



**St Louise de Marillac Primary School**  
**Drumfinn Road, Ballyfermot**  
**Dublin 10**

## **MANAGING CHRONIC HEALTH** **CONDITIONS AT SCHOOL**

### **DIABETES**

#### **DEFINITION OF DIABETES**

Diabetes is a long term condition where the amount of glucose (sugar) in the blood is too high because the body cannot use it properly. This happens because:

- The pancreas does not make any or enough insulin
- The insulin does not work properly
- Sometimes it can be a combination of both

Glucose comes from the digestion of carbohydrates and from the liver, which makes glucose. Carbohydrates include:

- Bread, rice, potatoes, chapattis, cereal, pasta
- Sugar and other sweet foods

Insulin is the hormone produced by the pancreas that helps glucose move into the body's cells. The body's cells need glucose for heat and energy. Insulin acts as the 'key' to 'unlock' the cells to allow the glucose in. Once the door is 'unlocked' the glucose can enter the cells where it is used as fuel for energy. When insulin is not present or does not work properly, glucose cannot get into the cells and builds up in the blood stream.

## **Type 1 diabetes**

Type 1 diabetes develops if the body stops producing insulin. Type 1 diabetes usually appears before the age of 40 years and most students with diabetes will have type 1 diabetes. Nobody knows why this type of diabetes develops. It is not caused by eating too much sweets and sugar and there is nothing a student with type 1 diabetes or their parents could have done to prevent it. More than 2,500 school-age children in Ireland have Type 1 diabetes. It is important to note the incidence of Type 1 diabetes in childhood in Ireland is increasing.

## **Type 2 diabetes**

Type 2 diabetes develops when the body can still make some insulin but not enough, or when the insulin that is produced does not work properly (known as insulin resistance). In most cases this is linked with being overweight. Type 2 diabetes is more common in adults and there is a higher incidence in people from Africa and South Asia. However, recently, more children and young people are being diagnosed with the condition, some as young as seven years.

## **SIGNS AND SYMPTOMS**

### **Type 1 diabetes**

The classic symptoms of diabetes are:

- Thirst
- Lethargy
- Frequent urination
- Glassy eyed
- Paler in colour
- Blue lips

### **Medication and treatment**

Medication for Type 1 diabetes Type 1 diabetes is treated with insulin. Insulin cannot be taken by mouth because the digestive juices in the stomach destroy it. Insulin treatment for Type 1 diabetes is subcutaneous (under the skin) insulin of varying frequency but may be up to four injections a day or via a pump device. To achieve optimum control Students with Type 1 diabetes will need to test their blood glucose levels at school to help their diabetes management and prevent acute problems. The dose of insulin each student needs is dependent on these results. If a student has Type 1 diabetes, regular insulin is essential to maintain life and they must have their insulin as recommended by their healthcare team.

Most students with diabetes will use a pen-like device to administer their insulin but it is getting more common for insulin pumps to be used. The decision about which system to use will be decided by the student, their family and the student's diabetes team.

### **Managing the condition**

Although diabetes cannot be cured, it can be managed very successfully. An essential part of managing diabetes is having a healthy lifestyle: eating a healthy diet that contains them right balance of foods and taking regular physical activity – the recommendation for all children and young people is 60 minutes of physical activity per day.

- **Students with Type 1 diabetes** need insulin for the rest of their lives. They also need to eat a healthy diet that contains the right balance of foods: a diet that is low in fat (once over five years old), low in sugar and salt and contains plenty of fruit and vegetables.
- **Students with Type 2 diabetes** need to eat a healthy diet that is low in fat (once over five years old), low in sugar and salt and contains plenty of fruit and vegetables. If it is found that this alone is not enough to keep their blood glucose levels within the target range, they may also need to take medication.

### Elements of Effective Diabetes Management

- Monitoring blood glucose/sugar levels
- Understanding hypoglycaemia and its treatment

- Understanding hyperglycaemia and its treatment
- Regular healthy meals and snacks
- Regular physical activity
- Administration of insulin
- Planning for special events
- Planning for emergency events
- Dealing with emotional and social issues

## **TRIGGERS**

### **Lunch or snack breaks**

Students with Type 1 diabetes need to eat at regular intervals. A missed meal or snack can lead to hypoglycaemia. It is important to know the times a student with diabetes needs to eat and make sure they keep to these times. Children and young people must be allowed to finish their lunch and snacks completely before going out to the yard. They may need to have their lunch at the same time each day. If it is necessary for a student with diabetes to eat or drink in class, it is important to discuss with the student how they feel about having their diabetes explained to the class to enable other students to understand more about their condition and avoid any misunderstandings.

Students with Type 2 diabetes will not have the same need as those students with Type 1 diabetes for snacks as they may need to lose weight and they are also not so susceptible to hypos (blood sugar less than 4 mmol).

Please note: the term mmol used throughout this document, refers to the unit of measurement on blood glucose meters that a person with diabetes uses to check their blood glucose levels. The normal blood glucose levels are 4 to 7 mmol. Each student will have an agreed target range with their diabetes team for their blood glucose levels which may differ from the 4 to 7 mmol range.

### **Blood testing**

Most students who are treating their diabetes with insulin will need to test their blood glucose levels on a regular basis. At school this may be:

- Before or after physical activity
- Before a meal

- Anytime they feel that their blood glucose level is falling too low or climbing too high

Specific blood glucose targets will be set by the diabetes team for each student and a decision will be made for each student in their Healthcare Plan what to do if the blood glucose levels are out of target.

A blood glucose meter is used to test blood glucose levels. A test strip is inserted into a small meter. The student then pricks their finger using a lancet and a small drop of blood is applied to the test strip. Older students with diabetes will usually want to keep their testing equipment with them so they can test their blood glucose if and when needed. The lancet (finger pricker) and test strip are disposed of in a sharps box (the same container students use for disposing their insulin pen needles). A blood glucose meter is not a device to be 'shared' as it is a single, named-person device. If recommended by the student's doctor, it is medically preferable to permit students to check their blood glucose levels and respond to the result in the classroom, at any other school location or school activity. Taking immediate action is important so that symptoms do not get worse and the student doesn't miss time away from the classroom.

### **Advantages of checking blood glucose levels in the classroom**

- The student experiences fewer stigmas as blood glucose monitoring loses its mystery when handled as a regular occurrence in front of classmates
- It is safer for students because less time is lost between recognizing symptoms, confirming low blood glucose and obtaining treatment with a fast acting sugar followed by a snack or meal
- The student isn't at risk of having a hypo while alone in the bathroom
- The student achieves better glucose control which will improve their ability to concentrate and learn. It will also help to prevent long term complications of high blood glucose and acute complications of high and low blood glucose The student gains independence in diabetes management
- The student spends less time out of the class

## **Insulin during school hours**

Although many students at school may start on a twice daily injection regime of insulin at breakfast and early evening, regimes alter depending on the student's needs. Some students may need to have an injection during the school day, for example before lunch or they may use an insulin pump. It is preferable that the insulin injection is taken/administered in the student's immediate environment. It is unusual and may be inappropriate for a student to have to use a first aid room to take their insulin if they are happy to inject discreetly at the table or if the first aid room is a long way from where the student eats. Insulin injections – some types of insulin are given immediately before eating so the student may need to inject discreetly at the meal table. Insulin pumps – are attached 24 hours a day and they deliver a set dose of rapid acting insulin continuously. The student with diabetes will also need to 'boost' the dose of insulin from the pump at mealtimes having worked out the amount of carbohydrate they have eaten. The bolus dose of insulin can be given before, during or after the meal, depending on the student's requirements. Older students will usually do this themselves, for younger children discussion with parents and their healthcare professional is needed about how this is managed at school.

## **Diabetes management outside school**

Children and young people with diabetes should have an annual review with their diabetes team to discuss their diabetes management. They should also have reviews every three to four months. A student's diabetes nurse specialist may visit the school on the teacher and parents request to discuss the management of diabetes in school. The availability of the diabetes nurse specialist will depend on local services.

## **School excursions**

Going on school excursions should not cause any real problems for students with diabetes. They need to remember to take their blood glucose meter, insulin and injection kit with them, even those who would not usually take insulin during school hours in case of any delays

over their usual injection time. They will have to eat some starchy food following the injection so should also have some extra starchy food with them. They should also take their usual hypo treatment with them. For young children, it may be more suitable for the teacher to carry this equipment. Students with diabetes must not be excluded from school excursions on the grounds of their condition.

## **Exercise and physical activity**

Exercise and physical activity is good for everyone, including students with diabetes. The majority of students with diabetes should be able to enjoy all kinds of physical activity. It should not stop them from being active or being selected to represent their school or other sporting teams. However, all students with diabetes need to prepare more carefully for all forms of physical activity than those without the condition, as all types of activity use up glucose.

### **Tips for supervising students with Type 1 diabetes during physical activity**

Before an activity

- Ensure the student has time to check their blood glucose levels
- Inform the student how energetic the activity will be
- Check that the student with diabetes has eaten enough before starting an activity, to prevent their blood glucose dropping too low and causing a hypo
- Some students with diabetes may also need to eat or drink something during and/or after strenuous and prolonged exercise to prevent their blood glucose level dropping too low and causing a hypo
- Ensure the student has access to quick acting carbohydrate such as Lucozade
- If the test shows a blood glucose level of 15 mmol or above for a sustained period, a urine or blood test for ketones (the by-product of the body burning fat for energy) may need to be performed before commencing any physical activity. If students have had their correct insulin injection and are feeling well, it may be safe

to exercise but the blood glucose will need to be monitored carefully

While it is important that teachers keep an eye on students with diabetes, they should not be singled out for special attention. This could make them feel different and may lead to embarrassment. If a student with diabetes does not feel confident participating in physical activity, teachers should speak to the student's parents to find out more about the student's situation. The majority of students should be able to take part in any sport, exercise or physical activity they enjoy, as long as they are enabled to manage their diabetes.

### **During an activity**

It is important that the person conducting the activity is aware that there should be glucose tablets or a sugary drink nearby in case the student's blood glucose level drops too low. If the activity will last for an hour or more, the student may need to test their blood glucose levels during the activity and act accordingly. If a hypo occurs while a student is taking part in an activity, they should take immediate treatment. Depending on the type of activity, the student should be able to continue once they have recovered. A student's recovery time is influenced by a number of factors, including how strenuous the activity is and how much the student has eaten recently.

The student should check their blood glucose 10 – 15 minutes after the hypo. If the blood glucose is still below 4 mmol, repeat the steps of treating hypoglycaemia. If the blood glucose level has risen above 4 mmol, the student should eat a long-acting starchy food. (See Diabetes Emergency Plan).

### **After an activity**

Students with diabetes may need to eat some starchy food such as a sandwich or a bread roll but this will depend on the timing of the activity, the level of exercise taken, when their insulin injection is due and whether a meal is due.

## **Students who use insulin pumps**

Pumps may need to be disconnected if taking part in contact sports. Although some may be waterproof, students may prefer to disconnect while swimming. Pumps cannot be disconnected for long periods of time because the pump uses rapid acting insulin. Generally, the rule is that they should not be disconnected for more than an hour. While the pump is disconnected, no more insulin will enter the body and the blood glucose level will gradually begin to rise. To ensure insulin levels are correct after physical activity, check that the student remembers to reconnect their pump as soon as the activity is over and tests their blood glucose levels. In the case of extended activity, it is important to check how the student manages their glucose levels.

## **Students with Type 2 diabetes**

If a student has Type 2 diabetes but they are not on insulin, it is unlikely that they will have a hypo during exercise. As these students are generally overweight, physical activity should be actively encouraged.

## **SCHOOL POLICY**

- Monitoring blood glucose/sugar levels
- Understanding Hypoglycaemia and its treatment
- Understanding Hyperglycaemia and its treatment
- Regular healthy meals and snacks
- Regular physical activity
- Administration of insulin
- Planning for special events
- Dealing with emotional and social issues

## **RESPONSIBILITY OF BOARD OF MANAGEMENT:**

- Promote a supportive learning environment for students with diabetes
- Develop school guidelines for diabetes management during school and school outings
- Allocate sufficient resources to supervise students with diabetes

- Designate a member of staff to maintain the school chronic conditions register
- Arrange and attend meetings with the student (if appropriate), family, teacher(s), and other staff members who have primary responsibility for the student. This should take place at the start of the school year or when the student is newly diagnosed. Discuss related services to meet the student needs
- Identify all staff members who have responsibility for the student with diabetes
- Ensure substitute personnel are aware of the needs of a student with diabetes and the Diabetes Emergency Plan
- Arrange for diabetes management training for staff members with responsibility for students with diabetes
- Alert all school related staff members who teach or supervise a student with diabetes. Ensure that they are familiar with emergency procedures
- Support and implement the plan agreed for storage of diabetes medication and provide a place with privacy if necessary for the student to administer insulin
- Delegate a staff member to regularly check the expiry date of diabetes medicines kept at school
- Include diabetes awareness as part of health education
- Support ongoing communication between parents/guardians of students with diabetes and school staff
- Have sufficient knowledge of diabetes to make informed decisions regarding the safety of students
- Provide information for substitute teachers that communicate the day-to-day needs of the student with diabetes and the Diabetes Emergency Plan
- Support and implement the Healthcare Plan and Emergency Diabetes Plan agreed by the school and the student's parents

## **RESPONSIBILITY OF TEACHERS/SNAS:**

- Participate in the school meeting with the parent(s) and all relevant staff

- Work with the school team and the parents to develop a written Healthcare Plan including a specific Diabetes Emergency Plan for the student
  - Be prepared to recognise the triggers, respond to the signs and symptoms of hypoglycaemia and hyperglycaemia and know what to do in an emergency
  - Maintain effective communication with parents including informing them if their child has been unwell at school
  - Provide a supportive environment for the student to manage their diabetes effectively and safely at school. This may include unrestricted access to the bathroom, drinking water, snacks, blood glucose monitoring and taking insulin
  - Treat the student with diabetes the same as other students except when meeting medical needs
  - Ensure the hypo kit\* is stored in a safe place in the classroom and available to the student in the event of hypoglycaemia. This hypo kit will be provided by the parent
  - Ensure that the student with diabetes has the appropriate medication or food with them during any exercise and are allowed to take it when needed. This also includes blood glucose monitoring when needed during the school day
  - Provide alternative options for unplanned vigorous physical activity
  - Ensure that the student has the right to privacy when injecting insulin, adequate time for blood glucose testing and eating snacks/meals if needed
  - Check expiry date on medication regularly
  - Provide information for substitute teachers that communicate the day-to-day needs of the student with diabetes and the Diabetes Emergency Plan
  - Learn about managing diabetes at school by reviewing the diabetes section part B of this resource pack
  - Attend diabetes management training if deemed necessary
  - Include diabetes awareness as part of health education
- ★ Hypo kit example- contains blood glucose meter, testing strips, finger pricking device with lancets, Lucozade, glucose sweets, cereal bar, biscuits, Glucogel and Glucagon injection.

## **RESPONSIBILITY OF PARENTS/GUARDIANS:**

- Inform the Board of Management, school principal and the teacher that their child has diabetes
- Attend and participate in the school meeting to develop a written Healthcare Plan to meet their child's needs
- Provide accurate emergency contact details and develop a Diabetes Emergency plan for their child
- Inform school staff of any changes in their child's health status
- Provide the school with the necessary equipment such as a hypo kit\* and replenish supplies as needed
- Ensure their child's insulin and glucose meter are labelled with the child's full name.
- Ensure insulin and all necessary equipment is within the expiry date
- Provide the school with appropriate spare medication labelled with their child's name
- Bring medication home from school on the last day of each term and return it to the school on the first day of each new term
- Provide information about their child's meal/ snack schedule which should be tailored if possible to fit into the daily school timetable
- Provide the school with appropriate treats for their child for special events such as parties

## **RESOURCES/INFORMATION**

### **Resources**

Diabetes Federation of Ireland is the national charity dedicated to providing support, education and motivation to all people with diabetes. It also raises public awareness of diabetes and its symptoms and funds Irish based research into finding a cure for diabetes.

Services provided by the Diabetes Federation of Ireland include:

- Patient support via our national telephone helpline
- Information via leaflets, information packs, website and quarterly Diabetes Ireland magazine
- Support for children, young people and parents with diabetes via our Sweet Pea Club, children and adolescent summer adventure outings, family weekends and parent support groups
- Direct health education for people with diabetes through public meetings and structured education programmes
- Financial services: negotiated motor and health insurance schemes
- Advocate to improve diabetes services and fight against discrimination of people with diabetes
- Professional support via professional meetings and quarterly Diabetes Professional magazine
- Public awareness: Health Awareness Exhibition and other initiatives
- Health Promotion initiatives including school awareness, diabetes workplace awareness, early detection and prevention initiatives and diabetes screening
- Funding medical research in Ireland Important Information

## **Contact Details**

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