Guidelines for Queensland schools

STUDENTS WITH DIABETES

DiabetesBasics

diabetes queensland

BACKGROUND

In 2011 Diabetes Queensland commissioned research into how students with diabetes were being supported at school. The research and consultation confirmed Education Queensland's concerns that significant gaps existed due to the lack of a consistent framework. Alongside Diabetes Queensland, they championed the collaboration required to develop a set of School Guidelines. The Guidelines for Queensland Schools launched in 2013.

In 2015 a review was undertaken to update current management in schools, informed by clinical guidelines, national trends and new technology available. The collaboration began between Education Queensland, leading Queensland Health hospital diabetes services, teachers, state school registered nurses, parents, diabetes educators, psychologists, exercise physiologists, dietitians and other education services, teacher's union and the Statewide Diabetes Clinical Network.

We would like to acknowledge all of these stakeholders, as collectively, they have been the key to the success in the development of The School Guidelines. The result is a resource that provides school staff with the tools to support students living with type 1 diabetes in the school environment.

The collaborative network developed in this process has strengthened working relationships, improved our ability to advocate for and reinforced our strong connection with the type 1 community.

Updated by Diabetes Queensland 2018

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Supporting the management of type 1 diabetes in the educational setting

a) What is diabetes?

Diabetes Mellitus (often abbreviated to diabetes) occurs when the body is unable to produce enough insulin or when the insulin the body makes, does not work properly. This results in hyperglycaemia (high blood glucose levels).

Food is the body's main source of energy. After food is digested, the carbohydrates in the food are broken down into glucose which then enters the blood stream. Insulin is a hormone produced in the pancreas. Insulin enables the body to use this glucose for energy by opening the channels to allow the glucose to enter into the cells.

There are three main types of diabetes, plus some other rare forms.

TYPE 1 DIABETES MAY INITIALLY DEVELOP OVER A PERIOD OF DAYS AND WEEKS. THE SIGNS AND SYMPTOMS THAT LEAD TO THE DIAGNOSIS OF TYPE 1 DIABETES INCLUDE:

- thirst
- increased urination
- tiredness
- sudden weight loss
- hunger.

Reference: International Diabetes Federation

Type 1 diabetes

Type 1 diabetes is usually diagnosed in children and young adults but can occur at any age. In type 1 diabetes the pancreas loses the ability to make insulin. Without insulin the condition progresses to a life-threatening medical emergency called diabetic ketoacidosis (DKA). People living with type 1 diabetes need insulin to live.

Type 1 diabetes is a lifelong condition. Currently in Australia, insulin can only be given by injection or an insulin pump. Management of type 1 diabetes requires a combination of daily insulin doses and regular glucose monitoring. Healthy eating and physical activity are strongly recommended for people with diabetes, as they are for all Australians.

Type 1 diabetes is NOT a lifestyle-related condition and is not contagious. It is an auto immune condition where the body attacks the insulin producing cells in the pancreas and destroys them. Type 1 diabetes is NOT preventable. There is a genetic susceptibility in the development of type 1 diabetes. Research is continuing, as the actual cause is unknown. Signs and symptoms of hyperglycaemia may occur over a period of days and weeks, before a diagnosis of diabetes.

Type 2 diabetes

Type 2 diabetes is different from type 1 diabetes. In type 2 diabetes, the pancreas may still produce insulin. The insulin produced does not work effectively to convert glucose into energy. This is known as insulin resistance. The pancreas responds to insulin resistance by working harder to make more insulin. Eventually it can't make enough to keep the glucose balance right and blood glucose levels rise, known as hyperglycaemia.

Type 2 diabetes may develop at any age, however is most commonly diagnosed from middle to late adulthood.

There is a higher incidence of type 2 diabetes in children and adolescents with the following risk factors:

- a family history of type 2 diabetes
- Melanesian, Polynesian, Chinese and Indian sub-continent ethnicity
- Aboriginal and/or Torres Strait Islander background
- a history of gestational diabetes
- being above the healthy weight range (particularly waist measurement).

School students with type 2 diabetes are likely to have varied treatment regimens. Treatment may include, but is not limited to:

- development of a healthy lifestyle including diet and exercise
- oral medication
- insulin administration (the administration times, types and dosages of insulin for type 2 diabetes will vary for each person).

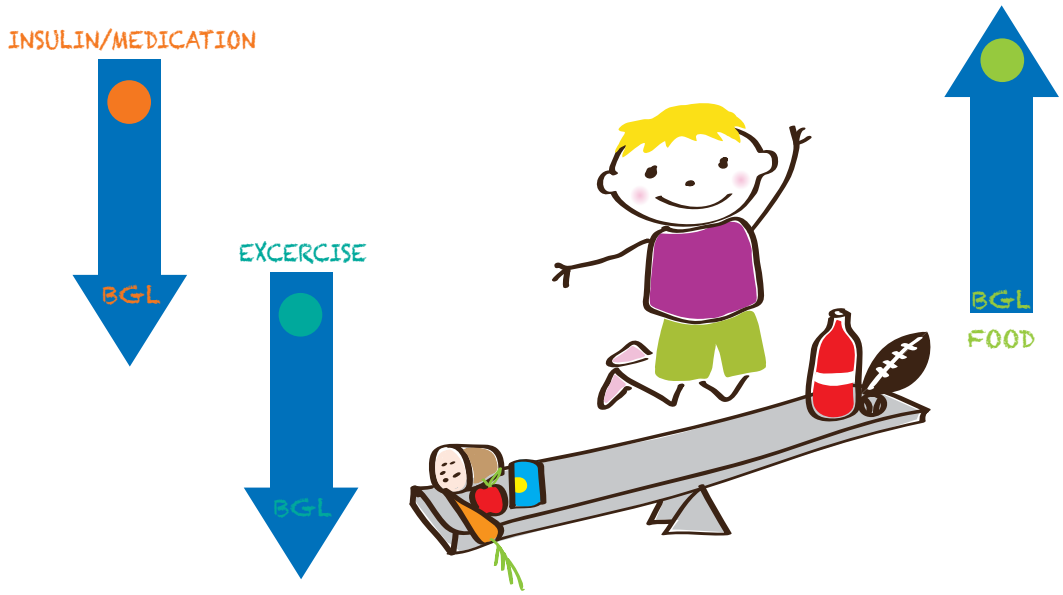
Gestational diabetes

Gestational diabetes is diabetes which occurs during pregnancy and usually goes away after the baby is born. Women with gestational diabetes continue to produce insulin, but the hormones produced during pregnancy mean their bodies are temporarily less responsive to insulin. This results in higher than normal blood glucose levels.

b) Managing diabetes in the school environment

Managing diabetes is about maintaining a balance between factors which lower blood glucose levels and those which raise blood glucose. Factors that lower blood glucose levels include injected insulin, diabetes medication and physical activity. Some factors that raise blood glucose levels include carbohydrate foods and the body's hormones.

This is illustrated in the diagram below.



All students have the right to an inclusive education and the need for reasonable adjustments to support students with additional health requirements while at school. School staff have a legal responsibility to work with the parents, student and health care team to provide an inclusive environment for all students. *(See Diabetes in Schools January 2017)*

To support students with diabetes, school staff are required to:

- Work with parent/carer to establish an acceptable method of communication regarding diabetes care (e.g. diary, phone calls).
- Follow the Diabetes School Action Plan in relation to hypoglycaemia (hypo - low blood glucose - see section 1 g) and hyperglycaemia (high blood glucose – see *section 1h*).
- Allow access to a blood glucose monitor, insulin and hypo treatment foods (see *section 1g*)

- Allow access to water (for drinking or to wash hands), if required.
- Allow students to eat at additional times in class or during physical activity to treat or prevent hypoglycaemia (low blood glucose level), if required.
- Allow extra bathroom access, if required.
- Where necessary, make special considerations during exams and tests.
- Where necessary, discuss and implement considerations when planning sport, excursions, camps and other activities.
- Provide some necessary supervision (e.g. insulin administration, blood glucose levels and pump management) if trained by an appropriately qualified health professional, and only if required.
- Provide special consideration for privacy when checking blood glucose levels and/or injecting insulin, if requested.

In younger students, management of diabetes may be more challenging due to normal stages of development. The ability to recognise low blood glucose levels (hypoglycaemia – see *section 1g*), eat adequate carbohydrate serves and manage varying physical activity levels, may be difficult aspects to manage for young students. Young students may require support and guidance in managing their diabetes needs. Students require individual assessment to define the type and amount of assistance and/or supervision required.

It is uncommon for diabetes to be the cause of significant absenteeism. Students may be required to attend routine medical appointments in school hours.

School staff training and support

At enrolment, or at the time of diagnosis, it is important that the parents/carers discuss their child's diabetes management and support requirements with the principal. The principal is responsible for determining educational requirements with diabetes management for relevant staff members (see *Section 3a* Role of the principal). The principal is responsible for arranging training by an appropriately qualified health professional for school staff who volunteer to support students with diabetes management tasks.

IT IS ESSENTIAL FOR SCHOOLS TO HAVE BOTH A:

Diabetes management plan for school

Diabetes school action plan

Training may be arranged through the State Schools Registered Nurse Service (state schools only) or the student's treating diabetes team.

Diabetes Queensland offers information on where you can access education and support for the safe management of students with diabetes in the school setting. For more information, call Diabetes Queensland on 1800 177 055.

As the student with diabetes reaches high school age they may be able to manage their diabetes independently. However, it is vital that the principal and school staff are made aware that the student has diabetes in order to arrange appropriate steps to support the student.

While students in the high school setting may be competent in managing their diabetes, it is essential to recognise that they may still require considerable support dependent on many factors.

Factors affecting the ability of a student to manage diabetes in the high school setting include, but are not limited to their:

- socioeconomic status
- family dynamics and support
- intellectual capacity
- ability and willingness to access support services such as dietitians and psychologists as well as the treating medical team
- psychological status and factors such as mental illness (which is commonly associated with chronic conditions)
- peer pressure and social support network.

It is vital that the adolescent is involved in decision making and planning of their management at school. Encouraging responsible independence is as important as ensuring the student feels included and supported in the school setting.

Administration of a GlucaGen®† injection (see glossary of terms and see section 1 g) hypo management) is not an expectation of school staff. Each case must be risk assessed individually. The principal is expected to collaborate with the parent/carer and treating diabetes team, to determine if this is required at school.

Diabetes Management Plans for School and Diabetes School Action Plans

To provide specific support to a student with diabetes, it is essential for the school to have both a 'Diabetes Management Plan for School' and the 'Diabetes School Action Plan'.

A *Diabetes Management Plan for School* (or Individual Health Plan) provides a guideline for the management of a student's diabetes. It may contain instructions concerning the routine medication regimen.

A *Diabetes School Action Plan* (or Emergency Health Plan) provides step-by-step directions of how to safely manage a medical emergency specific to diabetes.

The *Diabetes Management Plan for School* and the *Diabetes School Action Plan* must be developed and signed by an appropriately qualified health professional (e.g. Credentialled Diabetes Educator, State School Registered Nurse, General Practitioner, Medical Specialist, Paediatrician or Endocrinologist).

The student's individual *Diabetes Management Plan for School* and the D*iabetes School Action Plan* must be reviewed when their diabetes management changes. At a minimum it is recommended that the plans are reviewed annually. If no changes are required, the plans are signed off by the parents/carers, an the appropriately qualified health professional and the school principal.

c) Diabetes and technology

There is an increasing range of technology available which supports the family and student living with diabetes. This technology is to be managed by the parents/carers. Some examples of current and developing technology include the following:

- continuous glucose monitoring systems and flash glucose monitoring – see *Section 1f)*
- digital insulin pens - adjustable in 0.1 increments
- a variety of applications which assist with recording/tracking glucose levels and insulin dosing e.g. applications that can be downloaded to smart phones and tablets
- glucose meters that allow the student to scan with a scanning device over a small sensor inserted into the skin for an instant glucose reading
- glucose results that can be viewed by parent/carer in real time
- insulin pumps

d) Insulin

The medication used for treating type 1 diabetes (and in some cases, type 2 diabetes) is insulin. Currently in Australia, insulin can only be given by injection or by an insulin pump. Insulin is necessary to maintain blood glucose levels within an individualised, recommended range. People with type 1 diabetes may require insulin injections several times a day or continuously through an insulin pump.

The treating diabetes team, in particular the medical practitioner, specialist or nurse practitioner, will prescribe and discuss appropriate insulin doses with the parent/carer and student. The dose of insulin is determined individually after consideration of insulin sensitivity, blood glucose levels, carbohydrate intake and activity levels.

THE DOSE OF INSULIN IS ADJUSTED ACCORDING TO PATTERNS OF BGLs. Timing of injections is as important as timing of food.

If school staff are involved in administering and/or supervising insulin doses, the parents/carers are responsible for informing the school staff of the dosing instructions. The treating medical practitioner/specialist/nurse practitioner must sign off in the student's *Diabetes Management Plan for School,* or otherwise in writing, state that the parents/carers will be providing dosing instructions. It is important to note that students' insulin doses may vary from day to day, especially in newly diagnosed students, and therefore need to be included on the signed *Diabetes Management Plan for School.*

If it is not possible to provide written dosage instructions, and parents/carers provide instructions over the phone, it is recommended a second staff member listens and confirm the dosage instructions. If confirming a dose by text, this goes to the student's phone, or a school identified device, and not a staff members' personal phone.

If a student will be self-managing their diabetes at school and requires minimal assistance from school staff, it is recommended that a letter be provided to the school from the treating diabetes team, identifying what support, if any, is required. Staff are to be aware that high and low blood glucose levels may affect cognition and decision making ability. The principal determines the level of supervision required in consultation with the parents, classroom teacher and if necessary the treating health professional.

Points to note:

- Students are often require several injections per day and may administer insulin at school, including before and after school care.
- If a student is self-administering insulin at school, staff may need to arrange a private area for the student to administer their insulin under supervision, if requested.
- For high school students with the maturity, understanding and competence to manage their own health condition and make their own decisions, the input of their parents/carers may not be required. However students are expected to be able to contact parents/carers if they require assistance.
- Students using insulin pumps may require supervision and/or assistance with administering insulin bolus doses.

Where possible, students may check their blood glucose levels and inject insulin in the classroom, if they prefer. The principal will need to assess any risks, on a case by case basis, considering the individual needs of the student and other students in the classroom.

Insulin delivery systems

- Insulin pen device
- insulin syringe
- Insulin pump

Insulin pen device

Insulin pens offer a convenient and accurate method of administering insulin. These devices are either pre-filled (disposable) or reusable. Insulin manufacturers have specific insulin pen devices available for their insulin type.

Please refer to *Giving Insulin via an Insulin Pen Device - General Information* available at diabetesqld.org.au/diabetes-school-guidelines

Insulin syringes

The use of insulin syringes in school aged students is not usual, but these disposable, single use syringes may be chosen by some students or their parents/carers for the administration of the student's insulin.

Insulin pumps

Insulin pumps are an alternative means of delivering insulin for students living with type 1 diabetes. An insulin pump is an expensive, computerised medical device. The pump continually delivers small amounts of insulin through tubing and a cannula inserted subcutaneously (usually abdomen or buttocks). Students will wear their pump under their clothes, in a pouch hooked to their belt, or in the pockets of their shorts/pants/skirts.

There is an increasing sophistication in the design and functionality of insulin pumps. Therefore, each pump will vary or be individual to the student.

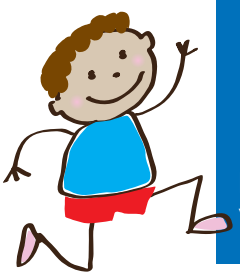
The insulin pump is programmed to give small background doses of insulin (basal insulin-see *glossary*) continuously throughout the day and night, depending on the individual's insulin requirements. Each time the student eats food containing carbohydrate, they instruct the pump to deliver a dose of insulin (bolus-see glossary) to cover the amount of carbohydrates consumed. An extra bolus may also be given to treat a high blood glucose level (correction dose-see *glossary*).

TIPS WHEN DISCONNECTING A PUMP:

Insulin pumps can be disconnected for short periods (1-2 hours) during the day for showers, swimming or contact sports (refer to the student's Diabetes Management Plan for School).

- When disconnected, the pump should not be turned off (this is to prevent a student forgetting to turn it back on when reconnected).
- The pump is to be stored in a safe, dry place away from direct sunlight (perhaps handed to the teacher - be mindful that pumps are very expensive and staff should not play with settings on a pump).
- When reconnected, ensure the pump is on and connected properly.

It is recommended that the student check their blood glucose level when the pump is reconnected. Refer to *Insulin Pumps at School – General Information* www.diabetesqld.org.au/diabetes-school-guidelines.



Insulin storage

Storage of insulin is to be considered as part of the risk assessment and in consultation with the school principal and parent/carer. Insulin should never be stored in a locked cupboard or safe.

The insulin the student is currently using must be stored below 30˚C and away from direct sunlight. Unopened insulin is stored in the fridge, ideally between 2˚C and 8˚C. Store in an area of the fridge least likely to freeze i.e. fridge door or away from the freezer in small bar fridges. Students may store insulin in their lunch box or an insulated cold pack, but not in direct contact with ice packs. However, consideration should be given to the insulin being stored in the classroom rather than outside in a schoolbag.

e) Blood glucose monitoring

The management of diabetes depends on achieving individual blood glucose targets. Blood glucose levels are affected by:

- carbohydrate containing foods
- physical activity
- insulin
- hormones (including stress and growth hormones)
- medications

Target ranges for blood glucose levels are individualised and are to be detailed in the student's Diabetes Management Plan for School and Diabetes School Action Plan. These targets are not the same for every student. Blood glucose levels ranging between 4mmol/L to 15mmol/L are used as a guide only, as the students' individualised targets are set by the treating diabetes team. Effective diabetes management is not about maintaining an exact number, rather, the aim is to have blood glucose levels within the individual's target range.

Blood glucose monitoring is undertaken by the student pricking their finger using a device called a lancet to obtain a drop of blood, and placing it on the strip inserted into their meter. A result is displayed with the amount of glucose in that blood sample. The blood glucose meter and lancet must not be shared because the lancet may contain a contaminated needle. Other methods of monitoring glucose are discussed in *Section f) Glucose Monitoring Systems: Continuous Glucose and Flash Glucose Monitoring.*

It is impossible to determine blood glucose levels by how the student feels or looks.

Diabetes management may be challenging during infections/illness, emotional stress and puberty. Blood glucose monitoring is essential to be able to:

- monitor the effect of food, activity and insulin
- detect hypoglycaemia and hyperglycaemia
- support diabetes management when the student is unwell.

Some younger students or students with disabilities may be unable to manage blood glucose monitoring by themselves and may require assistance from staff. Single-use blood lancing devices that prevent needle stick injuries are appropriate in this circumstance.

School staff assisting with blood glucose monitoring should use Standard Precautions (see glossary) as a first line approach to preventing infection. Staff should not be responsible for the changing of needles or lancets.

Standard precautions include:

- good hygiene practices e.g. hand washing
- use of personal protective equipment e.g. gloves
- appropriate handling and disposal of sharps and other infectious waste
- appropriate cleaning and disinfection of contaminated items.

Precautions should be adopted for contact with all blood and body fluids. It is recommended that students handle their own lancet devices, where able, rather than staff, to minimise the risk of needle stick injuries to staff. (See *Section 1 k and l Equipment storage and sharps disposal*).

Some students will know how to prick their finger, measure their blood glucose level using their own meter and what action is required. Primary school aged students, newly diagnosed students and students with a disability may require some level of supervision in carrying out diabetes related tasks. The level of support required is to be determined on an individual basis and detailed in the Diabetes Management Plan for School. The goal is to encourage students to be as independent with their diabetes management as possible.

Monitoring blood glucose levels provides an accurate measure to guide decision making on diabetes management. It is important to have a school record the procedure and results for legal purposes, as well as for informing parents as required.

Please refer to *Blood Glucose Monitoring at School: General Information* at diabetesqld.org.au/diabetes-school-guidelines

f) Glucose Monitoring Systems: Continuous Glucose and Flash Glucose Monitoring

Continuous Glucose Monitoring (CGM)

Some students may use a Continuous Glucose Monitoring System (CGMS). Continuous glucose monitors are small, wearable devices that measure glucose levels continuously and provide patterns and trends throughout the day and night. They can be programmed to sound alarms and send warnings if glucose levels are getting too low or too high. CGMS measures glucose every 5 minutes, 24 hours a day, and will update when in range of the receiver (device or phone). Many CGMS allow several 'followers', which allow parents, carers, or teachers to monitor readings. If a teacher is authorised as a follower, they must use a school identified device and not their private phone.

The CGMS works through a sensor inserted under the skin that measures the level of glucose in the interstitial fluid (fluid between the cells). There is a lag time between blood glucose and CGM sensor readings of 6 – 12 minutes. The sensor is disposable and is changed according to the manufacturer's recommendations (generally every six to seven days).

A CGMS can provide additional information about the impact of certain foods and physical activity on glucose levels. It can also be helpful to identify hypoglycaemia or hyperglycaemia before symptoms appear.

Whilst CGMS sensor readings provide excellent information regarding glucose trends and patterns, the majority are not currently accurate enough to use in the calculation of insulin doses (although one CGM device has the therapeutic goods association approval to dose adjust from readings, and more may follow). Capillary (finger prick) blood glucose checks must still be done for dosing insulin, unless specified instructions are provided from the treating medical team. The blood glucose results are also used to calibrate the sensor to help maintain sensor accuracy. Some CGMS are able to transmit glucose level readings to an insulin pump. In addition, some newer pumps and CGMS allow the pump to automatically halt insulin delivery for a certain period when the CGMS detects that glucose levels have dropped below a certain level, and resume insulin delivery when levels recover.

Students who use CGMS should have access to their monitor at all times when at school, including during exams/tests. The individual needs of the student and other students in the classroom must be considered. The student's Diabetes Management Plan for School is important to provide individual details relating to their CGMS.

Flash Glucose Monitoring (FGM)

Some students may use a flash glucose monitor (FGM). This is a small device, about the size of a 20c piece, worn on the upper arm. This device measures glucose levels from the fluid between the cells, beneath the skin. There is a lag time between blood glucose and flash sensor readings of 6 – 12 minutes.

The student scans a handheld reader (device or phone) over the sensor to get a reading. Unlike CGMS, the glucose data is only displayed if the sensor is scanned by the reader. The sensor samples glucose automatically every 15 minutes and is represented on a graph showing glucose trends over the previous 8 hours. A FGM has no alarms. The sensor is disposable and needs to be changed every 14 days.

Continuous Glucose Monitoring and Flash Glucose Monitoring in schools

Students who use glucose monitoring technology are still required to have access to their blood glucose meter at all times when at school, including during exams and tests. However, the individual requirements of the student and other students in the classroom must be considered. Teachers and school staff are not expected to manage or monitor CGMS results, due to the individual clinical interpretation required. The data is used as per the Diabetes Management Plan for School or Diabetes School Action Plan, in some cases reducing the need for blood glucose testing. CGMS is designed to inform the parents/carers and treating diabetes team, of overall glucose patterns and trends. It is not recommended that day to day management of diabetes in the school setting be influenced by spikes and troughs seen with CGMS.

Diabetes technology is changing rapidly and new devices are seen more and more in the school setting. Teacher and school staff are not expected to do more than the current routine checks, (for example but not limited to, pre meal and pre snack, or if the student is feeling unwell), to monitor the students' glucose levels.

School staff are expected, however, to follow the student's individual Diabetes School Action Plan for addressing individual variations in glucose levels. The *Diabetes Management Plan for School* and the *Diabetes School Action Plan* are the management instruction documents for each individual student.

LOW BLOOD GLUCOSE MAY BE CAUSED BY:

- too much insulin
- the amount of physical activity undertaken (in relation to carbohydrates consumed and insulin doses)
- not enough carbohydrate food
- excitement and stress
- temperature extremes
- alcohol and substance abuse.

g) Hypoglycaemia (hypo)

Please refer to the student's *Diabetes School Action Plan* for treatment of hypoglycaemia.

Hypoglycaemia (often called a "hypo") is a low blood glucose level which occurs when there is not enough glucose in the blood stream for the body to function. This is usually below 4mmol/L.

Hypos can be serious if left untreated. The individual symptoms can progress very quickly from mild to severe. Immediate treatment is crucial and must not be delayed.

Each student may experience symptoms at different blood glucose levels. The individual level will be indicated on the Diabetes School Action Plan. It is expected in the school setting, that a hypo will be treated as soon as the blood glucose level is below 4mmol/L. The student's Diabetes School Action Plan will specify the appropriate action to be taken in the case of a hypo.

Signs of hypoglycaemia (hypo)

Mild/moderate (able to swallow)

- shaky
- pale
- dizzy
- sweating
- complaining of headache
- feeling hungry
- mood change (e.g. irritable or crying)

Severe (unable to swallow safely)

- extremely drowsy or disorientated
- having a seizure or convulsion
- unconscious.

Reference: ISPAD Clinical Practice Consensus Guidelines 2014 Compendium

Some students may experience of a hypo without any symptoms, which may only be detected through routine blood glucose monitoring.

If a student is observed experiencing symptoms of a hypo or displaying behavioural changes and/or asks to check their blood glucose level, it is recommended that support is offered and assistance given as required in accordance with the *Diabetes School Action Plan.*

Hypo treatment

Refer to the student's *Diabetes in School Action Plan* for that student's individual instructions on how to treat a hypo.

The following is a basic hypo treatment plan if the student's *Diabetes School Action Plan* is not available:

Check the blood glucose level (BGL).

(If you are unable to check the BGL, treat it as a hypo, just in case.)

If BGL is below 4 mmol/L:

Step 1:

- Have 15 grams of fast acting carbohydrate such as:
- 6-7 glucose jellybeans OR
- ½ can of regular soft drink (not 'diet') OR
- 125ml of fruit juice OR
- 3 teaspoons of sugar OR
- glucose tablets/gel equivalent to 15 grams carbohydrate.

Step 2:

Wait 15 minutes, re-check the blood glucose levels to see if the BGL has risen above 4mmol/L:

- If BGL has risen above 4mmol/L go to Step 3
- If BGL is still below 4mmol/L, repeat Step 1.

Step 3:

Eat a snack or meal with longer acting carbohydrate such as:

- a slice of bread OR
- 1 glass of milk OR
- 1 piece of fruit OR
- 2-3 pieces of dried apricots, figs or other dried fruit OR
- 2 plain biscuits.

UNLESS UNSAFE, THE STUDENT MUST NOT BE MOVED AND REQUIRES HYPO TREATMENT IMMEDIATELY.

- The student must not be sent to the office for treatment or left unattended if they are unwell or if they are having symptoms of a hypo. Send another person to attend the office if required to get hypo treatment, and ensure the student remains with an adult and is not left unattended. If the student is in the sick room, do not leave the student unattended.
- If a blood glucose meter is not available and a hypo is suspected, treat as a hypo.

Severe hypos

- If student is having a seizure, is unconscious or unable to swallow, this is a severe hypo. Do NOT give any food/drink via the mouth as the student may choke.
- Place student in the recovery position (on their side).
- Phone ambulance – dial 000 and state that this is a diabetes emergency.
- Inform emergency contacts as per *Diabetes School Action Plan*.
- If GlucaGen®† injection is available and the school and parents/carers have agreed that it is to be administered when required, this may be given, but only if training has been received for this procedure (commonly only used in rural or remote locations where ambulance may be delayed for more than 30 minutes) from an appropriately qualified health professional.

Managing hypo risk at school

Management of a hypo should be detailed in the student's *Diabetes School Action Plan* and their *Diabetes Management Plan for School* (see below for more information).

Hypos may occur at any time, but there is a greater risk of this happening prior to a meal or during/after physical activity.

The student must always have access to their hypo kit which is provided and maintained by parents/carers. This kit contains the students' blood glucose meter and appropriate emergency foods used for treatment of hypoglycaemia.

In the school environment, it is not appropriate to treat a hypo solely with slow acting carbohydrates such as yoghurt or biscuits. Appropriate, fast acting carbohydrates are to be provided by the parents/carers to be given in the first instance.

It is expected that a blood glucose level reading below 4mmol/L be treated as a hypo in the school environment. Some parents may decide a lower threshold at which to begin hypo treatment for their child at home. However, to ensure the student's **safety** at school, where teachers may not be able to provide constant close supervision of the student, the 4mmol/L threshold is the minimum.

If a hypo occurs at school, even if it is managed effectively, parents/carers should be advised and the incident documented as per the agreed plan and the school's record keeping procedures. This enables the parents/carers to ensure daily management is adjusted accordingly.

Hypo information to be included in plans:

- the student's individual hypo signs and symptoms
- step by step instructions to manage a hypo
- food/drink to give to treat hypos
- emergency contact details.

The individual *Diabetes Management Plan for School* may also need to document the student's usual transport home. If the student has a long, unsupervised journey after school (e.g. bus/train ride or walking home), a blood glucose level check may need to be carried out at the end of the school day. Instructions must be provided in the plan as to the appropriate course of action. The student will ensure that they carry their hypo kit with them.

If the student attends after school care, the plan may also indicate any information that should be communicated to the after school care staff e.g. if a significant hypo has occurred that day.

GlucaGen®ǂ

School staff cannot be directed to administer GlucaGen®ǂ, however they may volunteer to do so. The first emergency response for a student with severe hypo is to dial 000 and to state that there is a diabetes emergency. A paramedic may administer a GlucaGen®ǂ injection, if required.

In school settings where emergency services are not available within 30 minutes of a student having a severe hypo, for example, if the school is in a remote location, during a school camp or an excursion, schools must discuss options for emergency treatment with parent/carer and document the decision made to support the student.

If school staff volunteer to give GlucaGen®ǂ they must be trained by an appropriately qualified health professional. Regular refresher training will also be required.

ǂ®Registered trademark of Novo Nordisk A/S

h) Hyperglycaemia

Hyperglycaemia (high blood glucose level) occurs when glucose in the blood stream is elevated. This is a blood glucose level generally above 15mmol/L.

High blood glucose levels can be caused by:

- not enough insulin
- eating more carbohydrate than usual
- sickness or infection
- stress
- reduced physical routine
- hormonal changes during puberty.

Please refer to the student's *Diabetes School Action Plan* for treatment of hyperglycaemia.

Signs and symptoms of hyperglycaemia

Mild/moderate:

- excessive thirst
- frequent urination
- lethargy
- change in behaviour (usually irritable)
- lack of concentration
- blurry vision
- headaches.

School staff may recognise these symptoms if a student is continually asking for permission to go to the toilet and/or for a drink, or they notice their decreased ability to concentrate or to complete tasks. If this occurs, a blood glucose check plus referring to the student's *Diabetes School Action Plan* for treating hyperglycaemia, is required.

If the student displays any of the symptoms below, this is considered a diabetes emergency (diabetes ketoacidosis – DKA):

- rapid, laboured breathing
- sweet-smelling breath
- abdominal pain
- vomiting and/or diarrhoea

Follow the student's *Diabetes School Action Plan* which will state 'Call an ambulance – dial 000' and give further instructions.

Ketone testing

When students with diabetes are experiencing high blood glucose levels (hyperglycaemia), they may develop a build-up of chemicals called ketones in their blood. High levels of ketones are toxic to the body and can lead to a life-threatening condition known as diabetic ketoacidosis (DKA). Ketone monitoring is important to identify whether there are high levels of ketones in the bloodstream. This is a similar procedure to a blood glucose check, using a ketone test strip and a specific ketone monitoring meter.

It is recommended that parents and the students' treating diabetes medical team identify the circumstances when ketone monitoring may be required. This will be noted in the *Diabetes Management Plan for School* and *Diabetes School Action Plan.* Although school staff are able to carry out ketone checks at school, they are not expected to assess or interpret results. Staff are not expected to become involved in this level of monitoring due to the level of clinical assessments required.

To ensure safety, in the case that parents or emergency contacts are not able to be contacted and ketones of above 0.6mmol/L are present, the school are advised to call 000 to assess the student.

i) Sick day management

When a student with diabetes is unwell, it is expected that they will be cared for at home. Illnesses such as common colds, influenza or other viruses or infections may cause unstable blood glucose levels. During illness, blood glucose levels can rise and the body often requires more insulin. There is also an increased risk of elevated blood ketone levels. Illnesses that cause nausea and vomiting can be serious for students with diabetes, as food and fluids may not be absorbed, which can lead to a hypo and dehydration.

Students with diabetes who are unwell, especially when vomiting, need to be seen by a general practitioner/medical specialist urgently. If a student with diabetes is obviously unwell, for example sleepy, feverish or nauseated, it is expected that the student's parent/carer or other emergency contacts take the student home. If emergency contacts are not available, then call 000 to assess the student.

j) Sick room procedures

If the student is in the sick room, they must be within the line of sight of a responsible adult if the adult is unable to stay with them. This is because the student's symptoms may progress suddenly and they may become disoriented, start vomiting or become unconscious.

k) Equipment storage

Glucose monitoring equipment must be within easy access for the student at all times. It is not recommended to be locked away in a cupboard or classroom. However, this may depend on the students' individual circumstances and the needs of other students in the classroom, as assessed by the principal.

Wherever the student goes, the blood glucose meter, hypo kit and *Diabetes School Action Plan* is expected to accompany them. This includes the classroom, school oval, playground and on school excursions.

It is recommended that additional hypo kits are available for use, if required, in an alternative place e.g. school office.

l) Sharps disposal

All schools are recommended to have sharps disposal kits made available. It is expected that the parents/carers provide the kit to the school and dispose of it when it is full. The kit should include a sharps container, disposable gloves and information about the safe disposal of needles/syringes in a sharps container. For further information see *Department of Education Health & Safety Fact Sheet* – Safe Handling & Disposal of Needles and Syringes at http://education.qld.gov.au/health/pdfs/healthsafety/usedneedles-factsheet.pdf

The Queensland Clean Needle Helpline on 1800 633 353 is available to access information regarding needle stick injury, report incidents of unsafely discarded needles and syringes and to find out where and how used sharps can be safely disposed.

The parent/carer or school can dipose of sharps containers via a Queensland Health recommended facility or a facility recommended by the local council. For further information see *Department of Education Health & Safety fact sheet.* http://education.qld.gov.au/health/pdfs/healthsafety/usedneedles-factsheet.pdf

a) Sports and physical activity

Students with diabetes will gain the same health benefits from physical activity as students without diabetes.

When exercising, muscles use glucose for energy and become more sensitive to insulin. For a person with diabetes this may cause their blood glucose level to decrease either during, immediately after exercise, or in some cases, hours later. Reductions in insulin and consumption of additional carbohydrates may be required before, during or after physical activity to maintain blood glucose levels in target.

IT IS NOT SAFE TO ASK A STUDENT TO EXERCISE FOR THE SOLE PURPOSE OF DECREASING THEIR BLOOD GLUCOSE LEVEL. THIS MAY CAUSE BLOOD GLUCOSE LEVELS TO RISE FURTHER, AND IMPACT BLOOD KETONE LEVELS, PLACING THE STUDENT IN DANGER.

For some people with diabetes, physical activity can elevate blood glucose levels. This can occur with high intensity exercise and competition stress

Physical activity:

- improves fitness and well-being
- builds self-esteem, confidence and teamwork
- improves the action of insulin and assists with blood glucose management
- encourages the student to learn to identify the impact of physical activity on blood glucose levels.

Special precautions for exercise

Students with diabetes may require extra considerations during physical activity. Supervising staff are to be aware of the student's diabetes and the impact of physical activity on blood glucose levels.

The student's Diabetes Management Plan for School will provide details on special precautions for sports and physical activity. School staff supervising students participating in sports activities are to ensure that they have access to a blood glucose monitor, hypo kit and the student's Diabetes School Action Plan. The Diabetes Management Plan for School will specify whether the student will need to perform a blood glucose check before taking part in physical activity and what further action may be taken.

Students using insulin pumps may need to remove the pump before physical activity, contact sports and water sports to prevent the pump being damaged (refer to the student's Diabetes Management Plan for School for instructions). The maximum recommended disconnection time is 2 hours. The pump should be kept in a dry and safe place. It is vital that the pump is reconnected after exercise and blood glucose is checked. Remember that pumps are expensive and must be kept safe!

b) Food guidelines

The foods routinely recommended for diabetes are based on the same healthy eating principles recommended for all people. See *The Australian Dietary Guidelines* for more details – www.eatforhealth.gov.au. Students with diabetes can occasionally enjoy treats like all students. Diabetes management is a balancing act between carbohydrate food eaten, physical activity and insulin dosage. All these factors affect blood glucose levels. While students and families may be following a special eating plan at home (e.g. due to cultural or religious beliefs), adequate intake of carbohydrate is recommended at school to support concentration and to ensure safe blood glucose levels are maintained.

USEFUL TIP:
If school staff are supporting students with the administration of insulin, all foods provided should have the carbohydrate content clearly labelled so the staff member is not responsible for estimating carbohydrate content. If unsure, they are to contact the parent/carer to clarify.

Parents/carers are responsible for providing the school with the right type and amount of food and drink required for their child, in addition to providing adequate hypo treatment (glucose food/drink).

If any difficulties are noted with the student's food intake, the parents/carers should be notified via the agreed communication method. If students are regularly unable to finish the food provided, this needs to be reported back to the parents/carers to enable them to adjust meals and insulin.

The food plan for diabetes includes the:

- Type of food - food containing slowly absorbed carbohydrates is recommended at each meal.
- Timing of meals - most food plans are based on three main meals (breakfast, lunch and dinner) and three snacks (morning, afternoon tea and at bedtime). If the interval between meals and snacks is too long - i.e. greater than two hours, a low blood glucose level can occur and an additional snack may need to be eaten. Meal and snack times must not be delayed.
- Total amounts of food - the amount of food for each meal is also important. Parents/carers are usually familiar with counting carbohydrate grams for the student's meals therefore it is not expected to be the role of the teacher to count carbohydrates for the student's meals.

Very young students may require extra supervision at meal and snack times to ensure they eat the food provided and not share food with other students. Most students will have a food plan that fits in with regular school routines, avoiding the need to eat regularly in class or at odd times.

The following are examples of foods that are a source of slowly absorbed carbohydrates:

- bread
- fruit
- biscuits and crackers
- ice-cream and yoghurt
- cereals
- muesli bars
- rice
- pasta
- milk.

Parties and other events

Students with diabetes are able to participate in special events such as parties. It is strongly recommended that parents/carers are consulted about the event with as much notice as possible, in order to plan appropriately or provide alternative food options. Consideration needs to be given to the type of activity to be undertaken, food, insulin and glucose monitoring requirements.

It is recommended that the student's *Diabetes Management Plan for School* includes details around how to manage any planned or unplanned birthday celebrations or similar events that arise at school. Appropriate insulin adjustments, individualised for the student, can be made to balance the party foods that may be consumed. Individualised adjustments for insulin dosing are the responsibility of the parents/carers and the student's treating diabetes team.

c) Camps

Camps enhance self-esteem, are fun, and promote confidence and independence. Students with diabetes can participate fully within a camp program and it is important that students with diabetes are supported to attend camp. For students that are not able to manage their diabetes independently, options include having a staff member who is already trained in the student's diabetes care attend the camp, arranging for other staff to be appropriately trained, or if necessary and appropriate, discussing with the parent whether they are able to attend the camp.

Planning for camps

Advance planning is important to ensure that staff training can be carried out prior to camp and other necessary arrangements can be made. Risk assessment and planning should begin as early as possible, allowing for at least one school term before the camp takes place.

Importantly, camp organisers must be mindful of their choice of location in case a student requires health service support (in particular, see information below re: GlucaGen®† administration at camp). It is advisable to contact Queensland Ambulance Service to advise them that the student with diabetes will be attending camp in the area.

Important steps prior to camp

In preparing for camps, schools follow departmental policies and procedures which take into account managing students' medical conditions, such as diabetes.

The school will generally require parents to complete and submit a medical form for the camp or excursion. This will include details of the student's health care requirements. It is recommended that parents/carers meet with the school staff organising the camp, to discuss the student's medical needs, camp activities and possible implications for their child engaging in camp activities and overnight stays.

Parents/carers and school staff are recommended to discuss the care and support plans for the camp including but not limited to:

- administration of insulin doses
- adjustment of insulin doses (staff members are not expected to calculate insulin adjustments)
- glucose monitoring including overnight checks where required
- recognising and treating hypos
- hypo prevention strategies
- ensuring students have access to hypo treatment foods at all time, including overnight
- an adequate supply of hypo treatment foods as well as food and water, without relying on purchasing food or snacks when needed
- food planning for regular meals
- the need for additional food before, during and after exercise
- strategies if the student becomes unwell (including the *Diabetes School Action Plan* e.g. outlining circumstances requiring blood ketone checks)
- when to call for assistance and 24 hour emergency medical access

- storage of medication
- phone access and mobile coverage

A detailed plan outlining the student's medical requirements when attending the camp and engaging in camp activities, will be required to be completed by the student's treating diabetes team or an appropriately qualified health professional.

If there are any concerns regarding a student's diabetes management, while on camp, the parents/carers may be invited to attend the camp or stay nearby.

Training and support for school staff attending the camp

All members of staff are expected to be informed about the *Diabetes Management Plan for Schools* and *Diabetes School Action Plan.*

School staff who volunteer to support students with insulin administration, glucose monitoring and other diabetes management tasks whilst at camp, will be required to receive training from an appropriately qualified health professional. Training may be arranged through the State School Registered Nurse Service (state schools only) or the student's treating diabetes team.

If the location of the camp is not within close proximity to a hospital and any ambulance response may be delayed (within 30 minutes of a student having a severe hypo), it is recommended an attending staff member be trained on how to administer GlucaGen ®ǂ. The school needs to ensure that in the event of a severe hypoglycaemic episode, a student on a camp is able to be treated. Some camp facilities may have staff members who are trained in GlucaGen ®ǂ administration. GlucaGen ®ǂ training must be provided by an appropriately qualified health professional.

ǂ®Registered trademark of Novo Nordisk A/S

Food, insulin and diabetes supplies

Camps often involve an increased amount of physical activity, which can increase the risk of hypos. Insulin doses may need to be adjusted to accommodate this. Staff are not expected to be involved in calculating insulin doses. The *camp plan*, which is prepared by an appropriately qualified health professional, should specify how insulin doses are to be managed (e.g. parents to provide written instructions or instructions over the phone).

Slowly absorbed carbohydrate foods such as breads, cereals, pasta, and potato are required with every meal. Meals are expected to be served at regular times. Additional carbohydrate foods for exercise may be required and be readily accessible where the physical activity is taking place.

The parents/carers is expected to have the diabetes equipment required and hypo treatment foods available for the duration of the camp.

Insulin may be kept cool in an insulated travel pack or lunch box in hot weather if a refrigerator is unavailable.

Safe sharps disposal equipment is required (for syringes, needles and lancets) (see *section 1 l*).

d) Excursions

Students with diabetes can fully participate in an excursion when reasonable adjustments are made. For a student to attend an excursion, a risk assessment form is recommended (for state schools there is a Variation to School Routine – School Excursion – form to be completed prior to attending the excursion).

Refer to http://education.qld.gov.au/health/safety/managing/risk.html.

Details to be considered include:

- notifying parents/carers as early as possible (preferably at least one month before the excursion)
- timing of meals and details of meals provided
- timing of insulin doses and glucose monitoring (staff members are not expected to calculate insulin adjustments)
- hypo prevention strategies
- an adequate supply of hypo treatment foods as well as food and water, without relying on purchasing food or snacks when needed
- physical activity or other activities included
- providing a copy of the *Diabetes Management Plan for School* and *Diabetes School Action Plan*
- mobile phone access and coverage
- where necessary and appropriate, inviting a parent to attend.

e) Exams and tests

Students with diabetes whose blood glucose levels are within target range have more potential to perform to the best of their ability during exams and tests. When blood glucose levels are outside of the student's target range, the student may have difficulty concentrating and may not perform to their potential.

The student, parents/carers and the school are recommended to discuss any special considerations required for exams and tests well in advance (preferably at the beginning of the school year/term). Special consideration forms for students are required to be completed ahead of time and according to the school's set process, to allow for special provisions, special arrangements or variation to student participation during the examination process. The school administration team will be able to supply the correct form for completion.

During exams and tests, students with diabetes may require additional time to attend to their diabetes management needs. For example, for the Queensland School Certificate, students with diabetes are provided an additional rest breaks each half an hour. This is extended if hypoglycaemia or hyperglycaemia occurs. Discussions should occur and relevant forms should be completed beforehand to determine allocation of additional time (including if hypoglycaemia or hyperglycaemia occurs immediately before a test or exam).

Students are expected to have access to food, drinks, glucose monitoring equipment and insulin (e.g. pump or pens) and bathrooms during an exam or test.

f) Detention/withdrawal from regular classroom

If a student is attending a classroom for detention or withdrawn from their regular classroom, it is expected that the student have access to their glucose monitoring equipment and hypo kit. The student may require additional toilet privileges and be allowed to eat, if necessary, in the detention/alternate classroom. It is recommended that supervising teachers have access to the student's *Diabetes Management Plan for School* and *Diabetes School Action Plan,* prior to supervision of detention.

g) Relief teachers, specialist teachers, non-contact teachers

The principal is required to inform relevant school staff, including specialist teachers and non-contact teachers, of the requirements of students who have medical conditions.

When relief teachers are employed during classroom teacher absences, the school principal will perform a risk assessment to:

- Determine what school staff have received training in diabetes management and who would be appropriate to manage the class.
- Ensure that medical procedures required to be supervised or performed at school are attended to by a school staff member or relief teacher appropriately trained to do so.
- Ensure the relief teacher is aware of the student's diabetes management as set out in the student's *Diabetes Management Plan for School* and *Diabetes School Action Plan.*
- Ensure that the relief teacher is aware of the process for raising the alarm or securing assistance if an emergency were to arise.
- Ensure that the relief teacher is aware of the plan details to ensure that the student's parents/carers are notified of issues related to that student's diabetes management as agreed in the student's *Diabetes Management Plan for School and Diabetes School Action Plan.*

h) Playground duty

Staff responsible for playground duty (including relief teachers) are to be provided with adequate information regarding students with diabetes and be provided time to read the student's *Diabetes Management Plan for school* and *Diabetes School Action Plan.* This is important to ensure that it is clearly understood what to do in the recognition and management of hypos. Access to communication tools such as a walkie-talkie or mobile phone is also recommended to notify others of an emergency. The student's hypo kit and Diabetes School Action Plan is to be made readily available and be easily accessible during school break periods

i) Staff continuity

Consideration needs to be given to maintaining adequately trained staff during times of staff changeover. Appropriate training in diabetes management needs to be provided prior to the staff commencing duties with a new class where a student with diabetes attends. The training must be provided by an appropriately qualified health professional.

j) Emotional impact

Diabetes is a diagnosis that may have a significant impact on the individual student and their family. Students, their parents/carers and siblings have to work at establishing routines and treatment. Other people supporting the student are encouraged to understand the complexity and responsibilities of diabetes management.

IT IS IMPORTANT TO ESTABLISH A CULTURE OF INCLUSION. AND TO SUPPORT YOUNG PEOPLE LIVING WITH DIABETES.

Students with diabetes may worry and even avoid managing their diabetes at school because of their concerns about appearing different to other students. This can lead to problems such as social isolation and refusal to go to school, which can be indicative of depression and/or anxiety conditions. It is therefore extremely important to establish a positive culture around diabetes management in the school environment, to support young people living with diabetes.

Regular and open communication between parents/carers, the school staff and the student can help to reduce potential concerns for both school staff, students and their families. A guidance officer may provide additional support to the student to assist them with the psychological wellbeing and school engagement.

a) Role of the Principal

- Establishes a school climate that:
  - > promotes a positive culture of inclusion for students with health conditions
  - > discourages discrimination of students with a health condition
- Ensures relevant training in supporting diabetes management in the school setting is provided by appropriately qualified health professionals
  - > Training may be arranged through the State Schools Registered Nurse Service (for students of state schools).
  - > Training may be arranged with the student's treating diabetes team.
  - > Call Diabetes Queensland on 1800 177 055 to find out more.
- Facilitates the development of the *Diabetes Management Plan for School* and *Diabetes School Action Plan*, for the student, in collaboration with the student, parent, school staff and appropriately qualified health professional.
- Ensures all school activities (e.g. excursions, camps, physical education, swimming, sport and outdoor education) include a planning component, addressing the requirements of students with diabetes. This plan should be framed within the school's risk management approach.
- Ensures each *Diabetes Management Plan for School* and *Diabetes School Action Plan* is current (annual review expected), based on information from the parent/carer and includes required information provided by an appropriately qualified health professional. The document will include:
  - > telephone numbers for parents/carers, medical practitioner /qualified health professional and diabetes team (where this is available)
  - > requirements - medication, and instructions on written communication of dosage information to school staff
  - > individualised symptoms of a hypo and hyperglycaemia
  - > instructions on treatment of a hypo and hyperglycaemia
  - > recommendations for specific activities such as swimming, sport, outdoor education, camps and physical education
  - > confirmation signature by parent/carer and treating diabetes team or appropriately qualified health professional.
- Ensures that equipment and consumables, including medication, blood glucose meter and hypo kit used to treat a hypoglycaemia are stored properly and are accessible at all times (ie not locked in cupboard or a room).

- Ensures that access to the above is also available after hours, if the student participates in extracurricular activities on the school grounds or attends before or after school care that is administered by the school. Before and after school care programs are often administered by external organisations, in which case parents/carers should liaise separately with these organisations about their child's diabetes management requirements.
- Ensures sharps are disposed of appropriately.
- Approves the use of medical alert jewellery on school grounds or during school activity if requested by parents/carers or the student
- Advises staff that there is a student living with diabetes in the school community and offers access to information to support that student (e.g. Diabetes Queensland Diabetes Basics website).
- Ensures the *Diabetes Management Plan for School* and *Diabetes School Action Plan* are reviewed at a minimum annually and when changes in diabetes management occurs. The plans need to be stored in an appropriate centralised database accessible to all staff.
- Ensures staff are aware that the student's personal information remains confidential according to Section 426 of the Education (General Provisions) Act 2006.

b) Role of the parent/carer

The parents/carers:

- Informs the principal and year co-ordinator that their child has diabetes (upon enrolment, or if the student is enrolled).
- Consults with the principal and relevant school staff to discuss the content of the student's *Diabetes Management Plan for School* and *Diabetes School Action Plan.*
- Supports the school staff to understand diabetes (this is likely a new learning experience for school staff).
- Advises the principal and year co-ordinator of the student's requirements to check blood glucose levels and self–administer insulin in accordance with the student's ability to self-manage their diabetes.
- Consults with the principal and school staff in the development of additional plans for school activities such as camps and excursions, in accordance with the student's plans and recommendations in Section 2 c) and d).
- Provides a written request signed by an appropriately qualified health professional, for the relevant trained school staff to administer or assist a student with the administration of insulin (the treating medical practitioner/specialist/ nurse practitioner must sign off in the student's *Diabetes Management Plan for School*, or otherwise in writing, state that the parents/carers will be providing dosing instructions).
- Ensures medication has the student's name clearly marked on the device.
- Provides the equipment/consumables (for example blood glucose meter, hypo kit) and medication ensuring it is within date of use and there is an adequate supply.
- Provides an up to date *Diabetes School Action Plan* when changes occur in diabetes management.
- Provides medical identification jewellery where appropriate.
- Provides carbohydrate content of foods to be consumed if student is not self-managing.
- Provides food/drink in date for hypoglycaemia treatment.
- Provides consent to contact the appropriately qualified health professionals about their child's management if the parent is not able to be contacted on a particular occasion.
- Ensures that they/or nominated emergency contacts are accessible to provide advice/directions in care.

c) Role of the classroom teacher and support staff

The classroom teacher and any other staff who will be supporting the student with diabetes:

- Reads and becomes familiar with the *Guidelines for Queensland Schools: Students with Diabetes* and the student's individual *Diabetes Management Plan for School* and *Diabetes School Action Plan.*
- Adheres to the student's *Diabetes Management Plan for School* and *Diabetes School Action Plan.*
- Completes relevant training in supporting a student with the management of diabetes provided by appropriately qualified health professionals.
- Recognises the student's signs and symptoms of hypoglycaemia and acts promptly as per *Diabetes School Action Plan.*
- Supports the student to access when requested:
  - extra toilet privileges
  - drinking water
  - additional foods as appropriate
  - glucose monitoring equipment
  - hypo kits.

- Supervises, when necessary, the student's self-administration of insulin, food consumption and glucose monitoring.
- Includes the student with diabetes in all school activities.
- Reports concerns with the student's health or diabetes management to the parent/carer.
- Reports and records student blood glucose level results and important information as agreed in the *Diabetes School Action Plan*.
- Gives advance notice to parent/carer about camps (the term prior), excursions (one month prior) and other events to assist with planning around diabetes management needs.

d) Education and training – additional support resources

Kids and teens - www.as1diabetes.com.au

This is a website for kids and teens with type 1 diabetes which also contains information to assist teachers and staff. The school pack is designed to assist teachers and staff in schools to understand type 1 diabetes and how to support the student living with diabetes in the school setting.

Under 25 years - www.myd.ndss.com.au

myD' (my diabetes) is a site that has been developed specifically for people aged 16 to 25 years living with diabetes.

This site provides general information on living with diabetes and covers 'everyday' topics like school, work, travel, driving and general health. This site also provides information and links to other sites of interest and more information. This site includes a section for youmg people to tell their story and talk about how you live with diabetes, here and now.

Diabetes Queensland - www.diabetesqld.org.au

Diabetes Queensland is a not-for-profit organisation committed to improving the lives of people living with diabetes through advocacy, support and education in partnership with the Queensland community

Juvenile Diabetes Research Foundation (JDRF) - www.jdrf.org.au

JDRF is committed to improving the lives of the type 1 community by providing a range of support services and informing the community about the latest research developments.

State School Registered Nurses (SSRN) - http://education.qld.gov.au/studentservices/learning/disability/specialists/eqns/

With student/parental consent, the State School Registered Nurses (SSRN) will collaborate with parents, key school staff, and treating health and therapy personnel to achieve the best educational outcomes for students.

Tools for diabetes management in schools

1. Diabetes Management Plan for Schools
2. Diabetes School Action Plans
3. Blood glucose monitoring at school
4. Giving insulin via an insulin pen
5. Insulin pumps at school
6. Diabetes factsheets.

Available at www.diabetesqld.org.au/diabetes-school-guidelines/resources.aspx

Glossary of terms

Appropriately Qualified Health Professionals

- Endocrinologist
- Paediatric Endocrinologist
- Paediatrician
- Physician
- Medical specialist
- Medical Practitioner
- General Practitioner
- Credentialled Diabetes Educator
- State School Registered Nurse.

Basal – the rate the insulin slowly enters the body via the insulin pump/injection over 24 hours.

Blood Glucose Level - the amount of glucose in a sample amount of blood (capillary or pathology).

Bolus – the delivery of extra insulin via the insulin pump/injection, when a meal is about to be eaten.

Cannula - a cannula is a small tube which can be inserted under the skin, and is connected to a pump for the continuous delivery of insulin. Frequently called a 'set'.

Carbohydrate – foods that contain starches and sugars and are the body's preferred source of energy. These are the foods that directly affect blood glucose levels.

Correction Dose - an extra bolus of insulin which may also be given to treat a high blood glucose level.

Diabetes Ketoacidosis (DKA) – is a life threatening condition caused by lack of insulin. This occurs when blood glucose and blood ketone levels are elevated, and the person becomes dehydrated as a result, often with symptoms of nausea, vomiting abdominal pain, laboured breathing and unusual smelling breath. DKA is a medical emergency.

Diabetes School Action Plan - provides clear step-by-step directions of how to safely manage a predictable medical emergency, individualised for a student, with the correct use of emergency treatment or medication.

Emergency kit (insulin pump) – a pack containing insulin syringes or pen device, batteries and other pump consumables as necessary. To be used in the event of insulin pump emergency (eg pump batteries expire).

Hypo Kit – a pack containing fast acting and long acting carbohydrate food for the treatment of hypoglycaemia. The food will be individualised according to the student's requirements as listed in the Diabetes School Action Plan.

Diabetes Management Plan for School - provides an individualised guideline for supporting the day to day management of a student's diabetes in the educational setting and may contain some instructions concerning this routine management.

Glucagon – is a hormone produced by the pancreas that causes the liver to release glucose from body stores raising blood glucose levels. Manufactured glucagon is a medication that is injected to raise blood glucose levels in a person experiencing a severe hypoglycaemic event.

Ketones - are produced when fat is used as an alternate energy source to glucose. This occurs when there is a lack of insulin in the blood stream which prevents glucose in the blood to be used for energy. Ketones can be detected in both urine and blood and medical advice is required when levels are above 0.6mmol/L.

Parent/carer - person/s responsible for making health decisions for the student. This could be a biological parent, child safety officer or approved carer.

Standard Precautions - are work practices that assume that all blood and body fluids are potentially infectious. Standard precautions are used as a first-line approach to preventing infection and should be adopted for contact with all blood and body fluids.

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Australian National Diabetes Strategy 2016 – 2020:

Vision: Strengthen all sectors in developing, implementing and evaluating an integrated and coordinated approach for reducing the social, human and economic impact of diabetes in Australia.

Goal 2: Type 1 diabetes: Recognise the early symptoms of type 1 diabetes, such as severe fatigue and thirst, which can lead to diabetic ketoacidosis (DKA). This is an acute complication which can be life – threatening and often requires hospitalisation. Around one in five people who are diagnosed with type 1 diabetes only learn about the diagnosis of diabetes upon presenting to hospital with DKA.

Potential areas of action: Increase awareness and recognition of the symptoms of type 1 diabetes and timely detection among the health care providers and the community, including parents, teachers and others involved in the care of young people.

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