


Hill Avenue Academy

In Association with:

Manor Multi-Academy Trust



Guidance for the Management of Children and Young People with Diabetes in Education

The Royal Wolverhampton 
NHS Trust

Guidance for the Management of Children and Young People with Diabetes in Education

This guidance is to enable the safe management of Children and Young People (CYP) with diabetes within schools through providing general information and direction for all those involved in their care. The document has been developed by a multidisciplinary working party in line with current school guidelines from a variety of sources.

This guidance will form part of the management of CYP with medical needs in schools document. These guidelines are evidence based using the best current information/research available; this is listed in the reference section.

Supporting Policies, Documents and Guidance

This guidance should be read in conjunction with the following national and local policies and guidance:-

Making Every Young Person with Diabetes Matter (Department of Health, 2007)
Guidance for the Management of Children and Young People with Diabetes in Schools, (Dudley Primary Care Trust, 2007)

Supporting pupils at school with medical conditions (Department of Health, 2014)
Supporting Children and Young People with Diabetes for Nurses in School and Early Year Settings (Royal College of Nursing, 2009)

Summary of Content

This guidance covers a number of key issues concerning the management of diabetes within a school setting including what is diabetes, insulin regimens, disability discrimination, diet, blood glucose monitoring (BGM), exercise, emergency procedures and treatment, individualised health care plans (IHCP), training and the implications of having a child or young person with diabetes in the school environment.

Guidance developed in consultation with: The CYPWMDN Schools working group, which consists of Paediatric Diabetes Specialist Nurses (PDSN's), Paediatric Diabetes Dietitians, Birmingham Schools and Early Years Medical advisors, and education services, within the West Midlands Region.

Process and Frequency of Review

These guidelines will be subject to review every two years unless there is significant clinical change needed. This review will be coordinated with the CYPWMDN working in close consultation with education and service users.

Glossary of terms

BGM – Blood Glucose Monitoring – this is the monitoring of blood sugar levels and will be referred to as blood glucose.

CYP – Children and Young People up to the age of 19 years old with Type 1 Diabetes.

Dietitian – The dietitians are able to give advice on managing diabetes in relation to diet and exercise. Every CYP with diabetes receives advice from a registered dietitian.

Family – this includes parents, carers, guardians, and other family members involved in the care of the CYP.

Glucogel ®– refers to any rapid acting glucose gel.

Hyperglycaemia – This is when the blood glucose level is too **HIGH** (Hyperglycaemia)

Hypoglycaemia – This is when the blood glucose levels drop too **LOW** is often called a ‘Hypo’

IHCP – Individualised Healthcare Plans

Insulin – Insulin is the hormone that helps glucose, produced from the digestion of carbohydrate in food, to move into the body cells where it is used for energy. All CYP with Type 1 diabetes require daily doses of insulin.

PDSN – Paediatric Diabetes Specialist Nurse (refers to all nurses working in diabetes); this person only works with CYP with diabetes and have special expertise and experience in diabetes care for CYP. The PDSN offers specialist advice to help CYP and their family to manage their diabetes. All CYP are also under a Consultant Paediatrician for their diabetes care, at their hospital and a General Practitioner.

School – includes early year settings, primary, secondary, special, academies, colleges, universities and any other educational establishment.

Seizure – Involuntary uncontrolled movements by a person, caused by muscle contractions.

Introduction

The incidence of CYP with diabetes is increasing and now affects over 26,000 CYP under the age of 25 years old in England and Wales (NPDA, 2013-14 report), so most school staff will come across at least one child with diabetes during their career.

Diabetes Mellitus is a condition, which develops when the body is unable to maintain the correct amount of glucose in the blood.

There are two main types of Diabetes and the management of these is different.

- Type 1 is solely Insulin Dependent
- Type 2 (previously known as non-insulin dependent diabetes) can be treated with diet, tablets (oral medication) and/or insulin.

Type 1 Diabetes

- The majority of CYP with diabetes have Type 1 Diabetes (accounting for 95% of the population of England and Wales).
- This means that these CYP are unable to produce their own insulin as the cells in the pancreas that produce it have been destroyed.
- Without the insulin, the child's body cannot use glucose for energy, and this is life threatening.

All CYP who have Type 1 Diabetes require insulin (either via injections or an insulin pump) and dietary modifications for life. It cannot be cured and can be life threatening.

Type 2 Diabetes

- Tends to affect mostly adults and management includes regulating their diet, taking medication and many are now requiring insulin injections.
- The incidence of Type 2 diabetes is increasing in CYP due to changes in society; linked to the increase in childhood obesity.
- In Type 2 diabetes the pancreas is still producing some insulin but it is ineffective or slow.
- CYP with this type of diabetes are managed on oral medication together with a 'healthy diet' and exercise.
- CYP with Type 2 diabetes may require insulin therapy at a later time if oral medication becomes ineffective.

What is insulin and what does it do?

- Insulin is a hormone that is produced by the pancreas, which helps glucose enter the cells of the body to be used for energy.
- We obtain glucose from the sugary and starchy (carbohydrate) food that we eat.
- For people without diabetes insulin is produced automatically and enables the glucose from the food eaten, to pass into the cells and at the same time maintain the correct amount of glucose in our blood stream.
- For those with diabetes the blood glucose level rises without the production of insulin. The kidneys pass the excess glucose into the urine causing frequent passing of urine, increased thirst and gradually tiredness and weight loss.
- For more information on this, please visit the Diabetes UK website for their campaign about the 4T's (Toilet, Thirst, Tiredness, Thinner)
https://www.diabetes.org.uk/Get_involved/Campaigning/Our-campaigns/4-Ts-campaign/

Diabetes cannot be cured, but it can and must be controlled

THESE ARE THE MAIN SIGNS AND SYMPTOMS OF TYPE 1 DIABETES:

- Frequent passing of urine
- Increased thirst
- Tiredness
- Weight Loss

How are children and young people with diabetes cared for?

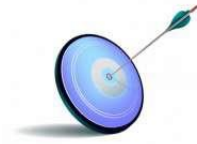
Parents should meet with the relevant school personnel as soon as possible to devise the IHCP.

CYP with diabetes are cared for by a team of professionals, these include a Paediatrician, General Practitioner, Dietitian, and a PDSN who will liaise with the school at diagnosis or if problems arise.

The PDSN is an excellent resource for school. The family of the child will know the PDSNs at their hospital who are responsible for their child's care.

Aim

To ensure the safety of the CYP with diabetes in early years settings and all educational establishments.



This guideline along with the training will enable staff to feel confident about having a CYP with diabetes in their educational establishment and ensure that the CYP with diabetes will be safe at early year's settings, school or college.

Diabetes does not prevent participation in activities but may require the following considerations:

- Extra toilet privileges
- Extra care if unwell
- Provisions for privacy for blood testing or injecting in school
- Extra supervision
- Eating at additional or different times, especially during physical education.
- Extra support at times of exams

Duty of care

Schools and educational authorities are legally responsible to provide:

- Adequate supervision
- No discrimination based on the CYP's medical condition.
- A safe environment

(For more information please go see the [Children and Families Act \(2014\)](#) and [Supporting Pupils at School with Medical Conditions \(DoE, 2014\)](#)):

Responsibility of staff

- To ensure the safety of the CYP with diabetes whilst in their care.

Responsibility of the family

- To inform the school of their child's medical condition and particular requirements.
- To provide the schools with appropriate medical supplies including emergency 'Hypo box'.

Global recommendations

“Children and young people with diabetes should have the same social rights as their non-diabetic peers, and no stigma nor discrimination should be attached to Diabetes” (International Society of Paediatric and Adolescents Diabetes, 2014).

- Diabetes should not alter a child’s/adolescents academic potential
- Diabetes should not be the cause for being excluded from any type of activity nor for non- attendance at school or college
- Education and the social integration within school and college is of fundamental importance (Department of Health, Diabetes Policy, 2007)

Disability Discrimination Act/Equality Act 2010

Some CYP with medical needs are protected from discrimination under the Disability Discrimination Act (DDA) 1995/Equality Act 2010.

The public sector Equality Duty, as set out in 149 of the Equality Act, came into force on 5 April 2011, and replaced the Disability Equality Duty.

Responsible bodies for schools **must not** discriminate against pupils in relation to their access to education and associated services. This covers **all aspects** of school life including: school trips, school clubs, and activities. Schools should make reasonable adjustments for disabled children including those with medical needs at different levels of school life; and for the individual disabled child in their practices, procedures and school policies.

Children and Families Act 2014

Section 100 of the Children and Families Act 2014 places a duty on governing bodies of maintained schools, proprietors of academies and management committees of PRUs to make arrangements for supporting pupils at their school with medical conditions.

In the meeting the duty, the governing body, proprietor or management committee must have regard to guidance issued by the Secretary of State under this section.

Supporting Pupils at School with Medical Conditions, DFE Sept 2014

On 1 September 2014 a new duty came into force for governing bodies to make arrangements to support pupils at school with medical conditions. This statutory guidance in this document is intended to help school governing bodies meet their legal responsibilities and sets out the arrangements they will be expected to make, based on good practice. The aim is to ensure that all children with medical conditions, in terms of both physical and mental health, are properly supported in school so they can play a full and active role in school, remain healthy and achieve their academic potential.

School/setting staff may be asked to perform the task of giving medication to children but they may not, however, be directed to do so. The administering of medicines in schools/settings is entirely voluntary and not a contractual duty unless expressly stipulated within an individual's job description. In practice, many school/setting staff do volunteer. If a decision is made that medication is not going to be given, the school/setting will need to consider what other measures are to be taken when children have long term conditions or otherwise need medication. These measures must not discriminate and must promote the good health of children.

Common law duty of care

Anyone caring for children, including teachers and other school staff, has a common law duty of care to act like any reasonably prudent parent. This relates to the 'common law': the body of law derived from court decisions made over the years, as opposed to law which is set down in statute. The duty means that staff need to make sure that children are healthy and safe, and in exceptional circumstances the duty of care could extend to administering medicine and/or taking action in emergency. The duty also extends to staff leading activities taking place off site, such as visits, outings or field trips.

Safeguarding

CYP with medical conditions are entitled to full-time education and they have the same rights of admission to school as other children. In effect, this means that no child with a medical condition should be denied admission, or be prevented from taking up a place in school due to circumstances in relation to arrangements for their condition that have not been made.

Schools therefore must ensure that the arrangements they put in place are sufficient to meet their statutory responsibilities and should ensure that policies plans, procedures and systems are properly and effectively implemented to align with their wider safeguarding duties.

Accommodation

Regulation 5 of the School Premises (England) Regulations 2012 (as amended) provide that maintained schools must have accommodation appropriate and readily available for use for medical examination and treatment and for the caring of sick or injured pupils. It must contain a washing facility and be reasonably near to a toilet. It must not be teaching accommodation.

Paragraph 23B of Schedule 1 to the Independent School Standards (England) Regulations 2010 replicates this provision for independent schools (including academy school and alternative provision academies).

Insulin Regimens

What is insulin and what does it do?

- Insulin is a hormone which is produced by the pancreas, which helps glucose enter the cells of the body to be used for energy.
- We obtain glucose from the sugary and starchy (carbohydrate) food that we eat.
- For people without diabetes, insulin is produced automatically and enables the glucose from the food eaten, to pass into the cells and at the same time maintain the correct amount of glucose in our blood stream.
- For those with diabetes, the blood glucose level rises without the production of insulin. The kidneys pass the excess glucose into the urine causing frequent passing of urine, increased thirst and gradually tiredness and weight loss.
- For more information on this, please visit the Diabetes UK website for their campaign about the 4T's (Toilet, Thirst, Tiredness, Thinner)
https://www.diabetes.org.uk/Get_involved/Campaigning/Our-campaigns/4-Ts-campaign/
- CYP who develop Diabetes have stopped producing insulin and the only way to replace it is by injecting insulin either via a pen device or pump.
- Insulin has to be injected because it is a protein, if it was swallowed like a medicine it would be broken down and made useless.
- There are a number of different insulin regimens that CYP with diabetes can use.
- Most CYP are on intensive insulin therapy which involves a multiple daily injection regimen or insulin pump therapy. A minority of CYP inject insulin two or three times a day but intensive insulin therapy can give greater

flexibility in day to day routines.

Multiple Daily Injection Regimen (MDI)

This is a rapid acting insulin given before breakfast, midday meal and evening meal that is calculated dependent on the amount of carbohydrate being consumed and the blood glucose level and then a long acting insulin given in the evening, usually around bedtime. The insulin is injected using a pen device that holds a number of injection doses but requires to be fitted with a new pen needle for every injection. CYP on this regimen will need to have an appropriate, private area identified where injections can be given and/or supervised.

Insulin Pump Therapy (CSII)

A growing number of CYP have their insulin via a pre-programmed, continuous subcutaneous infusion pump. This involves insulin being dripped in to the CYP 24 hours a day, every day, via a cannula – a tube placed under the skin, into the fat layer on the tummy, buttocks or legs (the same place used when injecting with a pen device). The cannula is attached to the pump by a length of tubing which can be un-clipped from the cannula if necessary, but only for up to an hour a day. As with MDI additional insulin is given for carbohydrate being consumed and to correct the blood glucose level – this is done via the pump itself.

Twice Daily Insulin Injections (BD)

This is a pre-mixed insulin that is a mixture of quick and slow acting insulin which is given pre breakfast and pre evening meal but is now rarely used.

Three Times Daily Insulin Injections (TDS)

This is a pre-mixed insulin given pre breakfast, a quick acting insulin given pre evening meal and a slow acting insulin given pre evening meal or bedtime and again is rarely used.

Supervised administration of Insulin in School Policy

The only treatment for Type 1 diabetes is insulin replacement via pen injection or an insulin pump. It would therefore be detrimental to a CYP's health if insulin were not administered during the school day.

Roles and Responsibilities

Close co-operation between schools, nurseries, families, health care professionals and other agencies will help provide a suitable supportive environment through education and training for CYP with diabetes.

It is vitally important that the responsibility for the individual CYP's safety is clearly defined and that each person involved with CYP with diabetes is aware of what is expected of them and has received adequate training to do so, as well as had their competencies document completed.

We recommend that a minimum of 3 members of staff are trained and competent to ensure that there is always a member of staff available to support the child.

Self-Management

It is good practice to support and encourage CYP, who are able, to take responsibility to manage their own insulin from a relatively early age and schools should encourage this but it is essential that they also provide adequate support and supervision.

The age at which CYP are ready to take care of and be more responsibility for their diabetes does vary. This should be discussed with the CYP alongside their family and diabetes specialist team.

For young children and those with disabilities unable to administer their own insulin, staff volunteers will be sought and trained appropriately by your paediatric diabetes specialist team. A competency check list will be used as the basis for this education and training. Staff will be signed off accordingly by their paediatric diabetes specialist team when felt to be competent, it should be noted that parents/carers need to support in the meantime.

Storage of Insulin

All CYP with diabetes should have insulin stored at school; this includes their insulin in their pen device (if on a multiple daily injection regimen) and a spare insulin cartridge for their pen device regardless of whether they are on a pen or an insulin pump. It is family's responsibility to ensure that a container is provided with the insulin in and that is clearly labelled with the name of the child together with date of birth and form/class. This spare insulin should be placed in a refrigerator.

The refrigerator can contain food but the insulin should be kept in an airtight container and clearly labelled as above. CYP should know where their own medicine is stored. Insulin that is opened can be kept at room temperature for 1 month.

Access to Insulin

CYP need to have immediate access to their insulin when required, it should be agreed in the care plan where the insulin is to be stored and which members of staff have had suitable training to support/supervise or administer the insulin injection/pump boluses.

Disposal of Insulin

Families are responsible for ensuring that date-expired insulin is returned to a pharmacy for safe disposal.

Families should also collect any leftover insulin at the end of each term to ensure that expiry dates are not exceeded.

Sharps Disposal

Sharps bins should always be used for disposal of needles from insulin pen devices and blood glucose monitoring lancet and pump cannulas.

Sharps bins should be situated proximal to where the injections/blood glucose tests are taking place.

Sharps bins can be obtained by families on prescription from the CYP's GP or local council. Your local paediatric diabetes team can advise on this. Sharps bins should be kept in a safe place.

Once the sharps bin is around two thirds full, families should be informed so that a further sharps bin can be obtained on prescription for the GP/local council. The closed and locked sharps bin, should be picked up by parents and returned to the GP/pharmacy for safe disposal.

Schools diabetes supply list

Here is a list that should be provided by families to be kept in school (those items in blue are for pump users only) The child's blood glucose meter and injection pen should be kept in the medical room. However, some older children will carry these items in their school bag. The blood glucose meter and hypo box may need to be stored in the classroom so that it is close to the child.

- Spare insulin cartridge
- Sharps
- Pen
- Battery
- Blood glucose meter/handset plus
- Blood ketone meter plus
- Hypo box

What are carbohydrates?

Carbohydrate foods are broken down and provide us with energy in the form of glucose. There are different types of carbohydrate including fast release (sweets, full sugar drinks, sweet puddings, white bread) and slow release (wholegrain bread, rice, pasta, milk, fruit, and potatoes). Slow release carbohydrates can help to keep blood glucose levels stable and it is recommended to have a source of these at each mealtime.

Why do we carbohydrate count?

Carbohydrate counting allows CYP to have greater flexibility (amount and timing of food) in what they are eating and can provide better blood glucose control. It also means that CYP are not excluded from birthdays/cake sales as long as the 'treat' foods they are having are carbohydrate counted and form part of a balanced diet. Your dietitian can support you and provide you with appropriate resources for carbohydrate counting. CYP will have an insulin: carbohydrate ratio

for each meal which you will be advised upon; a small child may need a small ratio (e.g. 1:25 = 1 unit of insulin to 25 grams of carbohydrate) compared to a teenager (e.g. 1:5 = 1 units of insulin to 5 grams of carbohydrate) and this will give different doses of insulin for the meal.

What about drinks/fluids?

Full sugar drinks are not recommended apart from for treating hypos. Drinks that are suitable include water, no added sugar squash and 'diet' or 'zero' option drinks. Fruit juice and milk contain carbohydrates so these will need to be counted.

Blood Glucose Monitoring

CYP with diabetes need to monitor their blood glucose throughout the day to ensure they maintain good glycaemic control. Blood glucose is obtained by taking a small finger prick sample of blood and applying it to a blood glucose monitoring strip. The blood glucose needs to be taken at regular intervals during the day.

THE TARGET BLOOD GLUCOSE LEVEL IS 4 –

Times that CYP will be required to test their Blood Glucose routinely:

- Before meals
- Before/ after P.E./ swimming
- Prior to mid-morning and/or mid afternoon snack

Other times they will need to test their Blood Glucose will be:

- When CYP exhibits symptoms of hypoglycaemia
- When CYP exhibits symptoms of hyperglycaemia
- When feeling unwell
- Before/ during/after exams or other stressful situations
- Any other time that is specified in the child's IHCP.

Who does Blood Glucose testing?

- CYP at senior school should be able to test their own blood glucose and within reason, be able to act appropriately upon those readings
- Some CYP at primary school will have the skills to take their own blood glucose but will need supervision and assistance in acting upon the readings
- CYP who are too young or are not competent to take their own blood glucose will need this doing for them by a member of school staff
- Any staff member who has volunteered to undertake blood glucose monitoring **must be trained and deemed competent** by the diabetes nurses caring for the child's diabetes – usually a minimum of 3 staff members per school

Where does Blood Glucose monitoring need to take place?

This should be agreed with the CYP, Family and school staff. Blood glucose monitoring can be undertaken in the classroom, office, medical room or any other area where hands can be washed – IT IS NOT appropriate to use the toilets and this includes disabled toilets.

Procedure for Blood Glucose testing by school staff

1. The CYP and you need to wash and dry hands using soap and water (A wet cloth can be used if there are not hand washing facilities)
2. Insert blood glucose test strip into meter
3. Wait for blood sample sign (usually a blood droplet)
4. Select the right depth marker on the finger picker device (This is normally pre set)
5. Obtain a sample of blood from the **side of a finger, excluding thumb and index fingers**. The sites must be rotated to avoid nerve damage
6. Gently squeeze the finger to obtain a drop of blood
7. Touch end of test strip to blood droplet and allow the blood to be absorbed by the strip
8. The meter will begin to count down when enough blood has been obtained
9. Record blood glucose result in child's diary and/or school monitoring book

What can affect the Blood Glucose readings?

It is not easy to maintain blood glucose in target level all the time as this will depend on several factors, these can include:

- Growth spurts
- Stage of puberty
- Prescribed insulin doses (carb ratios)
- Diabetes mismanagement
- Illness
- Activity

Interpretation of Blood Glucose results

Blood glucose results should ideally be between target levels of 4-7.5 mmols. Action may need to be taken if the blood glucose level falls outside of the normal range.

Please note that correction doses of insulin should only be given before meal times, unless otherwise advised by parents or diabetes team.

Below 4mmols	Between 4-7mmols	8-14mmols	Above 14mmols Or
Treat as hypoglycaemia using fast acting glucose - refer to individual health care plan (IHCP)	Target blood glucose If eating give insulin for food as per IHCP No other action to take	Correction insulin may be required as per IHCP This will be on top of usual insulin required for food May need to use the toilet frequently and drink sugar free fluids	Blood ketones should be tested as per IHCP Correction insulin may be required. See child's IHCP If food is to be eaten, then usual meal insulin will be required May need to use the toilet frequently and drink sugar free fluids If feeling unwell with high sugars and/ or ketones, contact child's parents
If child is vomiting, having difficulty in breathing, semi-conscious/unconscious or is having a seizure please dial 999 for an ambulance immediately and contact parents			

Storage of Blood Glucose Meters

Blood glucose meters should be kept in a dry place away from extreme temperatures and away from dust, preferably in the pouches they are provided with. In primary school the blood glucose meter should be in easy reach of the child to enable testing when needed – usually in the classroom with their emergency hypo box.

Sharps Boxes

All sharps and test strips **MUST** be disposed of correctly in a yellow sharps box. There may be different policies in different areas regarding the disposal of sharps boxes – please discuss this with the parents/school nurse.

School Management on a day to day basis:

- Schools to set up individual healthcare plans (IHCP)
- Provide clarity about what is required to support a CYP with diabetes in school.

The healthcare plan should be signed and dated by:

1. Parents/ carers
2. The child/ young person (where appropriate)
3. School representative
4. Paediatric Diabetes Specialist Nurse

Everybody involved in the care planning process should be provided with a copy of the IHCP. It is the responsibility of the school to ensure that the healthcare plan is reviewed annually or earlier if the CYP needs have changed.

The IHCP should include:

- Emergency contact information
- Description of the child's condition
- Blood glucose monitoring
- Insulin administration
- Storage of blood glucose kit and insulin injections
- Disposal of sharps
- Physical activity management
- Hypoglycaemia management
- Hyperglycaemia management
- Any additional information relevant to the CYP e.g. exams, school trips, after school clubs

Emergency Supply Box – ‘Hypo Box’

The family should provide the school with a box of emergency supplies. The box must be clearly marked with the CYP's name.

The contents of the box should include:

- **Fast acting glucose**
- Glucose tablets/ sweets (e.g. Jelly Babies, Haribo)
- Small bottle/ small can of full sugar drink (e.g. Lucozade, Coke)
- **A tube of Glucogel®**
- **Long acting carbohydrate**
- Packet of plain biscuits/ cereal bars

All staff must be aware of where the hypo box is kept. The hypo box/ hypo supplies must be taken with the CYP if moving around the school premises. It is the family's responsibility to check the contents of the box and ensure that it is adequately stocked. *Guidelines on how to use the contents of a hypo box are included in the child's IHCP; it is also advisable to keep a copy of the IHCP inside the hypo box.*

Exercise Management

Having diabetes shouldn't stop a CYP from taking part in physical activity. There are many benefits of taking part including:

- Improves fitness and well-being
- Encourages a lifelong healthy lifestyle

- Builds self-esteem, confidence and team work

Exercise of any kind increases the use of energy and therefore CYP with diabetes are likely to see a drop in their blood glucose level. Therefore, the CYP may need additional fast acting carbohydrates before during or after sport (for swimming contact the diabetes team).

CYP should test their blood glucose before and after exercise. This will help to guide the management required to maintain their blood glucose levels within normal limits and keep them safe. Blood glucose levels may vary depending on timing, duration and intensity of exercise.

The information below provides general guidance on what to do for different blood glucose levels.

Please note that is general guidance and you should always refer to the child's individual health care plan.

Blood Glucose level	Action Required
If Blood Glucose below 4mmol/L	Treat hypo and give follow up snack (10-15g of slow released carbohydrate e.g. cereal bar, piece of fruit, plain biscuit)
If Blood Glucose between 4 and 8mmol/L	Give snack as advised in individual health care plan.
If Blood Glucose between 9 and 13mmol/L	Do not give any fast acting carbohydrate before exercise.
If Blood Glucose above 14mmol/L check for ketones	If Ketones present above 0.6mmol/L then avoid exercise and discuss with your diabetes team.

What about Insulin Pumps?

For CYP using an insulin pump they may need to disconnect the device **from the cannula** during activity and reconnect once finished. The pump should be stored in a secure place if disconnected. Other pump users may keep the pump connected and just reduce their insulin dose; it will be documented in the IHCP for the CYP.

What about Hypos?

Always carry hypo treatment and ensure that hands are washed appropriately before blood glucose testing. If you notice that hypos are happening frequently with exercise then please discuss with the family who will liaise with the paediatric diabetes team.

School Trips

CYP with diabetes should have the same opportunities to enjoy school trips as the rest of their class. Going on a day trip should not cause any problems as the routine management of diabetes will be similar to the day-to-day management at school. Residential trips are fun, promote confidence and independence and will therefore enhance self-esteem. Every CYP with diabetes should have an equal opportunity to attend a residential school trip with their peers.

School trips must be discussed in advance (at least 6 week's notice) and a plan developed through discussion with the child, parents, teachers involved in the trip and the PDSN.

Information required will include:

- Duration of the trip
- Journey details
- Timing of activities
- Type of activities
- Timing of meals
- Facilities available

CYP who are reliably independent in their diabetes management will be able to:

- Inject insulin
- Test their blood glucose levels
- Recognise and treat hypos early
- Calculate the carbohydrate value of their meal and give the appropriate dose of insulin
- Understand how exercise will affect their blood glucose levels and take appropriate action to manage activities
- CYP who are not fully independent in their diabetes management may require supervision and help from trained and competent staff members.

Supplies

CYP should have their hypo treatments, starchy snacks and their blood glucose meter with them at all times during the trip. Insulin should be stored in a cool dry place away from sunlight or sources of heat.

Management of Hypoglycaemia



This is an emergency situation and treatment should be given promptly

Hypoglycaemia (hypo) is the most likely problem to be experienced in school. This is when the blood glucose drops below the normal level of 4mmol/L. The lower the blood glucose level the more the brain is deprived of energy.

Hypos happen quickly, but most CYP will have warning signs that will alert them, or people around them to a hypo.

Below is a list of some of the signs and symptoms:

• Excessive sweating	• Trembling/Shaking	• Feeling Weak or Cold
• Confusion	• Slurred Speech	• Personality/Change
• Pins and Needles	• Nausea and Vomiting	• Paleness
• Anxiety	• Headache	• Sleepiness
• Blurred Vision	• Hunger	• Pounding Heart

The symptoms can be very different for each CYP and the child's family will be able to describe what their child's warning signs are on their IHCP.

Common Causes of Hypoglycaemia are:

- A missed or delayed snack or meal
- Not enough food to fuel an activity/exercise
- Too much insulin given
- Cold or Hot Weather
- Stress
- Vomiting and Diarrhoea

Warning: Some children do not have appropriate warning signs of hypoglycaemia and/or do not recognise the onset of a hypo. This is more prominent in children under 5 years of age.

Hypoglycaemia must be treated immediately because if untreated, the child may become unconscious and/or have a seizure; however this is very unusual as the majority of children will identify a hypo with the above symptoms.

Mild Hypo – The CYP is conscious but blood glucose is low.

The treatment of hypoglycaemia is to give the child fast acting glucose to raise the blood glucose; this may be given as any of the following, please see IHCP for amount fast acting glucose to give:

- Lucozade Original
- Dextrose tablets
- Other treatments may be recommended in the IHCP by the CYP's PDSN

Re-test blood glucose after 15 minutes.

If the blood glucose is 4mmol/L or above: to give an additional food in the form of a starchy carbohydrate snack, unless they can access their meal immediately, to prevent the blood glucose dropping again. For example:

- Two plain biscuits
- Cereal bar
- Piece of fruit
- Glass of milk

NB: If the child is on an insulin pump they do not need the extra starchy carbohydrate.

Children should not be left alone during a hypo. They must always be accompanied and supervised.

Moderate Hypo – The child is unable to co-operate but able to swallow and is conscious.

- **Glucogel® should be used as instructed on the CYP's IHCP.**

Some Glucogel® is absorbed through the lining of the mouth but will require swallowing to aid recovery. It may take between 5 – 10 minutes to work

Directions for use:

1. Turn and twist top of the tube to open.
2. Place dispenser tip in the mouth between gum and cheek.
3. Slowly squeeze in one whole tube of Glucogel®, if under 5 years of age, use half a tube initially.
4. Massage the outer cheek to encourage swallowing to disperse the gel.
5. Recheck blood glucose 15 minutes later
 - a. If blood glucose still less than 4mmol/L and not co-operating, repeat GLUCOGEL®
 - b. If blood glucose still less than 4mmol/L and co-operative, repeat fast acting GLUCOSE as outlined in MILD Hypo.
 - c. If blood glucose greater than 4mmol/L give additional starchy carbohydrate containing food as above.

Glucogel® should NEVER be used in CYP who are unconscious and therefore unable to swallow.

Severe Hypo – The child is unconscious and unable to swallow

Treatment is URGENT:

Never try to give any treatment by mouth to someone who is unconscious, follow the procedures below:

- 1. Place child in the recovery position.**
- 2. Ensure the airway is open and that the child is breathing.**
- 3. Stay with the child while someone calls for an ambulance and informs parents.**

Severe hypos with unconsciousness and seizures are treated by an injection of GLUCAGON which will be given by the ambulance crew on arrival.

School staff **are not expected** to give this injection due to maintaining competency for this rarely performed procedure.

General Points

- Once the CYP feels better they should return to class and normal activities following a mild or moderate hypo.
- On recovery from a severe hypo the CYP should be collected by family and taken home.
- Family must be informed of all hypos at the end of a school day and documented as per school health and safety emergency policies and procedures.

Blood glucose measurements are the only way to confirm hypoglycaemia. They are also a valuable tool if the diagnosis is uncertain, e.g. if children try to mimic the symptoms of hypoglycaemia in order to eat sweets or if children are confused about their symptoms. Blood glucose measurements also confirm the return of blood glucose towards normal levels after a hypoglycaemic episode.

Sick Day Rules at School

If the CYP with diabetes is vomiting or unable to eat their meals due to nausea, their family should be informed immediately and the CYP should be sent home accompanied by the family. Whilst waiting for the family to arrive the CYP should not be left alone.

During an illness, such as influenza or tonsillitis, blood glucose levels are likely to rise. Diabetes control can become less stable for a period of time because more insulin is needed to control the blood glucose levels.

To prevent dangerously high blood glucose levels, which if left untreated can lead to a life-threatening condition called ketoacidosis, CYP need careful monitoring and treatment with extra insulin at home.

The signs indicating that ketoacidosis may be developing include:

Rapid, laboured breathing

- Abdominal pain
- Headache
- Sweet acetone (pear drop) smell to the breath
- Nausea and Vomiting
- Severe dehydration

Ketoacidosis can be the mode of presentation in a CYP previously undiagnosed with diabetes and hospitalisation is urgently required.

Emergency Procedures

- As part of general risk management processes all schools and settings should have arrangements in place for dealing with emergency situations.
- All staff should know who is responsible for carrying out emergency procedures.
- The IHCP should include instructions as to how to manage an individual CYP in an emergency and identify who has the responsibility in an emergency.

Blood Glucose Levels – Brain Function and Educational Examinations

Brain Function

The brain relies on glucose for its energy supply. Therefore when the blood glucose level is low during a hypo, thinking, reactions, abstract thoughts, reflexes and other aspects of brain function deteriorate.



Examinations

CYP perform best in examinations when their diabetes is well controlled.

Due to emotional stress and anxiety before and during exams, blood glucose can fluctuate between high and low levels.

When blood glucose levels are high, there is an increased need to urinate. Easy access to toilets needs to be granted.

When blood glucose levels are low, the brain is deprived of glucose for energy causing cognitive and other changes ([see section on hypos](#))

Blood glucose levels should be measured immediately before exams; this is the CYP's responsibility to do so.

CYP with diabetes need to be allowed to bring food and drinks in case of hypos during an examination.

High blood glucose is associated with poor diabetes control, may also affect brain function but the effects are not as clear cut as with low levels.

High blood glucose levels may be accompanied by an inability to concentrate and mood changes (especially irritability), headaches, thirst and frequency of urination.

Some examination boards allow additional time after the end of the exam, if a mild hypo has occurred immediately before or during an exam. If a hypo does occur, a claim for special consideration can be made.

Warning: After an episode of hypoglycaemia, cognitive ability and brain function may not return to normal for several hours. Moderate-severe hypos may cause prolonged severe headaches, which will further affect performance.

Recommendation: Prior to exams a request for special consideration in relation to the occurrences and effect of high and low blood glucose levels whilst sitting an exam should be made in writing to the educational authority/exam board.



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