



HOW TO LOOK AFTER A CHILD WITH TYPE 1 DIABETES

Support for
caregivers

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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.



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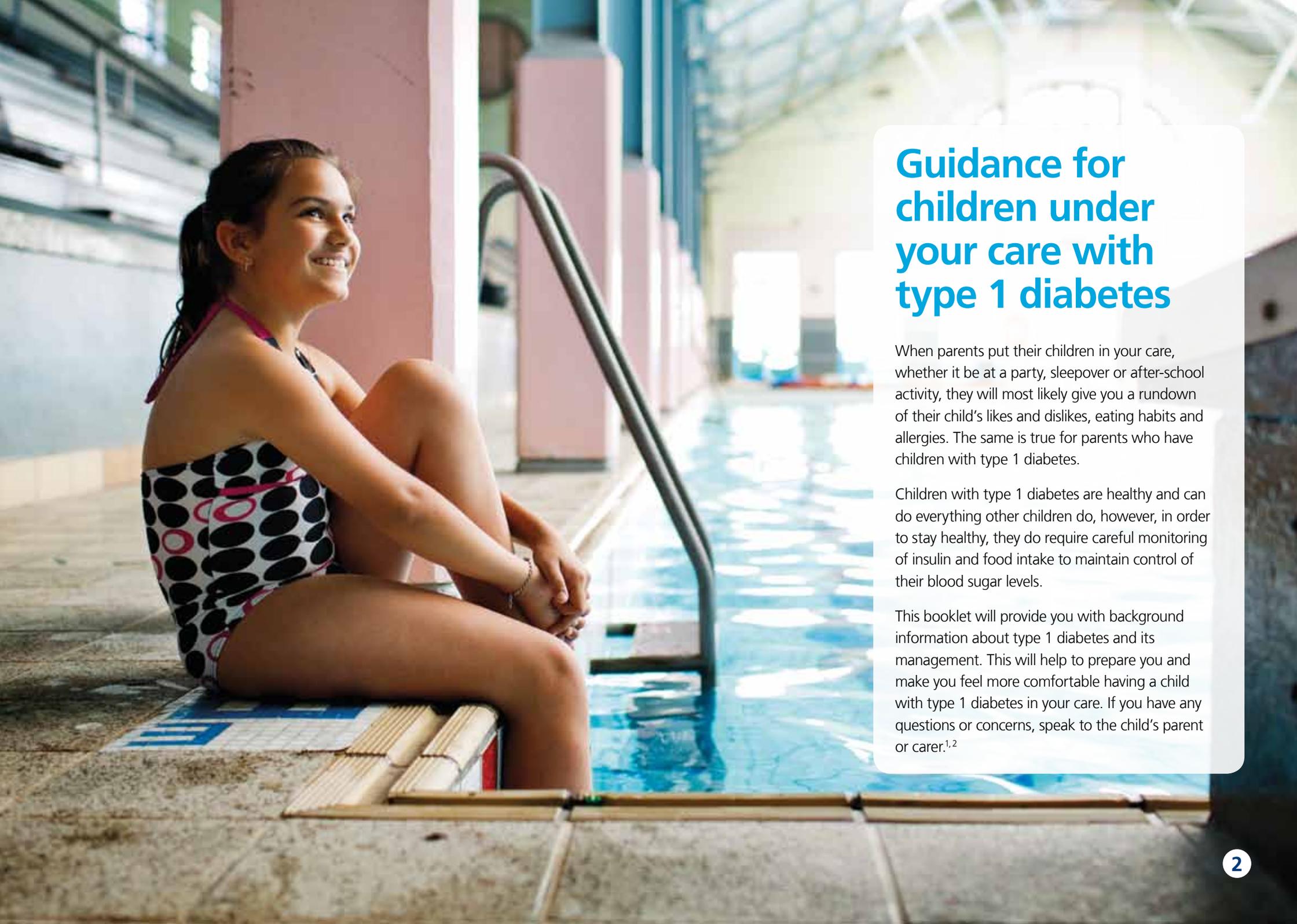
With you all the way is a paediatric support programme created by Novo Nordisk, providing practical information on diabetes and its management for you and your child.

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.



Guidance for children under your care with type 1 diabetes

When parents put their children in your care, whether it be at a party, sleepover or after-school activity, they will most likely give you a rundown of their child's likes and dislikes, eating habits and allergies. The same is true for parents who have children with type 1 diabetes.

Children with type 1 diabetes are healthy and can do everything other children do, however, in order to stay healthy, they do require careful monitoring of insulin and food intake to maintain control of their blood sugar levels.

This booklet will provide you with background information about type 1 diabetes and its management. This will help to prepare you and make you feel more comfortable having a child with type 1 diabetes in your care. If you have any questions or concerns, speak to the child's parent or carer.^{1,2}

Insulin and diabetes

Insulin is a hormone made by beta cells in the pancreas.³ Insulin is needed by the body to help remove glucose from the bloodstream and turn it into fuel for tissues that need it, such as muscle and brain.³ Diabetes is characterised by a partial or complete lack of insulin production by the body.⁴

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.⁴ As a result they produce little or no insulin and cause high blood glucose, also known as hyperglycaemia.³ As the body cannot make its own insulin, people with type 1 diabetes will need to inject insulin every day.^{1,3}

Type 2 diabetes occurs when the pancreas is capable of making some insulin, but not enough or not sufficient quality for the body to use properly ("insulin resistance").³

Diabetes diagnosed in childhood is much more commonly type 1.¹

There are other kinds of diabetes but these are rare in childhood.



Hypoglycaemia and hyperglycaemia: What should you look out for?

Hypoglycaemia occurs when the blood sugar level is too low – due to too much insulin, too little food or high levels of activity. The most common signs are listed below, but these can depend on the child:^{1,5}

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

If you are looking after the child overnight, it is useful to know that hypoglycaemia can also occur at night, with signs of sweating, waking up groggy or disturbed sleep.^{1,6}

The child should have a 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.¹ They should also have a clearly labelled 'Hypobox' with them too, which contains information and supplies to help manage hypoglycaemia.

Hyperglycaemia occurs when the blood sugar level is too high – due to illness, too little insulin or too much food. Signs of this are:^{1,6}

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

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

If left untreated, hyperglycaemia in type 1 diabetes can be dangerous and could lead to a severe condition called diabetic ketoacidosis (DKA).

Signs of DKA include:^{1,3}

- Nausea and vomiting
- Stomach pain
- Fruity breath odour – 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 can happen rapidly, 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 (low blood glucose) or hyperglycaemic (high blood glucose) and know what action they need to take. If you are at all worried, speak to the child's parents or carer or contact a healthcare professional immediately.

What about meal planning and physical activity?

In order to replace the body's insulin, children with type 1 diabetes need insulin injections every day.¹

Food intake is also important as it needs to be balanced with insulin doses in order to avoid high or low blood glucose (hyper- or hypoglycaemia). Children with type 1 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.⁷

If the child is eating with you, it is worth having a discussion with their parents or carer about the meal you have planned so that they can adjust the insulin dose accordingly or advise you about particular foods. It may be a good idea to have some sweets or fruit juice at hand, in case the child experiences a hypoglycaemic event and does not have hypoglycaemia treatment with them.¹

Having type 1 diabetes doesn't mean the child can't eat any sweets as treats.^{1,3} They will be able to in moderation, along with appropriate insulin if they respond to their general balance of food and insulin intake.^{1,3}

Regular exercise is recommended for all children, with or without type 1 diabetes.^{8,9} Physical activity lowers blood glucose, so the combination of too much insulin and exercise can lead to low blood glucose or episodes of hypoglycaemia. This can be prevented by lowering insulin doses or increasing blood sugar, by having some fruit juice or a carbohydrate snack prior to exercise.^{1,8,9}

As with meal planning, discuss any planned physical activity with the parents or carers (for example playing football or going to an adventure playground) so they can ensure their child has the correct insulin dose.



Insulin injections and blood glucose testing

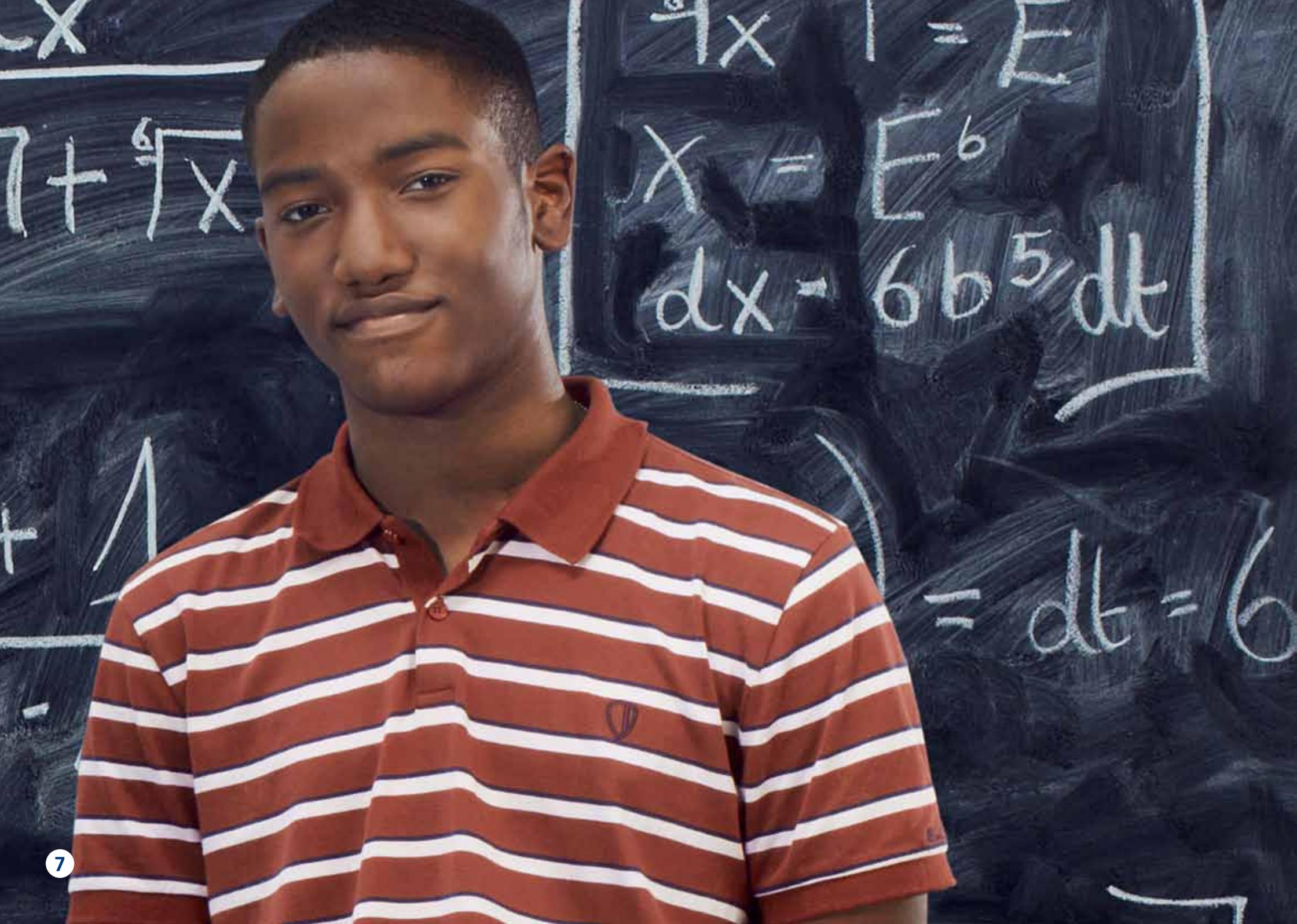
Depending on the age and maturity of the child, they may be completely in control of their insulin and blood glucose testing. You may want to just observe the child, check in with them from time to time or remind them of the times they need to inject their next insulin dose.

If you are required to inject insulin or test the child's blood, make sure you are comfortable with this and have been given all the necessary information in order to do so. Speak to the child's parents or carer if you are at all concerned.

When injecting insulin, you need to be aware that there are a number of different kinds of insulins and injection devices.^{1,10} The child's parents or carer will inform you about the type of insulin, number of units required and where and when it should be injected.

Insulin is injected under the skin (subcutaneously) in three main areas – stomach, buttocks and thighs. It can also be injected into the arm.

It is advised that blood glucose levels are checked before every meal and bedtime and often before physical activity.^{1,3,11} If there is significant hyperglycaemia before exercise, ketones in the blood or urine should be tested. If ketone levels are elevated, exercise should not be carried out, due to risk of DKA. The child's parents or carer will explain exactly what you need to do, the readings to expect and whether any action needs to be taken.



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 is a list of 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.¹²

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



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