



# WHAT ABOUT DIABETES AT SCHOOL?

A guide for teachers

[www.withyoualltheway.info](http://www.withyoualltheway.info)

changing diabetes®

At Novo Nordisk, we are changing diabetes. In our approach to developing treatments, in our commitment to operate profitably and ethically and in our search for a cure.



**With you all the way** is a paediatric support programme created by Novo Nordisk, providing practical information on diabetes and its management for you and your child.

This material has been reviewed by a panel of experts:

- Lead Diabetes Specialist Nurse – Nicola Lewis, UK
- Paediatric Endocrinologists – Prof Thomas Danne, Germany and Dr Nandu Thalange, UK



This information is not designed to replace the advice of a healthcare professional. Please consult your healthcare professional if you have any questions or concerns about your child's condition.

A woman with short brown hair and glasses, wearing a red sweater, is sitting at a table. She is looking towards a young boy on the right who is also wearing glasses and a red sweater. The boy is holding a pencil and looking at a piece of paper. Another child is partially visible on the left, also wearing a red sweater. The background shows a kitchen area with a coffee machine and some decorations on the wall.

## Guidance for teachers

Diabetes care at school is necessary for the child's immediate safety, long-term health and academic performance.<sup>1</sup>

For parents of children with type 1 diabetes, help and support from school is very important. They may feel anxious about handing over responsibility of care for their child, especially after a recent diagnosis.<sup>2</sup>

This booklet will provide you with background information about type 1 diabetes. This will help to prepare you and make you feel more comfortable about having a child with type 1 diabetes at your school. The child's parents or carers will also work closely with the school, building a diabetes management plan to meet their child's needs.<sup>2,3</sup>

# Insulin and diabetes

Insulin is a hormone made by beta cells in the pancreas.<sup>4</sup> Insulin is needed by the body to help remove glucose from the bloodstream and turn it into fuel for other cells that need it.<sup>4</sup> Diabetes is characterised by a partial or complete lack of insulin production by the body.<sup>5</sup>

Insulin plays a role in the two types of diabetes:

**Type 1 diabetes** is an 'autoimmune disorder' – the body's immune system damages its own pancreatic beta cells.<sup>5</sup> They produce little or no insulin and cause high blood glucose, also known as hyperglycaemia.<sup>4</sup> As the body cannot make its own insulin, everyone with type 1 diabetes will need to inject insulin every day.<sup>2,4</sup>

**Type 2 diabetes** occurs when the pancreas is not capable of making enough insulin and the insulin works less well ("insulin resistance"), causing hyperglycaemia.<sup>4</sup>

Diabetes diagnosed in childhood is much more commonly type 1.<sup>2</sup>



# Insulin, blood glucose tests and supplies

## What are their insulin needs?

In order to replace the body's insulin, children with type 1 diabetes need insulin injections every day, according to their blood glucose level.<sup>2</sup> Depending on the age and maturity of the child, they may be completely in control of their insulin and blood glucose testing.

At least one member of staff should be made aware of the particular insulin types and devices that the child uses.<sup>2,6</sup> They will also be informed by the parents of any dose changes and which injection sites should be used.<sup>2</sup>

The child's parent should provide a written diabetes management plan to refer to.

## Testing blood glucose

In order to test blood glucose, the child will need to prick their finger using a small needle device and place a small drop of blood onto a testing strip. The strip, once inserted into the glucose meter, will read the blood glucose level.<sup>2</sup> It is advised that blood glucose levels are checked before every meal, before physical activity and if they feel/seem unwell.<sup>2,4,7</sup> The child may have to test in the classroom if they are worried about their blood sugar being too high or low.<sup>8</sup>

## Easy access to all supplies

The child should have a supply of everything they need. These should be kept with the child at all times, in their schoolbag or in the classroom:<sup>2</sup>

- Hypoglycaemia remedies (glucose sweets/sugary drink/prescribed equivalent) plus a follow-on snack if necessary
- Water, or another non-sugary drink in case of hyperglycaemia<sup>8</sup>
- Insulin and insulin pen device, plus spares in case of breakage (in hot climates insulin not in current use will need to be stored in a fridge)
- Blood glucose meter and strips, plus spares in case of breakage/malfunction
- If the child is on an insulin pump, they should have spare pump equipment in case the tubing becomes blocked, or have access to an insulin pen if needed
- Ketone strips if they become ill (for testing blood or urine)

# Hypoglycaemia and hyperglycaemia – What should you look out for?

As the body does not produce insulin and cannot control fluctuations in blood sugar, daily insulin injections are required in people with type 1 diabetes. Sometimes, if the blood glucose level does not match the amount of insulin injected (due to insulin dose, food intake or physical activity) a child with type 1 diabetes may experience hypoglycaemia or hyperglycaemia.

## What is hypoglycaemia?

Hypoglycaemia occurs when the blood sugar level is too low – due to too much insulin, too little food or high levels of activity. These are the most common signs, but they can depend on the child:<sup>2,9</sup>

- Hunger
- Nervousness
- Shakiness
- Sweating
- Lip tingling
- Dizziness or light-headedness
- Sleepiness
- Confusion
- Grumpiness
- Other \_\_\_\_\_

You should be aware of the child's diabetes management plan which will state exactly how to manage episodes of hypoglycaemia. This may include glucose tablets, fruit juice, a particular snack or a regular (non-diet) fizzy drink.<sup>2</sup> They should also carry a clearly labelled 'Hypobox' with them too, which contains information and supplies to help manage hypoglycaemia.

## What is hyperglycaemia?

Hyperglycaemia occurs when the blood sugar level is too high – due to illness, too little insulin or too much food. Signs of this are:<sup>2,10</sup>

- Lethargy or fatigue
- Sleepy or drowsy
- Extreme thirst
- Frequent urination
- Blurred vision
- Other \_\_\_\_\_

In this case, contact the child's parents for advice as the child may need more insulin and sugar free drinks such as water.

If left untreated, hyperglycaemia in diabetes can be dangerous and could lead to a severe condition called diabetic ketoacidosis (DKA). This can be assessed by measuring ketones in the urine or blood. Signs of DKA include:<sup>2,4</sup>

- Nausea and vomiting
- Stomach pain
- Fruity breath odour ("ketones") – often described as similar to nail polish remover or pear drops
- Rapid breathing
- Dehydration (e.g. dry tongue, less frequent urination/dry nappy)
- Increased blood glucose levels

This may happen quickly, particularly in young children. If the child has any of these symptoms, you must seek emergency medical attention immediately.

Often, if the child is aware, they may be able to tell you if they are hypoglycaemic or hyperglycaemic and know what action they need to take.

# Food and physical activity

## Food intake is important

This needs to be balanced with insulin doses in order to avoid low blood glucose or hypoglycaemia. Carbohydrates in food increase blood glucose levels, whereas insulin and exercise lower it. Children with diabetes are advised, as any other child, to have a healthy, well balanced diet. Generally, it is recommended that they eat three main meals each day, in addition to snacks in between, if necessary. Parents will notify you if they require any special diet.<sup>2</sup>

Having diabetes doesn't mean the child can't eat any sweets as treats.<sup>2,4</sup> They can have such foods in moderation, along with appropriate insulin if they respond well to their general balance of food and insulin intake.<sup>2,4</sup>

The child may need to eat snacks in the classroom, if they need a snack at a particular time, or are experiencing hypoglycaemia.<sup>2</sup>

## Physical activity and blood glucose testing

Regular exercise is recommended for all children with or without diabetes<sup>10,11</sup> but physical activity lowers blood glucose. The combination of too much insulin and exercise can lead to low blood glucose or episodes of hypoglycaemia.<sup>2,10,11</sup>

The child should test their blood glucose levels before and after physical activity and have a snack beforehand, if necessary.<sup>2,10,11</sup> If the activity is prolonged, they may need to test and/or snack during the activity as well. Glucose tablets or a sugary drink should be kept nearby if the child experiences a hypoglycaemic event.<sup>2</sup>

It is important that anyone supervising the child during physical activity is aware they have diabetes and know what to expect.<sup>2</sup>



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**ERIC HOWELL**  
USA  
Eric has type 1 diabetes



**ALEKSEY EVSTRATOV**  
Russia  
Aleksy has type 1 diabetes

## What about bullying

There is no situation where bullying should be tolerated. Children with diabetes tend to stand out, as they are allowed to eat and drink in the classroom, and may need to inject insulin and test their blood glucose in front of others. This could unfortunately make them a target for bullying or unwanted attention.<sup>2</sup>

As a teacher, you have the responsibility to watch out for any signs of bullying and notify the school if the child or their parents report this to you. As with any child, the school should take measures to ensure that bullying is prevented and should deal with it appropriately if it does occur.<sup>2</sup>

# Important contact details

Looking after child with diabetes is a big responsibility but in most cases it is well controlled and you will have all the necessary information you need. If at any point you are worried, concerned or have any questions, here are some important contacts:

Child's parents or carer	Child's doctor/nurse	Other



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## About Novo Nordisk

This information was developed by Novo Nordisk, a global healthcare company specialising in the care of people with diabetes.

Novo Nordisk was started up almost 90 years ago by a Danish couple with a passion for changing diabetes. August Krogh was a professor at the University of Copenhagen and Nobel Prize winner and his wife Marie, a doctor and researcher into metabolic diseases, suffered from type 2 diabetes. They learned of insulin being developed in Canada and were determined to ensure access to insulin for everyone with diabetes, hence in 1923 Novo Nordisk was born.

Since then Novo Nordisk has grown to become a world leader in the provision of diabetes products and support for patients of all ages.<sup>12</sup>

We fully understand the challenges that children with diabetes face and are working together with parents, schools and healthcare professionals to improve the care of children with diabetes, as they grow up and develop.

For more information about Novo Nordisk, please visit: [www.novonordisk.com](http://www.novonordisk.com)



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