>Action</td> </tr> <tr> <td>Under</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>More than</td> <td>_____</td> </tr> </table>	Blood Sugar	Action	Under	_____	Between	_____	Between	_____	More than	_____	_____ will assist as needed to check blood sugar and/or act on result (There needs to be a backup person assigned to supervise if usual staff is away from school)
Blood Sugar	Action												
Under	_____												
Between	_____												
Between	_____												
More than	_____												
10:15 am	Snack _____ target carbs (it is okay to be above or below by 5 gms target).	Ensure that child eats snack	EA, Teacher or mutually agreed upon staff member to prompt, assist, and supervise all carb is taken at correct times. Same staff member communicates with parent(s) regarding special occasion food included and how/when.										
Noon (____time)	<ul style="list-style-type: none"> • Check blood sugar • Eat Noon lunch 	<table border="0"> <tr> <td>Blood Sugar</td> <td>Action</td> </tr> <tr> <td>Under</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>More than</td> <td>_____</td> </tr> </table>	Blood Sugar	Action	Under	_____	Between	_____	Between	_____	More than	_____	Designate responsibility
Blood Sugar	Action												
Under	_____												
Between	_____												
Between	_____												
More than	_____												
2:00 p.m.	<ul style="list-style-type: none"> • Check blood sugar (if parent's request this as a routine check) • Eat Snack carbs 	<table border="0"> <tr> <td>Blood Sugar</td> <td>Action</td> </tr> <tr> <td>Under</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>Between</td> <td>_____</td> </tr> <tr> <td>More than</td> <td>_____</td> </tr> </table>	Blood Sugar	Action	Under	_____	Between	_____	Between	_____	More than	_____	Designate responsibility
Blood Sugar	Action												
Under	_____												
Between	_____												
Between	_____												
More than	_____												

B. PROCEDURE USED TO CHECK BLOOD SUGAR USING A BLOOD SUGAR METER

Example used is an Aviva meter and Multiclix lancet device. Demonstration of meter use should be provided and instruction book for meter left with the meter.

C. LOW BLOOD SUGAR SYMPTOMS AND TREATMENT

Low blood sugar – can occur because of too much insulin, a delayed or missed meal, or more activity than usual without extra carbohydrate food. This can develop in minutes of the child appearing fine. Each child will be individual with this and parents are the best ones to ask for their child’s usual symptoms. Younger children may not always have symptoms. Generally symptoms begin to occur when the blood sugar check shows a number of less than or equal to 4.0 mmol/l. If at any time low blood sugar symptoms are suspected, a blood sugar check should be done right away.

** Never leave the child with diabetes alone in a low blood sugar situation. If for some reason the child does not have some form of treatment with them, send someone else to get the fast acting sugar.*

i. Symptoms of low blood sugar

Stage 1 Low blood sugar symptoms

- Cold, clammy or sweaty skin
- Pallor
- Difficulty concentrating
- Shakiness, lack of coordination
(i.e.: deterioration of writing or printing skills)
- Excessive hunger
- Nervousness
- Headache
- Blurred vision and dizziness
- Irritability

Stage 2 Low blood sugar symptoms

- Usually a progression of Stage 1 and generally shows a lack of concentration and/or confusion. At this stage, treatment can still occur by mouth but the child may need support to do this. The adult must assess that it is safe to be giving the treatment by mouth.

Stage 3 Low blood sugar

Note: Very uncommon in a school setting, however, one must know what to do should it occur

- If the child is unconscious or experiencing seizures, activate your school emergency protocol, i.e. call 911
- Put the child on his/her side to prevent choking
- Immediately after, contact the parents or the emergency contact person

Glucagon is an injectable medication that can be injected for a Stage 3 low blood sugar. Ask the parents for more information on this as some schools may be able to administer this and other schools cannot. The parent should give direction on how they want a Stage 3 low blood sugar handled, i.e. call 911, then call parent, etc.

ii. Treatment of low blood sugar

iii. Action as a result of checking blood sugar

- If the blood sugar result is 4.0 or less, the staff will immediately give 10 gms of fast-acting carbohydrate and remain with the child.
- Examples of 10 gms of carb are:
 - 125 mls of unsweetened orange juice
 - OR 75 mls unsweetened apple juice
 - OR 10 gms worth of DEX glucose tablets (each tab is worth 4 gms of carb so 2 ½ tablets chewed up by child)

The treatment should be effective, i.e. the child is feeling better in 3-5 minutes. If not, the same treatment can be repeated, i.e. 10 gms more OR the blood sugar can be re-checked. If the blood sugar is less than or equal to 4.0 mmol/l, repeat treatment. If the low blood sugar has happened during activity, allow the child to sit out the activity for a few minutes to feel better. If the low blood sugar has happened before a meal, allow the treatment to work before beginning a meal.

Note: These carbs are boosters, and do not count into lunchtime carbs and are not subtracted from snack or lunch carbs.

iv. Extra times to check the blood sugar

*** There may be times when the blood sugar level should be checked outside of the routine checking times identified by the parents. Examples of deciding whether a blood sugar check is warranted would be: suspicion of low blood sugar, knowledge that the child was not able to eat all carbs at the previous snack or meal; or more activity than usual. This can occur between meal times but most commonly would occur close to lunch or after an activity. A blood sugar check should be performed and recorded. If the blood sugar is **below 4.0**, use the low blood sugar treatment protocol. Be sure to record and send information home in communication binder.

D. HIGH BLOOD SUGAR is usually not an emergency situation. It can be the result of more carbs than usual, not matched with insulin; not enough usual insulin; missed insulin; stress or illness. Symptoms of high blood sugar are:

- Sluggish tired feeling
- Extra thirst
- More frequent urination
- Abdominal pain
- Fruity smell to breath *
- Vomiting *
- These are signs of higher blood sugar and parents should be notified.

As part of the action plan, the parents should provide the blood sugar result at which they should be notified.

E. ILLNESS DAY MANAGEMENT

A potential exists for an emergency depending on what the blood glucose level is at the time and the degree of the illness. Discuss with the parents what the protocol will be. What follows below is an example.

Note: The child's blood sugars may increase with an illness, particularly an illness with a fever OR blood sugars may decrease, particularly with an illness that includes diarrhea or vomiting. It is parent's responsibility to manage this and to notify the staff.

- If the child starts to vomit and does not stop and can't keep or take anything safely by mouth, follow the school protocol for an emergency. In this situation, it will be helpful to check the blood glucose at this time to know if it is low or high.
- If the child becomes unconscious or starts to have seizures, follow protocol for a Stage 3 low blood sugar.

F. SUPPLIES REQUIRED AT SCHOOL

The following supplies must be provided and restocked by the parents on an ongoing basis. It is important to know where these supplies are kept in the school. There should be several locations.

- A glucose meter – must have been verified to be accurate via a lab/meter check
- Glucose strips – in date
- A lancet device with lancets
- A medic alert bracelet which the child must wear at all times
- A disposal container for used needles or lancets
- Supplies for treating low blood sugars
- Supplies of carb for extra activity

If using insulin:

- Pen injector and up-to-date insulin with one extra vial or cartridge as back up
- Alcohol swabs for wiping the top of the insulin cartridge prior to withdrawal of insulin

G. INSULIN USE

Insulin Administration: Example Used: Humapen with Cartridges – Individualize to Specific Device used. (See Appendix B)

H. EXTRA ACTIVITY AND FIELD TRIPS

For scheduled gym and field trips with increased activity (i.e. swimming as an example), the child will require 10 grams of extra carbohydrate for each extra 30 minutes of activity, more than the usual school activity. This is often taken as 125 mls of orange juice or 1 Fruit to Go (10 gms of carb). The staff need to stay with the child to ensure that he/she has consumed this prior to the activity.

For field trips, care needs to be taken that the child has supplies for treating low blood sugar and staff to support the same.

I. TRANSITIONS

All efforts should be made to advise the child and parents of any changes in daily routines including substitute teachers/EA & special activities. In particular, substitute teachers need to be alerted that a child with type 1 diabetes is in the classroom.

J. COMMUNICATION

A method of communication needs to be established. Parents need to know blood sugar results and actions, activity times, and any changes in carbs. A sample record sheet is available in the appendix. It is recommended that the information be shared with the parents on a daily basis.

Example of items recorded:

- Blood sugar result, i.e. 12.0 and time checked
- Action taken with blood sugar result, i.e. 3.0 – glucose tablets given.
- Gym time or other activity
- Insulin: Time, dose, site used and who gave
- Extra information: Any actions which can help the parents understand what has happened during the day. This includes unusual behaviors; field trips with more activity than usual; hunger at certain times of the day that becomes a pattern.

REFERENCES

“Diabetes and School Information”, www.endodiab.bcchildrens.ca

School Information – Live Well Diabetes Program – Pediatric & Young Adult Diabetes Transition Clinics

Looking after Diabetes – publication of the Live Well Program

www.diabetes.ca – Canadian Diabetes Association web site

Appendix A

Procedure for checking blood sugar using an Aviva glucose meter and Multiclix lancet device

Depending on the age of the child, the level of supervision will vary. Discuss with the parents what level your child requires. If a younger child, they can gradually become more involved in doing the procedure.

- Latex or non-latex gloves may be worn.
- Have the child wash his/her hands before starting (to be clean and also to take any food off fingers that may interfere with the result).
- Put a test strip in the Aviva meter, gold stripe up. This turns the meter on. Wait until you see the blood drop symbol before applying blood.
- Take the needle dispenser (Multiclix) that looks like a pen. Turn right back and then push the end of the dispenser to activate the needle. A yellow dot shows up on the button on the side of the dispenser when activated properly.
- Put the needle against the sides of the finger, and then press the yellow button on the side of the dispenser. Gently “milk” the finger for a small drop of blood.
- Point the tip of the strip into the drop and allow the blood to be drawn into the strip. The strip line must be totally filled in order for the test to work properly. If the yellow line is not filled immediately, more blood can be drawn in, within 10 seconds only. Wait for the test results.
- Mark the time and blood sugar number result from the Aviva meter on the child’s record sheet.
- Place the strip, kleenex and gloves in the garbage.

Appendix B

Procedure for measuring and injecting one insulin using a Humulin insulin pen

When performing an injection, think of the 6 R's. Use this guide as a checklist. Always double check the dose with another person.

- Right **P**erson
- Right **I**nsulin – look at label on cartridge of insulin before using
- Right **D**ose of insulin – double check dose with another person, i.e. ask the other person what dose do you see?
- Right **L**ocation – choosing the site for injection – move around within the area, not the same spot in that area all the time
- Right **t**ime of day - you may choose to wear gloves.
- Record dose given

Procedure for using a Humulin insulin pen – verify with parents if pen used dials 1 full unit or ½ unit increments.

1. Take the cap off the insulin pen.
2. Put a new needle on the pen.
3. **Prime each time** by: dialing up 2 units. Point the needle up and push out the insulin. You should see a stream of insulin come out. If not, repeat this step until you see insulin stream out.
4. Dial the number of units you need. If you make a mistake, you can dial backwards to the correct amount. Each click dialed is ____ unit.
5. **Double-check the amount dialed with your co-worker by asking them what amount they see dialed.**

Determining the dosage of insulin

The chart below should be completed by the parents and any changes made to it communicated in writing when made.

An example of an insulin grid for lunchtime insulin

Blood Sugar Result	Units of _____ to Inject (Name of Insulin Used)
Blood sugar less than or equal to _____	_____ units
Blood sugar less than or equal to _____	_____ units
Between Blood sugar less than or equal to _____	_____ units
Blood sugar less than or equal to _____	_____ units

Performing an injection

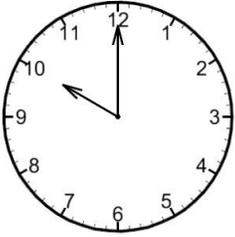
6. Pinch up the skin and fatty layer and quickly put the needle into the skin at a 90 degree angle into the Correct Location - ask parents for location.
7. Hold the pen needle under the skin for a count of 6, then quickly remove the pen. It is normal to see a small drop of blood, drop of insulin, or a bruise occur.
8. If age appropriate, have the child put the cap on the pen, twist it off, and dispose it into the sharps container.

If you accidentally self-inject with a used needle, phone Public Health Immediately 655- 4620 as there is a protocol to follow for needle stick injuries. These can be avoided by following the above procedure and having the sharps container close.

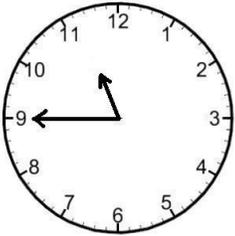
Appendix C
Sample Routine for Child

This is a sample of a chart developed by a school for a 7 year old child.

_____ **Daily Reminders**

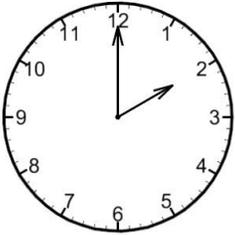


_____ Ask to get a **snack** from my backpack

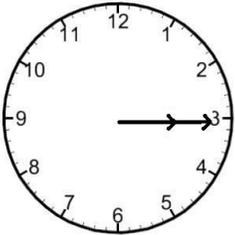


Time: _____ Check blood sugar. If blood sugar number is less than 4.0,

_____ Time to do my insulin and then I need to eat right away. I need to eat everything in my lunch and I cannot trade any of the food my mom sends.



Recess: Ask to get a **snack** from my backpack



3:15 p.m. School is over. I must not forget my backpack.

- **If there is GYM** (or other physical activities like a walk), I need extra carbs for extra activity. This will be in the top right hand drawer of the desk at the back of the room. **I need to eat all of my snacks before joining the activity or using the washroom.**
- **Anytime I am not feeling well, I must immediately let the teacher know that I may be feeling "low."** We may check my blood sugar. The teacher will keep a close eye on me and check how I'm doing. I need to be around an adult until I feel better.
- **Emergency juice boxes are in the staffroom fridge, on a shelf in the gym in the room closest to the right side of the stage, and in my classroom in the top right drawer of the desk at the back of the room.**
- **I must always ask the teacher to use the washroom or get a drink and return as quickly as possible.** If I have to throw up or have diarrhea, I need to tell the teacher and they will call my parents.



Appendix E
**MEDICAL RELEASE/
ADMINISTERING MEDICAL SERVICES**

Student's Name: _____

Date of Birth: ____/____/____
(month/day/year)

Address: _____

Parents/Guardians: _____

Home Telephone: _____ Business Telephone: _____ Cell Phone: _____

Medical Services

Medical Services are (see school action plan for requirements):

Specific time(s) medical services are to be provided (see school action plan for requirements):

_____	_____
_____	_____
_____	_____

Other pertinent information:

Authorization

I hereby request and authorize the administration of medical services for my child as detailed above. I recognize the administration of medical services will be handled by non-medically trained staff. I release school personnel from liability should reactions result from medical services.

Parent's Signature: _____

Date: _____

Administrator's Signature: _____

Date: _____



**PRAIRIE SPIRIT
SCHOOL DIVISION**
PURSUING STUDENT SUCCESS

Health Care Provider Form Procedures for Performing Medical Services

Student _____

Date of Birth _____

Medical Procedure _____

Administration Procedures (see school action plan for requirements):

Possible Risks (Low or High Blood Sugar):

Qualifications Required to Perform These Services (Any trained adult can provide these services):

Health Care Provider (Physician, Nurse Practitioner, Registered Nurse) _____

Address _____

Phone _____

Health Care Provider's Signature

Date

Parent's Signature

Date



**Health Care Provider Form
Procedures for Providing Emergency Medical Assistance
and/or Medication**

Student _____

Date of Birth _____

Name of Condition _____

Special Precautions to be Taken (reasonable precautions):

Action to be Taken in an Emergency (follow procedures in school action plan):

Medications/Equipment Required (see school action plan for medications and supplies required):

Qualifications Required to Provide Assistance (any trained adult can provide these services):

Health Care Provider (Physician, Nurse Practitioner, Registered Nurse) _____

Address _____

Phone _____

Health Care Provider's Signature

Date

Parent's Signature

Date



Appendix G
Emergency Plan for Diabetes Complications

Student Name: _____

Emergency Contact Information:

Primary Care Giver: _____ Relationship to Student: _____

Home Phone: _____ Work Phone: _____ Cell Phone: _____

Second Emergency contact: _____ Relationship to Student: _____

Home Phone: _____ Work Phone: _____ Cell Phone: _____

Physician/Health Care Provider: _____

Phone: _____

Emergent Concerns: (steps will be outlined to determine action to be taken in case of emergent event)

- Low Blood Sugar (unconscious or experiencing seizures):