



Insulin pump: advice for schools

***Information for
school staff***

Dr Gray's Hospital

Your pupil has Type 1 insulin dependent diabetes. This means that the pancreas has stopped making the hormone insulin. Insulin is vital to convert the food we eat into energy for our bodies. We all need energy to walk, run, sleep and grow. Diabetes cannot be cured, but can be treated effectively.

What is an insulin pump?

Most children with diabetes use a special pen device to give themselves insulin injections daily however some children opt to use an insulin pump.

An insulin pump is just a different way of giving insulin. Rather than having to inject several times a day, the pump constantly delivers insulin through a special little tube inserted into the fatty tissue under the skin. Children with an insulin pump tell the pump when they are eating or if their blood glucose levels are high so that the pump gives extra insulin.

Pumps are very safe and easy to use and they will alarm to tell you if something is wrong.

What the school needs to know

- How to treat hypos
- Where extra pump supplies are kept
- When and where to get help
- How to disconnect the pump

Supplies to be kept at the school

- Blood glucose monitor
- Insulin pen device and insulin cartridge
- Hypo treatment
- Blood ketone monitor and/or strips to test for ketones in the urine (such as Ketostix[®])
- Spare reservoir and infusion set
- Spare batteries
- Contact details for family and diabetes team
- Spare snacks

These need to be somewhere safe and accessible.

Will they need to test their blood glucose at school?

Your pupil will need to check the amount of glucose in their blood at school every time they eat and if they are feeling unwell. This is a simple procedure involving the child washing their hands, pricking a finger and placing the blood on to a monitoring device. Your pupil will carry a monitoring device at school.

Most children can carry out this procedure by themselves. In some cases, the child may need help with this and the diabetes nurses can be contacted to discuss arrangements. The ideal range for the blood glucose reading is between **4 and 10 mmol/l** (millimols per litre).

What is hyperglycaemia?

Hyperglycaemia is when there is too much glucose in the blood, **usually over 14mmol/l**. This can happen when the child eats too much sugary food; if they do not have enough insulin; if they are unwell or if the pump blocks or disconnects. If the child's blood glucose level is above 14mmol/l they should check for ketones. Ketones occur when there is not enough insulin in the body and the child can become very unwell, quite quickly. Check to make sure the pump tubing has not disconnected from the plaster – if so, call the parents for advice or if child can insert a new set, encourage them to do so.

Ketones can be checked in the same way as the blood glucose using the Optium Xceed[®] blood monitor using β -Ketone[®] test strips.

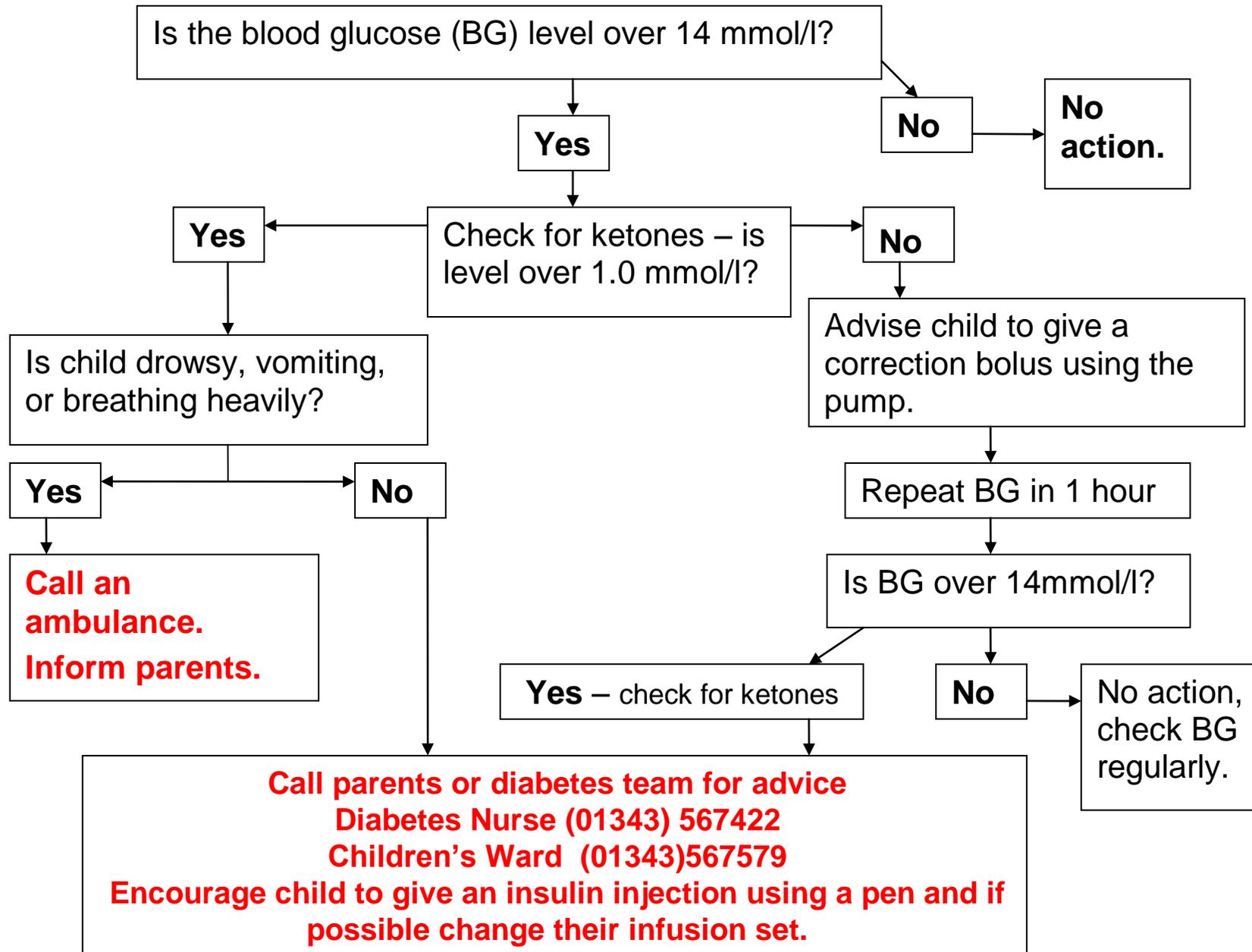
If the result is:

- 0.0 – 1.0mmol/l this is fine.
- 1.1 – 3.0mmol/l this is a little bit high. Encourage child to give insulin injection using a pen and change their infusion set. Parents may need to be called to come and collect.
- Over 3.0mmol/l this is very high. Parents need to be called. If not available call the Diabetes Nurses or Medical Ward.

If the child complains of stomach pain, becomes drowsy or vomits please call the parents or the hospital.

If in doubt follow the flow chart on the next page.

How to manage hyperglycaemia



What is hypoglycaemia?

At times your pupil may show signs that indicate that they do not have enough glucose in their blood. This is known as hypoglycaemia (also called a “hypo”) and means they have a blood glucose level of **less than 4 mmol/l**. This can happen: after exercise, if too much insulin has been given or if they do not eat enough carbohydrate after a bolus of insulin. Every child with diabetes will have hypos. One or two a week is considered normal; any more and the parents/guardians should be informed.

Children having a hypo may feel or look different from normal. However this may not always be the case. Symptoms may include:

- being hungry
- looking pale/sweaty
- feeling wobbly/shaky
- having a headache or tummy ache
- having difficulty concentrating
- being tearful/weepy, being grumpy
- being confused/aggressive.

The child may check their blood glucose level if they have any of these symptoms. If there is any doubt treat them as if they are having a hypo.

They should never be left alone or sent to the medical room on their own. They may become disorientated or unconscious if their blood glucose level continues to drop.

If the child is primary school age, the parents/guardians will provide a box containing everything you would need to treat a mild to moderate hypo. Academy age children should carry their own supply of dextrose.

Please see page 8 for how to treat a mild hypo. This is a blood glucose level of **less than 4 mmol/l**. If your pupil continues to be unwell please contact the parents/guardians or if appropriate the diabetes team.

Never give any food or drink to an unconscious child.

Always:

- carry dextrose with you if leaving the class.
- ensure all staff are aware of child's diabetes and that they have a pump.
- ensure you inform the parents/guardians if the child has been hypo.

**Mild hypo
(co-operative)**

Give a fast-acting sugary carbohydrate (15g) such as 4 to 6 glucose tablets or 100mls of original Lucozade® or 150mls of sugary drink (not diet) or fruit juice.

∞ Check blood glucose level again after 15 minutes. If the level is still under 4 mmol give sugary carbohydrate as above. If there is no improvement after 3 sugary drinks treat the child as moderate hypo.

Once blood glucose level is above 4 mmol/l, no further treatment required. Check the blood glucose level an hour or so later to ensure it has not dropped low again.

**Moderate hypo
(unco-operative)**

Rub GlucoGel® into the insides of the child's cheeks, a little at a time. This can take 5 to 10 minutes to work. This can be repeated if necessary.

If the gel is given twice or the child's condition becomes worse consider giving them a glucagon injection.

Call the Diabetes Nurse or the Children's Ward for advice. The contact numbers are on page 11. Call parents/guardians

**Severe hypo
(unconscious / seizure)**

Seek immediate medical advice – call 999. Advise child is hypo and glucagon injection may be required.

Inform parents.

Never give any food, drinks or GlucoGel® to an unconscious child.

Do not switch the pump off.

Hypoglycaemia

Usual symptoms:

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Alternative treatment:

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Meal/snack times:

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Blood glucose monitoring

Target range:

Times of tests:

Extra tests:

Type of insulin pump:

Contact telephone numbers

Pupil:

Parent/guardian 1:

 Home:

 Mobile:

Parent/guardian 2:

 Home:

 Mobile:

If the parents/guardians are not available and you need further advice, please contact:

**Alison Wilson
Paediatric Diabetes Specialist Nurse
Dr Gray's Hospital**

 (01343) 567422 

**Children's Ward
Dr Gray's Hospital**

 (01343) 567579 

For further reference

Hanas R (2004). *Type 1 diabetes in children, adolescents and young adults*. Class Publishing, London.

Scottish Executive (2001). *The administration of medicines in school*. Scottish Executive, Edinburgh.

This leaflet is also available in large print.

Other formats and languages can be supplied on request. Please call the Paediatric Diabetes Specialist Nurse on (01343) 567422 for a copy.

Feedback from the public helped us to develop this leaflet. If you have any comments on how we can improve it, please call (01224) 554149 to let us know.