

DIABETES MANAGEMENT IN SCHOOL

Diabetes is a condition in which the body is unable to regulate the amount of glucose in the blood, due to either a lack of insulin production or reduced insulin effectiveness. There are several forms of diabetes, two of the most common in childhood being Type 1 Diabetes and Type 2 Diabetes. Type 1 Diabetes is always managed by insulin replacement, given via injection or insulin pump therapy. Type 2 diabetes can be managed in a variety of ways, for example with diet control and exercise, oral medications and sometimes insulin injections. The overall aim of any treatment is to maintain blood glucose levels as close to the normal range of 4-7mmol/l as possible.

Diabetes management can affect daily activities such as school attendance, participation in extra-curricular activities, social inclusion and family life, having an impact on the child's mental health, emotional wellbeing and development (DOH 2007).

It has been shown however, that improved management and control of diabetes in children can improve academic performance and school attendance, reduce hospital admissions, and reduce the chances of developing long term complications of diabetes (DCCT 1993).

The Department of Health (2007) therefore recommend that children and young people be offered a range of diabetes management options and support which have the potential to improve control and encourage/enable self management, and hence lessen the impact diabetes has on their lives.

What does this mean for schools?

Schools have a statutory duty to ensure that arrangements are in place to support pupils with medical conditions and should ensure that children can access and enjoy the same opportunities in school as any other child (Department for Education 2014).

This requires:-

- Completion of an Individual Health Care Plan (see below).
- All staff should be aware that the student has diabetes. They should also be aware of their responsibilities towards the student and any training they should access in accordance with the school's policy for supporting pupils with medical conditions.
- Storage of blood glucose monitoring equipment, insulin pen and insulin, and hypoglycaemia treatments in accordance with school policy on the safe storage of medicines in school.
- Maintenance of consumables needed for diabetes management in school via student's parents/guardian.
- Safe storage of used sharps in an approved container and replacement of the container every 3 months via the student's parents/guardian.
- Record of diabetes related activities performed by staff on behalf of the student.
- Relevant training and support for all staff with regard to diabetes management.

Students should be given the option of carrying a blood glucose monitor and fast acting glucose with them to enable the rapid detection and treatment of hypoglycaemia. This will not only encourage and support self-management and reduce time spent out of class in first aid rooms, but also reduce delays in hypoglycaemia treatment which could lead to unconsciousness.

Students may also be given the option of carrying their insulin with them at the discretion of the school. NB. Students using insulin pump therapy will need to be attached to their insulin pump containing insulin throughout the school day.

Additional information:

Absence from school - Children and young people with diabetes are required to attend medical appointments at least every 3 months most of which will be during school hours. They may also require time off school to attend psychology or counselling appointments, dietetic appointments or structured education sessions related to their condition. The student's parent/guardian will inform school whenever such absences are necessary.

Exams – If a student is due to sit an exam, please inform their Diabetes Specialist Nurse, who will provide written information for the examination officer, explaining why extra time may be required to complete the exam.

School trips and activities outside of normal school hours – A risk assessment should be carried out and arrangements put in place to ensure the student can participate fully in all activities. If additional diabetes training is required for staff, this should be requested from the Diabetes Specialist Nurse at least 4 weeks before the activity is due to take place.

Individual Health Care Plan for Diabetes Management in School

This care plan has been agreed by the student's diabetes specialist nurse, parents/guardian, the child/young person and relevant school staff. The plan should be reviewed at least annually by parents/guardian and school staff, with the involvement of the diabetes specialist nurse if there have been major changes in management.

Name of School: _____

Date of Plan: _____

Review Dates: _____

Student's Name: _____

Date of Birth: _____

Address: _____

Who to contact for further information/advice

Mother/Guardian: _____

Telephone: Home _____ Work _____ Mobile _____

Father/Guardian: _____

Telephone: Home _____ Work _____ Mobile _____

Diabetes Nurse Name: _____ Phone number: _____

School/Home Link staff member: _____

NB. The school/home link staff member should have received training by a Paediatric Diabetes Specialist Nurse and been assessed as competent to support the student in the management of their diabetes.

Is an Education, Health and Care Plan in place? Yes/No

Blood Glucose Monitoring

Blood glucose checks should be carried out if the student exhibits symptoms of hyperglycaemia (blood glucose level above 10mmols/l) or hypoglycaemia (blood glucose level below 4 mmols/l) and appropriate action taken (see below).

Blood glucose levels should also be routinely checked at the following times:-

- Before Lunch
- Midmorning Time _____
- Midafternoon Time _____
- At the end of school day Before afterschool clubs
- Before, during (every 30-45 minutes) and after exercise

Target range for blood glucose is _____ mmols/l.

Can student perform own blood glucose checks? Yes/No

If Yes, do they require school staff supervision? Yes/No

Names of staff to perform blood glucose tests/ supervise student carrying out their own blood glucose test. (delete as applicable)

All staff named above should have received training by a Paediatric Diabetes Specialist Nurse and if carrying out blood glucose tests on behalf of the pupil, been assessed as competent to carry out these tests (see attached competency documents).

Meals and snacks required

Mid-morning snack: _____

Lunch: _____

Mid-afternoon snack: _____

After school snack: _____

Insulin Injections

Possible side effects of insulin:-

- Localised pain, inflammation or irritation - apply cold compress and inform parent/guardian.
- Hypoglycaemia (blood glucose less than 4mmol/l) – see later for signs, symptoms and management.

Insulin injection required at lunchtime? Yes / No

If yes, the insulin injection should be given immediately before lunch unless the pre lunch blood glucose result is less than 4 mmols/l, in which case the student should be treated for hypoglycaemia (see below) and should eat lunch before receiving the insulin injection.

NB. Students should not be required to queue for food after receiving their insulin injection as any delay in eating could result in hypoglycaemia.

Can student determine the correct amount of insulin and give their own injections? Yes / No

If Yes, do they require school staff supervision? Yes/No

Names of staff to determine insulin dose and give insulin injection/supervise student calculating insulin dose and self injecting insulin (delete as applicable).

All staff named above should have received training by a Paediatric Diabetes Specialist Nurse and if administering insulin on behalf of the pupil, been assessed as competent to carry out these injections (see attached competency documents).

Name of lunchtime insulin: _____

Usual Lunchtime Dose: _____ units/ _____ grams of carbohydrate **or**
Dose calculated using dose advising blood glucose meter (delete as applicable)

Dose Amendments: _____ **Date of amendment:** _____

Additional insulin to be given **at lunchtime only** to correct high blood glucose levels (above 10mmols/l) using the following adjustment:-

Give 1 extra unit of _____ for every _____ mmols/l that blood glucose is above 10 mmols/l. Give this amount in addition to usual lunchtime insulin dose **or** Dose as calculated by blood glucose meter (delete as applicable)

Parent/Guardian Agreement for the staff members named above to determine insulin dose and give insulin injection/supervise student calculating insulin dose and self injecting insulin (delete as applicable).

Signed _____ **Date** _____

Exercise and Sports

Exercise can lower blood glucose levels and cause hypoglycaemia, therefore always take a blood glucose meter and foods/drinks to treat hypoglycaemia with the student when they exercise. Do not leave this equipment in the changing room or class room.

Check blood glucose levels before, during exercise (every 30–45 minutes), and after exercise and follow the advice below.

Blood glucose:-

- **less than 4 mmol/l** Allow pupil to treat their hypoglycaemia (see below), then eat a carbohydrate snack.
- **4-7 mmol/l** Allow pupil to eat a carbohydrate snack.
- **7.1-14 mmol/l** No snack needed, but stop and check blood glucose levels after 30-45 minutes of exercise. If levels have fallen to less than 7.1 mmol/l, follow the advice above. If levels have risen to more than 14 mmol/l, follow the advice below. Otherwise carry on.

- **more than 14mmol/l** **Check blood for ketones:-**

Ketones less than 0.6mmol/l - it should be OK to take part in exercise, but stop after 30-45 minutes to check blood glucose and ketone levels. If these levels have fallen it should be OK to continue with exercise. However, if these levels have risen, **stop** exercising and contact parents for advice.

Ketones over 0.6mmol/l – **do not** exercise and advise parents of current blood glucose and blood ketone levels.

Hypoglycaemia (blood glucose level below 4mmols/l)

Hypoglycaemia is the full name for a hypo or low blood glucose level. Hypos occur when blood glucose levels fall too low for the body to work normally. For most people this happens when their blood glucose levels fall below 4 mmols/l.

Common causes

Too much insulin
Not enough food
Delayed/missed meal or snack
Exercise or activity
Extremes of hot or cold weather
Stress or excitement

Common signs

Looking pale
Sweating
Shaking
Tiredness
Unusual behaviour
Slurred speech

Common symptoms

Weakness/ Shaking
Hunger
Blurred vision
Pins & needles
Dizziness
Headache
Confusion

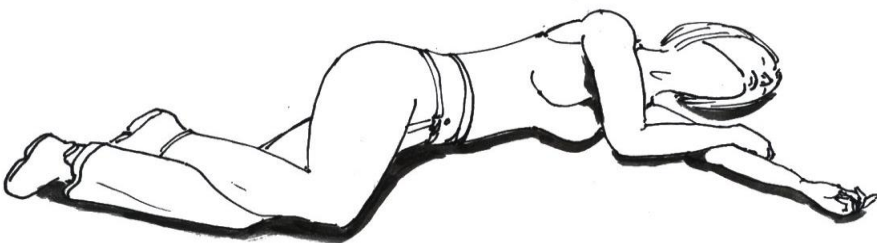
Pupil's usual signs & symptoms of hypoglycaemia: _____

Treatment of hypoglycaemia (requires immediate treatment)

Do not send student out of the room to seek help, call for assistance to come to the student, as walking can further reduce blood glucose levels.

Student should wash their hands and check blood glucose level. If below 4 mmol/l, give 10-20 grams of fast acting carbohydrate to eat or drink such as 3-6 glucose tablets/Fruit Pastilles/Starburst sweets, 1-2 tubes of Glucogel or 100-200 mls fizzy drink or squash (non-diet). Wait 15 minutes then re-check blood glucose levels. If still below 4mmol/l, give more sugary food as above. Repeat this process until blood glucose levels are above 4 mmol/l, then give some starchy food such as 2 plain biscuits, a packet of crisps, cereal bar or next meal if due.

If the student is unconscious, having a seizure (convulsion), or unable to swallow effectively, place in the recovery position and call an ambulance (dial 999), then contact the student's parent or guardian. Do not give anything by mouth!



The recovery position

Hyperglycaemia (blood glucose level above 10mmols/l)

Hyperglycaemia is the medical term for blood glucose levels above 10mmol/l. It is common to detect high blood glucose levels if it is less than 2 hours since carbohydrate was last eaten as the insulin has not had sufficient time to work. However, if it is more than 2 hours since the student last ate, high blood glucose may be due to a lack of insulin which can lead to the breakdown of fat for energy and the production of ketones as a waste product.

Common causes

Wrong carbohydrate calculation
Missed/ delayed insulin injections
Snacking frequently between meals
Illness
Problem with insulin or insulin device
Being less active than usual
Not drinking enough fluids
Stress and anxiety
Periods of growth e.g. puberty

Common signs & symptoms

Thirst
Frequent passing of urine
Tummy pains
Tiredness
Moody
Nausea/vomitting
fast breathing
Headache
Blurred vision

Pupil's usual signs & symptoms of hyperglycaemia: _____

Treatment of hyperglycaemia.

Allow easy access to drinks and toilet facilities. Be aware that concentration levels, energy levels and mood will probably be affected by high blood glucose levels. If unwell in any way, for example headache, nausea, vomiting, lethargy, check blood ketone level and contact parents/guardian for advice/assessment. If blood glucose levels are above 14mmol/l, check blood ketone levels and if these are above 0.6mmol/l, contact parents/guardian for advice as a correction dose of insulin may be required.

N.B. If blood ketones are above 3mmol/l, alert parents immediately as the pupil is likely to need to attend hospital for assessment. If unable to contact parents, contact the Paediatric Diabetes Specialist Nurse (01743 277696) or your local Children's ward (Princess Royal Hospital, Telford 01952 641222 ext 4002) for advice.

Supplies to be provided by parent/guardian and kept at School

- Blood glucose meter, blood glucose and blood ketone test strips
- Lancet device and lancets
- Insulin pen, pen needles, insulin cartridges
- Sharps box (to be replaced by parent/carer every 3 months)
- Fast-acting source of glucose
- Glucogel (to be used if in a confused state and refuses to eat or drink, but can still swallow effectively).
- Carbohydrate containing snacks

Area in school where spare supplies to be kept and where pupil will carry out routine diabetes management _____

Signatures

I give permission for the release of information in this health care plan to all staff members of _____ school to enable them to support my child with the diabetes care tasks outlined above. I also give permission for any school staff member to contact members of the Diabetes Nursing Service, School Nursing Service or other healthcare professionals for advice or information about managing my child's diabetes and for these healthcare professionals to release the necessary advice or information required to maintain my child's health and safety .

Student's Parent/Guardian: _____ Date: _____

This Diabetes Care Plan has been agreed with:

Student's Diabetes Specialist Nurse:

Name: _____ Signed: _____ Date: _____

School staff representative:

Designation _____

Name: _____ Signed: _____ Date: _____

Handling and storage of insulin in school

In accordance with the Control of Substances Hazardous to Health Regulations 2002, (COSHH) insulin, a prescribed medication, must be handled and stored safely. The Head teacher is responsible for ensuring that medicines are stored safely. All emergency medicines such as glucogel should be readily available and not locked away. Insulin should generally be kept in a secure place not accessible to children and young people.

At the discretion of the school, if they are satisfied that the young person will be responsible for the safe handling and administration of their own insulin, they may allow them to keep it with them. This is on the understanding that if the insulin is to be left out of control or sight of the young person, they should hand it in to a member of school staff for safe storage.

This arrangement is agreed between the school, the parents/guardian and the pupil.

_____ School Representative _____ Date
_____ Parent/Guardian _____ Date
_____ Pupil _____ Date

References

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ISPAD Clinical Practice Consensus Guidelines 2009 Compendium – Assessment and management of hypoglycaemia in children and adolescents with diabetes. Paediatric Diabetes, 10 (suppl. 12), 134-145

Health and Safety Executive. Control of Substances Hazardous to Health Regulations 2002 (COSHH) www.hse.gov.uk

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