YOUTH WITH DIABETES

# Teacher's Training
## Diabetes in School

ywd
youth with diabetes

The purpose of this booklet is to educate school staff members about diabetes and to share a set of practices that enable schools to ensure a safe learning environment for students with diabetes.

Youth With Diabetes (YWD) is a non-profit organisation registered with the South African Department of Social Welfare (NPO 057-954; PBO 93 0025 364). We were founded in 2005 by Sister Hester Davel and Prof David Segal in Johannesburg. Since our establishment, we have empowered thousands of children with diabetes in South Africa and 8 other African countries to live **happy, healthy lives.**

Our lollipop logo dispels misconceptions about diabetes and supports our slogan:

*life can be sweet*

YWD relies on donations and sponsorships to achieve our objectives and save lives!


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*life can be sweet*

## What is diabetes?

Diabetes is a chronic condition characterised by high blood glucose levels due to defects in the secretion of a hormone called insulin, or a defect in its action in the body.

Insulin is necessary to help glucose enter the body's cells, where it is used for energy. Glucose comes from digesting carbohydrates and is also produced by the liver. Carbohydrate comes from many different kinds of food and drink, including starchy foods such as bread, potatoes; fruit; some dairy products; glucose and other sweet food.

## The difference between Type 1 and Type 2

**Type 1 diabetes** develops if the body is unable to produce any insulin at all. This is the most common type of diabetes in children. It is an auto-immune disease where the body's own immune system destroys the insulin-producing cells in the pancreas. It is treated by injecting insulin multiple times a day, and insulin is needed from the day of diagnosis to survive. Type 1 diabetes cannot be prevented.

**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. This type of diabetes is on the rise in children due to the increase in child obesity and sedentary lifestyles. It is treated with weight control, healthy eating, exercise and oral diabetic medication (pills). Many people with type 2 diabetes may go on to also use insulin.

## Symptoms of diabetes

Schools can be in a position to notice the signs that a child has diabetes. The main symptoms are:

- increased or excessive thirst
- passing urine frequently (especially at night), onset of bed wetting
- extreme tiredness
- unexplained weight loss

- blurred vision
- nausea and vomiting
- extreme hunger

Diabetes is diagnosed by a simple blood test and once treated the symptoms are usually quickly relieved. However, if all of these symptoms are missed, it can lead to a life-threatening condition known as diabetic ketoacidosis (please see Ketones section below).

## Managing Type 1 Diabetes

The goals of diabetes treatment in children are:

- To keep blood glucose levels as close to the levels of a person without diabetes as often as possible. This needs to be maintained to avoid acute (short term) or chronic (long term) complications
- To maintain normal growth and development
- To promote healthy physical, emotional, and social well-being

Efforts to maintain blood glucose levels in a target range involve balancing food, exercise and insulin, including the child's emotional status. Food raises blood glucose levels whereas exercise and insulin lowers the blood glucose.
Without good control, diabetes can result in long-term complications such as heart disease, kidney failure, nerve damage, amputations, blindness and strokes. High blood glucose levels at school impair a learner's memory, concentration and their ability to learn.

## Checking blood glucose levels and targets

Regular blood glucose checks must be done to determine the amount of glucose in the blood to help keep the blood glucose level within the target range.

Testing blood glucose levels involves placing a test strip into a small electronic device (a glucose meter). The side of the child's finger is pricked to obtain a small drop of blood which is then placed on the test strip. It usually takes 5 seconds to produce a result shown as a number. Younger children, those newly diagnosed or with learning difficulties may need assistance with blood glucose testing.

**Steps to test blood glucose levels:**

1. Make sure the child's hands are washed before testing; dirty hands may affect the reading, and this can lead to making the wrong insulin adjustments
2. Hands must be warm and dry before testing blood glucose
3. Insert the strip into the meter; most meters will then turn on automatically and show a blood drop icon when ready
4. Prick the finger on the side of the fingertip. This is to prevent pain and damage to the nerve endings on the top of the fingertip. It is advised to recommend an alternative finger for children who continuously use the same finger
5. Apply the small blood drop to the strip in the glucose meter
6. Make a note of the blood glucose level in the child's log book and if reading is out of target range follow their parents' instructions in how to correct a low or high blood glucose reading

***Blood Glucose Results:***

The target range is designed to keep the child safe and prevent long term complications. This range is individualised by the child's health care team. A guideline for acceptable control during the day, before meals and after meals, is the following:

Toddlers and pre-school: between 6.0 – 11.0 mmol/l
Primary school children: between 5.0 – 10.0 mmol/l
Teenagers and adolescents: between 5.0 – 10.0 mmol/l

Normal blood glucose in people without diabetes: between 3.8-7.2 mmol/l

A blood glucose reading below 4.0 mmol/l is considered **hypo**glycaemic, usually called "a low" or "a hypo"
A blood glucose reading above 10.0 mmol/l is considered **hyper**glycaemic, called "a high" or "hyper"

Symptoms of hypoglycaemia and hyperglycaemia are discussed below.

*When to test:*

- before meals
- before, during and after physical activity
- if the child is unwell
- any time the child feels that their blood glucose level is falling too low (see symptoms of hypoglycaemia) or climbing too high (see symptoms of hyperglycaemia)
- testing is also advised if you see a difference in the child's behaviour or reactions

It is medically safe for the child to test at their desk. It does not present a danger to other students or staff members. This reduces the amount of missed classroom time and the student does not have to delay treatment for low or high blood glucose levels.

## Insulin Injections

Insulin is a life-saving drug for children with diabetes. It is important to understand that there are different types of insulin. The child might be on a different insulin regimen using different types of insulin to a peer who also has diabetes.

***Two injections a day***

Children who take two injections a day usually take them at breakfast and the evening meal, and so will not usually need to inject during the school day.

***Multiple daily injections (also known as basal bolus)***

An increasing number of children now take more than two injections per day. Taking more injections gives greater flexibility in when to eat and how much

to eat, according to physical activity and blood glucose levels. Children on this regimen will require a short/rapid acting insulin injection with each meal as well as a long acting insulin injection at bedtime and/or in the morning. This will mean that they have to have an injection at school at lunchtime. Extra short/rapid acting insulin injections are also given to correct high blood glucose levels.

Injections can be given either by syringe or insulin pens. With syringes, insulin will be drawn up from a vial. Insulin pens are preloaded with insulin and have a dial that adjusts the insulin dose.

If the child wishes, the school should identify a private area where the injections can be taken. If not, the child should be allowed to inject where they feel it is most appropriate (e.g. at their desk in class). At least two staff members should be trained to give insulin or supervise the student in self-administration for younger children or those newly diagnosed that may need help with injecting.

## Insulin Pump

An insulin pump is a small electronic device that delivers insulin continuously via a thin flexible tube. The tube is connected to a cannula, which is inserted under the skin. The cannula can usually stay in place for 2–3 days so should not need changing at school unless it becomes dislodged or blocked. The child should have extra supplies at school should this occur.

***Two injections a day*** (Mix insulin of short and long acting)
Children who take two injections a day usually take them before breakfast and before the evening meal, and might not need to inject during the school day or break.

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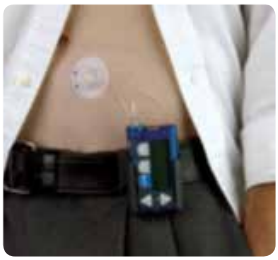

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Insulin pumps are attached to the child at all times, unless the child goes swimming or takes a shower/bath, where they will then disconnect the pump for a short time and can be clipped back on after the activity or swim. While insulin pumps are fairly robust, they are expensive pieces of equipment and need to be looked after.

## Storage of Insulin

Opened vials or pens of insulin may be kept at room temperature for 30 days in a cool, dry place out of direct sunlight. The child should keep a bag containing a blood glucose meter, insulin, and treatment for low blood glucose levels with them at all times or in a classroom where it is easily accessible when needed (including during breaks). This bag must be kept out of the sun since the insulin will be degraded and can cause hyperglycaemia due to non-functioning. Unopened vials or pens should be stored in a refrigerator. They may be used until their expiration date and must then be discarded.

## Hypoglycaemia: low blood glucose

**Definition**
Hypoglycaemia occurs when blood glucose levels are below a child's target range, usually under **4.0 mmol/l.**

This can happen when:

- The body gets too much insulin or not enough food
- Meals or snacks are missed or eaten late
- Not eating all the carbohydrates in the meal or snack
- The child gets more exercise than planned

***Mild to moderate hypoglycaemia***

**Symptoms**
The signs can be different for each child and the child or their parent can tell you what their warning signs are.
They generally include the following:

- Shakiness, trembling
- Pale skin
- Sweating
- Rapid pulse
- Hunger
- Irritability, crying
- Poor coordination
- Giggling or being silly
- Dizziness
- Blurred vision
- Fatigue, sleepiness
- Headache
- Slurred speech
- Lack of concentration, day dreaming
- Aggression

**Treatment**

1. Students should not be left alone nor sent to the office with another young student during suspected hypoglycaemia
2. Check the child's blood glucose level, if you are not able to do so, assume hypoglycaemia
3. Immediately give the child a fast-acting carbohydrate food or beverage as recommended by the parents


4. Any ONE of the following can be used:
   - ½ can of regular coke (NOT Coke Light or Tab)
   - ½ glass of fruit juice
   - 3 - 5 glucose tablets (e.g. Super C)
   - 2-3 teaspoons honey or syrup
   - 7 jelly babies
5. Re-check child's blood glucose level after 15 minutes
6. Give another fast-acting carbohydrate if their blood glucose remains low (<4.0 mmol/l)
7. When the child feels better, feed a meal or snack as soon as possible, such as a sandwich, fruit, milk, biscuits or FUTURELIFE® High Energy SmartBar
8. Give the child time to recover. Eg, a test should not be written immediately after an episode of hypoglycaemia
9. The child should not do any activity or exercise after hypoglycaemia until they have fully recovered with stable, in-target blood glucose levels
10. Always make a note to the parents in the event of a low and how it was treated
11. Headaches are common after hypoglycaemia

## Severe Hypoglycaemia: THIS IS A MEDICAL EMERGENCY

**Symptoms**

- Loss of consciousness
- Seizures or convulsions
- Inability to swallow or follow commands

Very young children who aren't aware of the symptoms or who can't communicate that they are feeling "low" need careful observation for subtle signs like daydreaming, lying on their arms, not reacting to any interactions or irritability.

### Treatment

1. Never put food or liquid into the mouth of a child that is unconscious, convulsing or cannot swallow
2. Position the child in the recovery position (lying on left side); check that the airway is clear and that the child is breathing
3. If the child is convulsing, protect the child from injury of nearby objects
4. Have a designated person give the child a Glucagon injection (see below)
5. Notify the parents and child's doctor immediately

## Glucagon

### Definition

Glucagon is a hormone which raises blood glucose within 10 minutes. It needs to be given by injection when the child is unconscious, convulsing or unable to swallow due to severe hypoglycaemia in order to save the child's life. Any staff member who is trained to administer Glucagon should know where it is kept at all times. You cannot harm the child by giving them a Glucagon injection.

### Instructions

Glucagon comes in a bright orange box. Inside is a dry-powder or tablet in a vial and a pre-filled syringe containing sterile water that is used for dissolving the powder.

1. Take the orange cap off the vial
2. Inject all the liquid into the vial
3. Mix the solution by shaking it
4. Draw up the solution with the same syringe
5. Inject the solution into the buttocks or upper thigh of the child
   - For children under 30kg (< 8 years old) inject half of the solution
   - For children over 30kg (> 8years old), inject all of the solution
   - If the child is having convulsions, have another person hold the child down while injecting the Glucagon

6. Rub the injection site to increase absorption
7. The child should recover within 15 minutes, if not, call an ambulance
8. Give the child fast acting carbohydrates and a snack as described in hypoglycaemia treatment when they regain consciousness
9. Stay with the child until their parents or emergency medical services have taken over their care

Headaches and vomiting are common symptoms after administering Glucagon. The child will most likely want to go home to recuperate after experiencing severe hypoglycaemia.


## Hyperglycaemia: high blood glucose

**Definition**
Hyperglycaemia occurs when blood glucose levels are above a child's target range, usually above 10.0 mmol/l.

**Causes**
- The body gets too little insulin, too much food, or decreased exercise
- The body is under stress from a cold, sore throat, or other illness
- The child is emotionally upset

**Symptoms**
- Increased or excessive thirst
- Fatigue, weakness
- Increased need to urinate
- Blurred vision
- Nausea

**Treatment**

1. Check the child's blood glucose level
2. Give glucose-free beverages (like water or Coke Light)

3. Allow free access to the bathroom
4. Give extra short-acting insulin according to parent's instructions to decrease the blood glucose levels
5. Check for ketones (see below)

## Ketones

When the body's cells don't get enough insulin, the body starts to burn fat instead of glucose for energy, producing waste products called ketones. Very high levels of ketones cause a condition called diabetic ketoacidosis (DKA), which makes the pH of the blood more acidic. Ketones can be detected with a simple urine or blood test. DKA is a dangerous condition and must be treated promptly. Left untreated for many hours or days, it can lead to a diabetic coma. Ketones also occur when a child with diabetes becomes ill (eg influenza, tonsillitis etc). The body needs more insulin at this time. Ketones may also occur when the child has missed an insulin injection or when the blood glucose is over 14.0 mmol/l for an extended period.

### Symptoms

- Abdominal pain
- Nausea
- Vomiting

A positive urine test for ketones occurs when the colour of the urine strip changes to a pink or purple colour. The darker the colour, the higher the level of ketones. Another way of testing for ketones is using a ketone meter. Ketones are measured in the same way blood glucose is tested. Any value ≥3.0 mmol/l requires prompt treatment.

### Treatment

1. Test for ketones using a urine or blood test under any one of the following conditions
   a. Blood glucose is above 14.0 mmol/l
   b. Stomach pain
   c. Nausea and/or vomiting
   d. Any other illness
2. Notify parents immediately if ketones are present

3. Give insulin and fluid according to the parent's instructions
4. Allow free access to the bathroom
5. Do not let the child perform any physical activity for the rest of the day

## Carbohydrate counting

The nutritional needs of children with diabetes do not differ from the needs of children without diabetes. They should follow a healthy meal plan just like anyone else.

However, with insulin regimens, the dose of insulin needs to be matched to the amount of carbohydrate content of a meal and exercise. Meals should preferably not be skipped and adequate time to finish lunch is needed for children with diabetes to help prevent hypoglycaemia. The child may need to eat in class when treating hypoglycaemia.

Food containing carbohydrate gets converted to glucose and therefore will increase the child's blood glucose levels. Protein and fats have very little effect on blood glucose.

Some examples of carbohydrates:

- Bread, muffins, doughnuts
- All fruits
- Sweets, biscuits, chocolates, baked products
- Cereal, pasta, rice
- Milk, yoghurt, ice cream

Children with diabetes are able to eat any foods they like as long as they match the carbohydrate content with their insulin dose. This is the basis of carbohydrate counting.

It is advised that children should avoid glucose-containing soft drinks such as regular Coke, Fanta, Cream Soda and fruit juice as the glucose in these drinks are absorbed too rapidly for their insulin to work effectively. However, these are good treatments for hypoglycaemia. It is thus important that the tuckshop or food services of the school sell glucose-free drinks and healthy alternatives. This will also allow other students to make healthier choices.

## Healthy lunch box

As healthy eating is a key strategy in managing diabetes, it is of vital importance that children bring the right food options with them to school. Foods that are high in sugar, consist of refined (white) carbohydrates, take aways or fast foods are not recommended as they will all have a negative effect on the child's blood glucose levels.
Packing lunch is a great way to ensure that the child gets a nutritious meal to keep going throughout the day. This practice is not only cost effective, but it also ensures that the parents are able to control what foods their child is eating, as well as portion sizes. Foods commonly bought at the tuck-shop are often higher in calories, sugar, unhealthy fats and salt. Avoiding or limiting these types of foods is not only important for those living with diabetes, but rather it is a general guideline that everyone should follow.

A well-balanced lunchbox contains food from the following groups:


- **Grains or starches:** Choosing the right source of carbohydrate will ensure that the brain is supplied with a continuous amount of glucose. The intake of Low glycaemic index (GI), high fibre carbohydrate sources mean that the glucose is slowly released into the blood stream over a longer period of time. These options are not only higher in fibre but contain more vitamins and minerals and keep the child fuller for longer. Some easy options for lunch boxes include:
  - Low GI, whole wheat, high fibre, rye or seed bread. Example: FUTURELIFE® Smart Bread™ as a high protein, low GI brown bread option.
  - For those who don't like bread, try a whole wheat wrap, pita bread, whole grain crackers or other grains such as brown rice, couscous, whole-wheat pasta, or quinoa.

- **Protein:** Choose leaner, less processed meats such as eggs, tuna, grilled or smoked chicken, steak strips, homemade meat balls, lean biltong, reduced-fat cold meats and reduced or low-fat cheeses. These can be added to a sandwich, as part of a salad or cut into pieces and added to a lunchbox. For vegetarian's (and meat-eaters alike) plant proteins such as beans, peas, lentils, chickpeas, soya or quinoa can be added to lunch boxes. However, it is important to note that many of these plant proteins contain both protein and carbohydrate, therefore it is important to consider the total carbohydrate content of the meal.

- **Fruits:** Are great sources of vitamins, minerals, antioxidants and fibre; however, they contain more naturally occurring "fruit sugar" (fructose) compared to vegetables. Therefore, portion control is important when having fruit. Examples: berries, melons, peaches, nectarines, apricots, apples, pears, citrus, watermelon. These can be included whole, sliced, cubed or even put on a skewer to make fruit kebabs. Avoid dried fruit since 1-2 pieces is often equal to 1 fresh fruit portion.

- **Vegetables:** Some examples that you can include in a lunch box are cucumber, carrot, bell pepper, tomatoes, celery sticks, gherkins, peppadews, broccoli and any other salad veggies. Serve your chopped vegetable with homemade hummus or cottage cheese as a dip.

- **Dairy:** Is another food group that contains both protein and carbohydrates, therefore the total carbohydrate content of the meal should be considered. The following dairy is recommended:
    - Low fat milk
    - Low fat or full cream unsweetened yoghurt (no added sugar)
    - Low fat or white cheeses (Example: feta, cottage cheese)

- **Fats:** Have many functions in the body and therefore should be included. It is important to remember that fats have twice as much energy per gram compared to protein and carbohydrate, so you don't need large portions. Make sure you prioritise heart-healthy fats such as nuts, seeds, olives, avocado, lite mayonnaise, pesto, fatty fish (pilchards, sardines, salmon etc.), and healthy oils such as olive, canola, sunflower or avocado oil.

- **Beverages:** Water is always the best option here. Steer clear of the glucose-containing beverages (including fruit juice) unless using to treat hypoglycaemia.

Healthy snack options that can be added to the lunch box include:

- Air-popped popcorn
- Fresh fruit
- FUTURELIFE® High Protein SmartBars
- FUTURELIFE® High Protein LITE SmartBar
- FUTURELIFE® Smart Drinks
- Yoghurt tubs
- Chopped up vegetables with a dip:
  - Hummus
  - Cottage cheese
  - Guacamole
- Whole-wheat crackers with a protein spread
  - Peanut butter
  - Bovril
- Dry nibbles:
  - Trail mix
  - Raw, unsalted nuts (small handful)
  - Seeds



**Helpful hint:** For children that arrive at school without breakfast or are sent off to sport without lunch, why not keep a box or sachet of FUTURELIFE® HIGH ENERGY Smart food™ in your drawer? This can easily be mixed with water and provides a balanced, low GI meal that will help to prevent a hypoglycaemic episode.

## Class parties


We now know that there is no food that a child with diabetes cannot eat, as long as it is scheduled into the meal plan and is balanced with the correct amount of insulin. So, at class parties, children with diabetes are welcome to enjoy the treats, like cake. One of the best ways to handle this situation is to ask the child what carbohydrates in their packed lunch they want to swap for the birthday treat. However, parents may feel differently, so please consult them with regards to their child prior to a scheduled class party or at the beginning of the year.

## Playing sports and other participation

Children with diabetes can and should play games and sports. Everyone can benefit from regular physical activity. Exercise helps to lower blood glucose levels, maintain cardiovascular fitness, and maintains weight. Diabetes need not hinder a child from representing their school or country in any sporting event.

A child with diabetes may need to eat a snack before, during, or after strenuous exercise. The child may also need to check their blood glucose levels before taking part in a game or sport to determine when to eat a snack and how much food to eat. Insulin pumps may need to be removed for contact sports and swimming. It is important to always keep extra snacks readily available for when the child is doing sports. Students with diabetes should also be allowed to wear their medical identification during physical activity. Diabetes should not be an excuse for opting out of school activities. If this happens regularly, speak to the child's parents to find out more about the individual situation.

Children with diabetes should not exercise if they are having symptoms of hypoglycaemia or if blood glucose is so high that they have started to produce ketones.

## Exams and school performance

Children with diabetes function optimally when their blood glucose is within target range. During hypoglycaemia, the brain is deprived of glucose, causing cognitive changes. Should this occur during a test or exam, they will need access to food. It is advised to allow the child to check their blood glucose level prior to starting a test or exam. During the test, they should be allowed to treat their hypo and recuperate for 15 minutes away from their paper, and then be allowed to return and have extra time to make up for the time lost.

For hyperglycaemia, the child may need to use the bathroom more often during tests or exams.

Hyperglycaemia also affects the child's ability to concentrate and may lead to irritability.

## Substitute teachers

It is essential that a substitute teacher be informed that they have a child with diabetes in the class. The basics of hypoglycaemia, special allowances for the student such as extra bathroom breaks, eating in class, etc. should be explained. This will also apply to school outings and visits.

## Psychology of diabetes

Diabetes treatment is life-long, continuous and frequently frustrating condition for the child and their family.

Children react differently to having diabetes. They may be accepting, resentful, open to discussing it, or attempt to hide it. Often, the same child will experience all of these feelings over time. School personnel should be aware of the student's feelings about having diabetes and identify ways to ensure the student is treated the same as their peers. The best way to handle this will depend on the individual child's personality. Some children will check their blood glucose or give themselves an insulin injection for show-and-tell. Older children have presented science projects on diabetes and its care. However, a child who is shy or sensitive about having diabetes may not wish to be singled out in this way. Take cues from the child on how to handle his or her diabetes. Be sure to respect the student's right to privacy.

For the teenager with diabetes, having to take insulin, check blood glucose, and follow a meal plan is tiresome and can compound the normal difficulties of adolescence. It is typical behaviour for a teen with diabetes to become inattentive in their diabetes care and try to act like everyone else.
A child with diabetes need not be singled out for special attention; this could make them feel different, lead to embarrassment, or make them feel angry and resentful about having diabetes.

Hypo- and hyperglycaemia may have an impact on the child's behaviour in the classroom. This may include unusual:

- Lack of concentration
- Being irritable
- Being restless or agitated
- Being argumentative
- Being tired
- Asking to go to the bathroom or drink water frequently

If clarification about the child's diabetes management is needed, or there is concern about the child's behaviour or emotional health, it is best to discuss this with their parents. Each child with diabetes is an individual and each has a different management regimen. Giving advice based on your previous diabetes experience should be avoided.

## Bullying and Teasing

Bullies tend to pick on those they see as an easy target and will choose something that makes them stand out to pick on – in this case, a child's diabetes diagnosis and its treatment. Bullying makes the bully feels more powerful and he or she gets the attention of their friends. A bully often tries to create a gang mentality to show that his or her friends agree – "We all think this of you".

Children who are not comfortable with their own diabetes may react more intensely when bullied than those who manage their condition confidently. The outcome of bullying for the child with diabetes includes reluctance to manage their diabetes (testing, injecting and eating in a healthy way) at school, higher social anxiety, depression, and loneliness. This has a clinical outcome of poorer diabetes control, which may lead to long-term complications.

If the child is being bullied because of their diabetes, it is important not to accept this as normal. Others should not make them feel fearful or self-conscious about their diabetes. If you notice the child being bullied, or the child reports to you that they are being bullied:

- Encourage the child to stand up against the bully without resorting to retaliation
- Encourage the child's friends to help stand up against the bully
- Ignoring the bully does not usually help if the bully is determined to succeed
- Crying only makes the bully feel more powerful – an active response will be better
- Encourage the child to befriend the bully when he or she is on her own. For example, walk with him/her to the next class, comment on something he/she has done well, share a snack with them, or ask a friendly question. This is

not easy to do, but it can soften the bully's attitude because the child appears confident and not shaken by the bullying

- If the bully does not respond to friendship, the child can keep a confident look and walk away or say "Please stop that – I have had enough." Walk tall. Their body language can say a lot to the bully about his or her power over them.
- If none of this works, the child should tell the teacher they trust about the bullying. The teacher should then take steps to stop the bullying.
- Parents and other diabetes care-givers can help make the child feel comfortable with their diabetes. Children who accept their diabetes and its management are much less of a target for bullies.
- You may also explain diabetes to the child's friends or classmates if the child does not mind you doing so. Educating other students about diabetes is important to help answer any misconceptions the students may have.

## Disposing of sharps

Used blood glucose test strips may be discarded in the regular dustbins. Disposal of sharp objects, such as lancets and needles, needs to be discarded so that no one is in danger of accidently pricking themselves. A heavy-duty plastic or metal container with a tight-fitting lid that is kept at school or in the student's bag can be used, which can later be dropped off at a pharmacy or hospital for incineration. Example: an old Oros or Coke bottle.

## Excursions and school camps

School trips are an exciting and important part of school life and there is no reason for a child with diabetes to be excluded. It is useful to provide parents with the menu and program prior to the camp so that they may plan insulin doses and meals.

***Day Trips***

Going on a day trip should not cause any real problems, as the routine will be much like that of school. The child should take:

- their insulin and injections

- their blood glucose meter
- hypoglycaemia treatment
- pump supplies (if applicable)
- extra food/snacks in case of delays
- emergency contact information

***Overnight Stays***

If the child cannot do their own injections, manage their pump and/or check their own blood glucose levels, this will need to be done by a member of staff. Staff should meet with the child's parents well in advance to discuss what help is required and who will assist. The same equipment will need to be packed, just with more supplies to last the duration of the trip.

The additional physical activity, change in routine, and excitement of the camp will increase the risk of hypoglycaemia. The child should have access to fast-acting glucose at all times, and the supervisors should be aware of hypoglycaemic symptoms.

***Overseas Tour***

Children with diabetes are easily able to travel abroad. They need a letter from their doctor stating their diagnosis and the need for medical supplies to show to the border control. Diabetes medication and supplies must be carried in hand luggage and should be split between two bags in case a bag is lost or stolen.

## Myth busters

Diabetes is contagious.

False. You cannot "catch" diabetes from someone who has it. Diabetes can run in families. Researchers are still studying how and why diabetes occurs in certain children/families and not in others.

You can just take a pill instead of insulin injections.

False. Insulin cannot be swallowed like a medicine as it is a protein and would be broken down in the stomach. Type 2 diabetes patients take pills that stimulate their pancreas to make more insulin. Children with type 1 diabetes cannot make any insulin at all, so they need insulin injections.

Children with diabetes can get better and stop insulin.

False. Diabetes has no cure. It is a life-long condition but can be successfully managed with regular glucose tests, insulin, healthy eating and exercise.

Children with diabetes became diabetic from eating too many sweets.

False. Type 1 diabetes has a genetic predisposition whereby the immune system destroys pancreatic cells that produce insulin. Type 1 diabetes can also occur as a complication of another chronic condition such as Cystic Fibrosis. There is no way to prevent Type 1 diabetes.

## Legal considerations

According to the South African Children's Act [38 of 2005] Chapter 2, Section 11(2), "Children with disability or chronic illness", it states that

In any matter concerning a child with chronic illness due consideration must be given to –

a) providing the child with parental care, family care or special care as and when appropriate;
b) providing the child with conditions that ensure dignity, promote self-reliance and facilitate active participation within the community; and
c) providing the child with necessary support services.

Chapter 2, Section 10, "Child participation" states,

Every child that is of such an age, maturity and stage of development as to be able to participate in any matter concerning that child has the right to participate in an appropriate way and views expressed by the child must be given due consideration.

Chapter 3, Subsection 7(1j) "Best interests of child standard", states that

Whenever the provision of this Act requires the best interests of the child standard to be applied, the following factors must be taken into consideration where relevant, namely –
(j) any chronic illness from which the child may suffer;

The aim of section 11 is to ensure that these children are treated with dignity, that their right to participation is respected and to provide necessary support services to ensure that they are not further discriminated against or neglected due to their chronic illness or disability. A child, who is living with a disability or is chronically ill, must be given every opportunity to take part in social, cultural, religious or educational activities.

Students with diabetes must have the same access to educational and school-sponsored opportunities as students without diabetes. Related aids and services designed to meet the individual needs of the student must be accommodated by the school and its staff.

## Summary: What you as the teacher need to do

- Know the identity of students with diabetes in your classroom
- Allow the child to eat, drink and use the bathroom as and when necessary
- You must be able to test the child's blood glucose levels
- You need to be able to recognise and treat hypoglycaemia
- At least two members of staff should be trained and able to give a Glucagon injection in an emergency
- Always carry a quick snack whenever you and your student leave the class for assembly, fire drills, field trips etc.
- Communication between the school and parents is vitally important in ensuring adequate diabetes management at school and to ensure the child's safety
- Discrimination at school because of diabetes should not be tolerated from either staff or other learners
- Don't draw unnecessary attention to your student's condition, respect the student's confidentiality and right to privacy
- Extra supplies should be kept at the school, these include testing strips, lancets, needles or syringes, batteries for the glucose meter, insulin pump supplies, quick-acting and slow-acting carbohydrate snacks and the Glucagon emergency kit. These should be supplied by the parents

### KEY TERMS

| | |
|---|---|
| **Hypoglycaemia:** | low blood glucose, usually below 4.0 mmol/l |
| **Hyperglycaemia:** | high blood glucose, usually above 10.0 mmol/l |
| **Ketoacidosis:** | damaging buildup of ketones in the blood because there is not enough insulin in the body |
| **Glucagon:** | a hormone that raises blood glucose, given by injection to a child with diabetes who is suffering from severe hypoglycaemia and is unconscious or convulsing |

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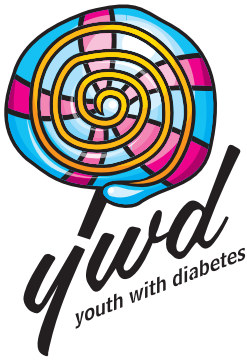


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