

1. PURPOSE

Diabetes is a recognized debilitating disease which threatens individuals and community health. It is a common, complex and chronic disease that can damage all systems and parts of the body. It affects people of both genders from all walks of life and can occur at any age and stage of the life cycle.

The purpose of the Diabetes Care Management and Glucagon Policy is to provide the guidelines to ensure optimal diabetes management, which every person with diabetes deserves.

2. APPLICABILITY

To ensure effective management of diabetics at Swiss International Scientific School of Dubai, all members of staff play a vital role, especially the School Clinic Team, teachers and teaching assistants.

3. OBJECTIVES

3.1. Guarantee Effective Communication:

- Effective communications between parents/guardians, the School Clinic Team and the Academic Team is important to manage diabetes successfully.

3.2. Ensure Inclusion and Normality of School Life:

- All diabetic students should be effectively accommodated in SISD with reasonable understanding of their condition and good communication between the students / parents and the school. Precautionary measures and support from the school will be provided and maintained to ensure a normal school life for the pupil.

3.3. Understand Responsibility:

- Parents, pupils and staff should understand that diabetes care and management is a shared responsibility.
- Children are taught that diabetes is self-managed, and that treatment is individually based on that child's needs.
- The ability of each student to perform diabetes self-care depends not only on the student's age and maturity but may also depend on the length of time he/she has had the condition.

3.4. Raise Awareness:

- Staff working directly with a diabetic student must be aware of the procedures for dealing with diabetes and its states (hypo/hyperglycemia) and its complications. They are expected to recognize the signs of hypo and hyperglycemia and provide aid in cases of emergency.
- All personnel in the school must be generally aware and know whom to contact for help.

4. IMPORTANT DEFINITIONS

4.1. OVERVIEW

Diabetes is a chronic disease that causes high blood glucose because a person's body does not produce enough insulin, or the insulin does not work properly. There are four main types of diabetes: Type 1 diabetes, Type 2 diabetes, Gestational diabetes, and Pre-diabetes.

Among school-age children, type 1 diabetes is more common than type 2 diabetes. In type 1 diabetes, the body does not make insulin, a hormone that helps glucose get into the cells and be used for energy.

As a result, the amount of glucose in their blood may be higher than normal, and their bodies may not use glucose effectively. Students with type 1 diabetes need to take insulin every day to stay alive.

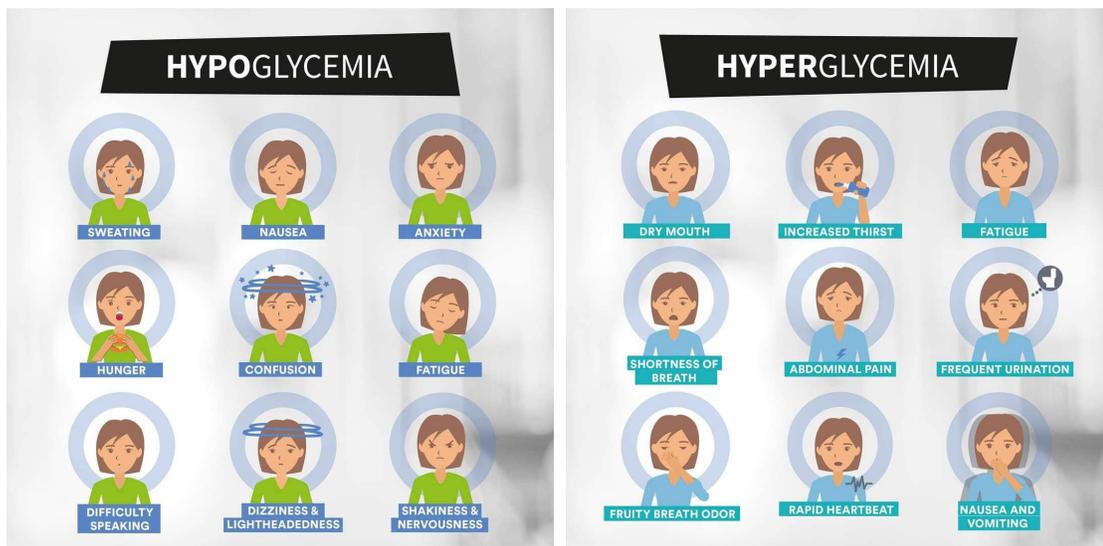
Other students may have type 2 diabetes. This type of diabetes, while more common among middle-aged and older adults, is increasingly being diagnosed among children. In type 2 diabetes, the body may make insulin, but may not make enough to control blood glucose.

4.2. DIABETIC EMERGENCIES IN THE SCHOOL

There are two types of diabetic emergencies that can happen in the school:

- Hypoglycemia: Low blood sugar level
- Hyperglycemia: High blood sugar level

Glucose levels out of range can impact on learning.



4.2.1. Hypoglycemia:

A low glucose level (hypoglycemia) is a level below a student's target blood glucose range, usually less than 70 mg/dL.

A blood sugar level below 55 mg/dL; severe hypoglycemia, is a cause for immediate action and is considered a diabetic emergency.

Severe hypoglycemia may alter a patient's capacity where they cannot manage by themselves, and they would need support from someone else.

Common reasons why a glucose level may go low include:

- A missed, delayed or interrupted meal, or not enough carbohydrates
- Too much insulin
- Being more physically active than usual or unscheduled activity

Signs and symptoms of a low glucose level may include:

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|-------------------------|---|
| • Unwell, tired or weak | • Nausea |
| • Shaking/trembling | • Blurry vision |
| • Pale Skin | • Headache, or difficulty in speaking and concentrating |
| • Sweating | • Confusion, anxiety |
| • Unusual Behavior | • Dizziness |
| • Hunger | |

4.2.2. Hyperglycemia:

Keeping glucose levels in target requires a balance between insulin, carbohydrates and activity.

Each diabetic student will have an individual glucose target range that they aim to stay within. When a glucose level is out of this range it can make it harder to learn.

A high glucose level (hyperglycemia) is a level above a student's target blood glucose range, usually above 250 mg/dl.

Children will sometimes outgrow their insulin dosage and have high glucose values. Be sure to discuss this with your child's parents and physician.

Common reasons why a glucose level may go high include:

- Extra carbohydrates eaten with no additional insulin
- Insufficient insulin
- Being less physically active than usual
- Excitement, illness, stress or hormonal fluctuation

Signs and symptoms of hyperglycemia may include:

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| • fatigue | • irritability but later may progress to drowsiness |
| • dry mouth | • abdominal pain, especially generalized/unspecified abdominal pain |
| • extreme thirst | • palpitations |
| • frequent urination, and so needing extra toilet breaks | • warm flushed skin (occasionally) |
| • blurred vision | |
| • nausea and vomiting | |
| • fruity smell to breath | |

Children with diabetes sometimes have problems maintaining a balance of sugar and insulin in the body, they can go into hyperglycemia or hypoglycemia. Many factors can cause either of these conditions. The immediate effects of a low blood sugar can be more serious than that of a high sugar. Individuals quickly progress to a medical emergency if not treated promptly.

4.3. MANAGEMENT OF DIABETES:

The need for careful control and self-management of diabetes by the student and his/her family is an essential component of care to prevent short- and long-term complications from diabetes such as damage to the eyes, kidneys, vascular and nervous systems if not managed properly.

4.3.1. **Insulin**

All students with type 1 diabetes need insulin to manage their diabetes. Insulin can be administered by injection or infused through a pump.

Students with type 2 diabetes more commonly use oral medications to manage the disease, although some will require insulin.

4.3.2. **Insulin Pumps and Continuous Glucose Monitors (CGM)**

Many families of students with type 1 diabetes choose to use a pump to administer insulin. The pump can allow for greater flexibility and improved quality of life as it eliminates the need for multiple daily insulin injections. The pump delivers a continuous infusion of insulin throughout the day plus when prompted, a bolus (or 'burst') of insulin when the student eats. For the pump to work properly, the student must wear it day and night, although it can be removed, if indicated in the student's Diabetic Management Plan for short periods (e.g., during a physical education class).

Students may also wear continuous glucose monitors (CGMs) which take glucose readings every few minutes, with or without insulin pumps

There is still the need to monitor blood sugar, food intake and activity and make decisions about how much insulin to give and when. When a school aged child is unable to effectively monitor and comprehend their CGM, effort must be made to implement a monitoring plan that does not interfere with the classroom learning environment. School staff can be educated on the CGM transmitter itself but cannot be expected to observe for trending of glucose values if doing so interferes with the overall classroom environment.

4.3.3. **Glucagon**

Glucagon is a hormone that raises blood glucose levels which act by converting glycogen (stored carbohydrate) into glucose and then release it from the liver. It is a safe drug with mild adverse reactions like nausea, vomiting and allergic reactions. Glucagon may be stored at room temperature and can be given as either a subcutaneous or intramuscular injection.

Good management of diabetes will significantly reduce the likelihood of hypo/hyperglycemia at school, thus reducing the likelihood of long-term complications and of administering glucagon.

5. RESPONSIBILITIES

It is the responsibility of the students, School Clinic Team, parents, teachers, teaching assistants, and Academic Leadership team to have all the necessary precautions to prevent a hypo or hyperglycemic episode of occurring within the perimeter of SISD.

5.1. Responsibilities of the Parents/Guardians:

- Inform the School Clinic Team of their child's diagnosis and condition promptly and engage with them.
- Provide the school with certified medical reports, Diabetic Management Plan and medications (glucagon emergency kits, insulin or other diabetes related medications) as directed by the student's certified physician and dietician.
- Ensure that their child's diabetes is monitored and addressed and ensure that he/she follows the medically prescribed care.
- Ensure that their child's blood glucose meter is in proper working order, with sufficient supplies available daily and maintain the insulin pump, changing its parameters and the batteries as required.
- Work with the school team to develop a plan that accommodates the child's needs throughout the school including in the classroom, in the cafeteria, in after-care programs, and during school-sponsored activities.
- Inform the school in writing of any changes in the student's Diabetic Management plan, or any relevant information.
- Deliver separate carbohydrate counts for all foods to be consumed in breaks and lunch along with the required insulin per meal as per the physician's guidelines and according to the child's diabetic Management Plan for students who require assistance counting carbohydrates.
- Provide the school with a list of emergency contacts and their information in case the parent/guardian cannot be reached immediately if a problem arises.
- Ensure safe transportation of medication and disposal of items requiring special precautions, such as syringes and sharps.
- Ensure that medications are collected from the school at the end of the semester/academic year and replaced at the beginning of each new semester/academic year.
- Foster their child's independence in the monitoring and treatment of his/her diabetes in keeping with the child's age, knowledge, skills, and maturity level.
- Educate and train their diabetic student in diabetes self-management, including administering insulin on time, the importance of a balanced and healthy diet, general nutritional management of their condition.
- Educate their diabetic child to immediately inform an adult when they feel unwell, especially when he/she experiences symptoms of hypoglycemia or hyperglycemia.
- Allow healthcare providers to instruct the child in the self-management of his/her medical condition including:
 - The importance of eating a healthy diet.
 - The importance of adequate physical activity.
 - Symptoms of hypoglycemia and hyperglycemia.
 - How to treat hypoglycemia and hyperglycemia.
 - Practical skills of injection techniques, self-monitoring of blood glucose (age appropriate) and correct storage/transportation of medications.
- Ensure modifications are in place for special events, outings and school trips.
- Attend specific trainings as needed to meet their child's medical needs.

5.2. Responsibilities of School Clinic Team:

- Be informed of the diabetic child’s medical history, medical reports and medications.
- Ensure parents/guardians provide the school with all necessary documents and medications in conjunction with planning a discussion with them about their child’s condition and needs.
- Keep a record of medications provided by the parents/guardians along with the expiry date. Monitor and review this list regularly.
- Inform the parents/cares when medications require replacement.
- Maintain proper and secure storage of medications.
- Ensure that all personnel who directly interact with diabetic students are aware of them and of the necessary procedures and information, after consent from the parents.
- Ensure that all relevant medical information regarding the diabetic student is updated including a list of certified first aid providers and staff members who are authorized to administer medications to the student. Communicate this information with the student, the parents and the Academic Team.
- Manage the administration of medications to the student according to their diabetic management plan, and/or supervise the student if he/she can self-administer his insulin/medications.
 - Verify the amount of food consumed by the student and count carbohydrates (as per the parent/guardian count) for students who require assistance.
 - Supervise the student as he/she calculates and prepares the correct amount of insulin for carbohydrates consumed.
 - Supervise the student during blood sugar checking.
 - Supervise the student’s self-administration of insulin.
 - Younger children will need help with regards to all aspects of glucose monitoring and insulin administration.
- Be prepared to handle hypo or hyperglycemia episodes and ensure that there is a staff member available who is properly trained to administer medications during the school day regardless of time or location.
- Guarantee that every pupil at risk for severe hypo or hyperglycemia has an individual diabetes medical management plan that was discussed with the parents/ guardians.
- Assure the availability of emergency kits when facing an emergency (severe hypo or hyperglycemia), containing the physician’s standing order for insulin and glucagon.
- Ensure student’s diabetes kit / fast-acting sugar supplies are always accessible to the student in coordination with class teacher.
- Review policies/prevention plans with all Clinic Team members, parents/guardians, student (age appropriate), and physician as needed and after a hypo or hyperglycemia incident has occurred.
- Ensure that all medications are returned to parents at the end of the session with the request that new supplies be brought back to school on the first day of each new semester/academic year.
- Raise awareness of the importance of recognition of symptoms of diabetic emergencies among SISD staff members, and make sure they are aware of the emergency protocols and procedures.
- Advise the parents/guardians and diabetic students, or diabetic staff members on the following set of recommendations that the person with Diabetes should follow:
 - Wear proper footwear and other appropriate protection equipment.
 - Avoid exercise in extreme hot conditions and if experiencing symptoms of hypoglycemia.

- Avoid exercise during periods of severe hyperglycemia.
- Maintain good hydration during and after prolonged exercise.
- Reduce medication prior to exercise when necessary (insulin in people with type 1 diabetes and take precautions in individuals with type 2 diabetes on sulfonylureas or on insulin) after consultation with the Clinic Team.

5.3. Responsibilities of Academic Team (teachers, teacher assistants, Academic Team Leaders):

- Ensure they are familiar with and adhere to the guidelines outlined in this policy.
- Support faculty, staff, and parents by implementing the responsibilities and expectations detailed in this policy.
- Ensure general awareness is upheld among staff about diabetes and its effects on students, and appropriate actions in cases of emergency.
- Be able to recognize the signs of hypoglycemia and hyperglycemia and provide assistance and treatment as per guidelines.
- Ensure that relevant staff with diabetic students in their care are trained as appropriate by the Clinic Team and that this training is updated and regularly conducted.
- Guarantee recognition of the impact of diabetes on the cognitive functions and performance of a diabetic student as well as the likelihood of erratic moods or behaviors.
- Ensure relevant staff and substitute teachers are aware of different medications used by a diabetic student and the possible need of multiple injections.
- Ensure open channels of communication with parents and regular reviews throughout the school year or where there has been some change in circumstances, i.e., after an incident.
- Ensure students with diabetes are included in all school activities and not excluded from any activity because of their diabetes. However, they will need to check their blood glucose/sugar levels before and after exercise and will probably need to eat or drink fast acting sugar-based type food and drink before the activity or consume more complex carbohydrate before and perhaps after the activity to limit the risk of a hypoglycemic attack. In addition, pupils with diabetes should be supervised when taking part in activity.
- Ensure student's diabetes kit / fast-acting sugar supplies are always accessible to the student in coordination with Clinic Team.
- Ensure that staff are aware that pupils may require access to food and drink during the school day and may require to be allowed to leave class to deal with any issues relating to their condition.
- Ensure that staff are aware that pupils should not be detained in class over either break time or lunch time without access to food and blood glucose testing kit.
- Plan for younger pupils to be supervised at snack and lunch breaks to ensure that food provided by parents is eaten.
- Ensure that diabetic students are provided with:
 - Unlimited access to water such as usage of a water bottle in the classroom.
 - Unrestricted access to bathrooms.
 - Unrestricted access to snacks in the classroom, gym, or on the bus at varying times of the day.
 - Access to food on a regular schedule.

6. ASSESSMENT & PROCEDURES

School Staff and others entrusted with the supervision of students with diabetes are expected to be able to recognize the signs of hypoglycemia and hyperglycemia and provide aid in case of an emergency.

Although not ideal, diabetic students, especially those with type 1 diabetes, will have a low or high glucose level from time to time.

Medical intervention should be prioritized to minimize fluctuations of blood glucose.

6.1. HYPOGLYCEMIA < 70 MG/DL:

Signs and symptoms of hypoglycemia may include:

- Unwell, tired or weak
- Shaking/trembling
- Pale Skin
- Sweating
- Unusual Behavior
- Hunger
- Nausea
- Blurry vision
- Headache, or difficulty in speaking and concentrating
- Confusion, anxiety
- Dizziness

Outlines of Management:

- **Check RBS test**
- The aim of treating a low glucose is to return the students glucose level back into their target range.
- Follow patient's diabetes action or management plan for the specific actions to take for your student.
- Do not leave a student unattended until completely recovered.
- When in doubt, treat with fast-acting sugar.
- **A severe hypoglycemia with blood sugar level below 55 mg/dL should be treated with glucagon.**
- Glucagon must be used in cases of severe hypoglycemia:
 - Random Blood Sugar RBS test ≤ 55 mg/dL.
 - RBS does not rise within 15 minutes after the patient consumes a fast-acting sugar.
 - The symptoms of hypoglycemia worsen to the point of being unable to swallow.
 - The patient has lost consciousness or suffered seizures.

Glucagon Injectable "GlucaGen" Hypo Kit 1 mg/ml Dosage Chart	
Age / Weight	Dose
Children younger than 6-8 years or below 25 kg	Inject 0.5 ml subcutaneously, intramuscularly, or intravenously.
Adults and children over 6-8 years or above 25 kg	Inject whole 1 ml subcutaneously, intramuscularly, or intravenously.

- **If patient is conscious: and RBS <70 mg/dL but above 55 mg/dl:**
 - Give fast-acting sugar immediately: (e.g., 4-6oz. of fruit juice or 3 packets of sugar diluted in a little water or 1tbsp of sweetened jelly, honey, corn syrup, jam or equivalent provided by the parent).
 - Call the parent and wait 10 to 15 minutes and recheck blood glucose if possible.
 - Repeat treatment if symptoms persist or blood glucose is still less 70 mg/dL
 - Once blood glucose is at 70mg/dL, give the student a snack comprised of a carbohydrate and a protein (e.g., 4-6 crackers and cheese).
 - Do not change the time of the next meal or snack.

- **If the student is unable to swallow or unconscious, or unresponsive to fast sugars, or has severe hypoglycemia:**
 - Do not attempt to give anything by mouth.
 - Roll the student onto his/her side (if possible) to prevent choking.
 - Administer glucagon as prescribed.
 - Do not prepare Glucagon for Injection until you are ready to use it.
 - Glucagon is a fast-acting medication and improvement should be seen within 10 to 15 minutes.
 - If not, glucagon may be repeated in 20 minutes as needed.
 - After the administration of glucagon, RBS should be monitored every 20 minutes.
 - IV dextrose should be considered following unresponsiveness to glucagon.
 - Contact Emergency services and inform parents.

6.2. HYPERGLYCEMIA (USUALLY ABOVE 250 MG/DL)

Signs and symptoms of hyperglycemia may include:

- fatigue
- dry mouth
- extreme thirst
- frequent urination, and so needing extra toilet breaks
- blurred vision
- nausea and vomiting
- fruity smell to breath
- irritability but later may progress to drowsiness
- abdominal pain, especially generalized/unspecified abdominal pain
- palpitations
- warm flushed skin (occasionally)

Outlines of Management:

- **Check RBS test**
- A high glucose level (hyperglycemia) is a level above a student's target blood glucose range (commonly above 250 MG/DL).
- Do not leave a student unattended until completely recovered.
- **In case of mild hyperglycemia and the patient is well.**
 - Symptoms including thirst, frequent urination, fatigue.
 - Allow unrestricted water and toilet access
 - Follow the instructions for hyperglycemia management in the student's care plan
 - Inform the parents if the hyperglycemia worsens.
- **In case of severe hyperglycemia and the patient is unwell**
 - Symptoms including drowsiness, nausea or vomiting, abdominal pain.
 - Monitor hyperglycemia by testing blood glucose at regular intervals and record results.
 - Follow the instructions for hyperglycemia management in the student's care plan
 - Check for ketones if kit is available and record findings.
 - Call parents/guardians immediately to have the child picked up for hospital management.
 - If unable to contact parents/guardians or patient loses consciousness, contact Emergency services.

7. 7. DIABETES MANAGEMENT RECORDS AND PLANS

- *Please refer to the Diabetes Medical Management Plan for each diabetic student.*
- For everyday monitoring, the following chart will be used as a record, the Diabetic / Glucose Monitoring Chart.

Date	Time	Glucose mg/dL	Gadget Used Glucometer / CGM	Units of Insulin	Site	Fast Sugar & Amount	Glucagon	Remarks