Taking Diabetes to School

Introduction

Prisha is a year six student at Ormiston Primary School. Two years ago, Prisha was diagnosed with diabetes. We talk with Prisha, her family, her teacher and her healthcare team about what it's like, having a child with diabetes at school.

Rita Sigley, Diabetes Nurse Specialist, Starship:

Having a young person with diabetes in your school may be new to you and leave you feeling anxious or worried about how you are going to cope in a busy school environment. However having a good fundamental knowledge of the condition and what it entails can really help alleviate some of those concerns. We hope that this video is going to offer you the resources and tools that you need to be able to safely support a young person with diabetes in your school.

What is Diabetes?

Dr Philippa Carter, Consultant, Starship:

So diabetes is a disease where you are not able to control your blood glucose levels. Glucose comes from the food that we eat and after you've eaten, the energy from the food is absorbed through the gut and into the blood stream and from then, to get into your cells where it can be used, you require a hormone called insulin. Insulin is made by the pancreas and it acts like a key so it unlocks the cells so that glucose can get out of the bloodstream and into the cells where it can be used.

In diabetes, you're not able to unlock that key and therefore you end up with very high levels of glucose in the bloodstream and the cells that need the glucose can't get the energy that they need. The main symptoms of diabetes are: becoming very thirsty and drinking lots; and needing to pass a lot of urine, so going to the toilet frequently and particularly overnight, quite frequently. In time that can also lead on to weight loss, and people often describe that there have been lots of mood changes in the time leading up to the diagnosis as well.

Most children with diabetes have what's called Type 1 diabetes and this is where the pancreas is not able to make enough insulin and this is not at all related to lifestyle, and is not preventable in any way.

Prisha has Type 1 diabetes, where the body's immune system, which normally helps us to fight infection, starts attacking the beta cells in the pancreas and destroys them. The reason why this happens is not fully understood but Type 1 diabetes is not caused by eating too much, or poor choices of food.

Prisha's family:

Which many people even today don't know about Type 1 diabetes. Very common diabetes is Type 2 and this is something people should be more, should know about diabetes, Type 1 especially as well.

Some of the kids even commented 'oh you were eating too much sweets'

Maybe it would help, like in Prisha's case, if they know too what is the difference between Type 1 and Type 2. Because it's very hard, even the adults don't know so how can the kids know, especially we don't want her, kids saying 'oh you are eating too much sweets', that's why. Maybe that will help Prisha's case because she's with the class all the time, and if they know about the diabetes then those kind of comments wouldn't be made. They've got to understand those things too I think, something educational for the kids. Personally I think its something they can go home and share amongst their parents or their friends as well, outside the school as well, what it's all about.

Lisa, Prisha's teacher, Ormiston Primary School:

My experience is that someone with diabetes can do anything that they want to do. It doesn't hold them back. We just have to be a little bit more vigilant about how we interact with Prisha, just to check up with her regularly and make sure that she's feeling good about herself and letting her control and manage her diabetes and feel like she has ownership and that. And I think that that's the key. This is a lifelong thing and we need to give her the skills so that she can do anything that she wants to do but be prepared. That's the key – be prepared.

Understanding initial feelings and concerns

Dr Philippa Carter, Consultant, Starship:

I think it's very important for a child with diabetes that we try to manage their diabetes but also enable them to have as normal a life and a time at school as they are possibly able to do. So it's very much about a balance between trying to do all of the requirements that diabetes creates but also trying to manage , to allow that child to have as normal as possible an experience at school.

So that does take a lot of communication between the school and the family and often the diabetes team as well, and we're happy to be contacted by schools if they have particular concerns.

Prisha's family:

We were more worried about, especially she wants to play sports, she's into activities, and if she goes low or something happens, whose going to, so how are we going to educate the school teachers. That was a bit hard. The teachers themselves were new, and we needed some information to provide them, to the school, to educate them – what they should be doing in an emergency, what if this happens, they need to do that. And that was a bit hard too, how we can trust that my kid will be looked after well at school because she's a kid and we can't give all the responsibilities for her to look after, we need adult support, someone to take care of her at school when we are not there. And so when school opened we did go to school and had a talk to the teachers and they were actually very supportive which made us feel really great, actually.

Lisa, Prisha's teacher, Ormiston Primary School:

I suppose initially it was about the idea behind did I have enough knowledge to support Prisha in her diabetes. Was I able to do the right thing by her, making sure that she was getting her blood glucose checked and also managing the other students around her, so that there was an understanding of what her needs were, and so that I wasn't the only one involved in looking after Prisha.

Blood glucose monitoring

Rita Sigley, Diabetes Nurse Specialist, Starship:

Students with diabetes are encouraged to monitor their blood glucose levels at various points throughout the day. Most children will need to check their blood glucose levels before lunch, or if they are feeling high or low. Some younger children or children on a pump might need to do an extra additional test before their morning tea also. Monitoring of blood glucose levels is a relatively simple task and it only takes a few minutes but it is an essential part of diabetes management so that children with diabetes should always be allowed to access their equipment and do this testing as required.

What is hypoglycaemia? Also called a 'hypo' or 'low'

Rita Sigley, Diabetes Nurse Specialist, Starship:

The normal blood glucose level in the blood is between 4 and 7 mmols. The blood glucose level can drop below this which is called a hypo or hypoglycaemia. Hypoglycaemia can be caused by not eating enough food at mealtimes to balance the insulin that was given that morning, or doing exercise without taking extra snacks to compensate.

Dr Philippa Carter, Consultant, Starship:

When your blood glucose levels fall below 4, it affects all of your body's function but particularly your brain and your ability to think. So people often present as being, can present as being quite confused, they often look shaky and a little bit pale and can sometimes become quite sweaty.

Different children have different abilities to recognise themselves when their blood glucose level is low. Some children are very good at it and can tell you that they're feeling low straight away. Other children won't be very good at recognising when their blood glucose levels are low and so they might need help from a teacher or another adult who is able to be alert to what those potential signs and symptoms might be, and to encourage that child to do their blood glucose test if they were suspicious.

Rita Sigley, Diabetes Nurse Specialist, Starship:

A hypo should always be treated immediately and children or young people who are suspected of having a hypo need to be supervised until it's successfully treated. Students should always have access to their hypo equipment, and supplies while they're at school also.

Treating a 'hypo' or low blood glucose level

Dr Philippa Carter, Consultant, Starship:

To treat a hypo, the first important step is to confirm using the blood glucose testing kit that the blood glucose level is in fact low, so below 4, and then the idea behind treating a hypo is to get the blood glucose level up as quickly as possible. So to do that you need some fast acting glucose. For most children, we recommend that that consists of a small box of juice, which gives them the right amount of glucose and is absorbed and can get into their system relatively quickly.

It's really important to give that a chance to work so we ask them to wait 10 minutes after that first juice and then to do their glucose test again and if the glucose test at that time is over 4, then we get them to eat something that's a more long acting sustained carbohydrate such as some crackers or a muesli bar and the idea with that is that its going to keep their glucose levels up in the normal range for a longer period of time.

Lisa, Prisha's teacher, Ormiston Primary School:

Usually she'd indicate to us – she'd either come and see me directly or if she was with a group she would put her hand up. Then she would go down with a buddy down to our reception where she would go and she's got a special kit that contains fruit juice and some muesli bars, and she would test her blood sugars, then she would take some, probably just her juice first, and then her muesli bar. It tends to be about a 15-20 minute waiting time so there's always someone with her during that time just to check that she is feeling okay, that she can speak confidently about what the process is and that we feel comfortable leaving her to go and play with her friends.

‘So first we wash our hands’

Prisha is in her last year at Ormiston Primary School and has had diabetes for nearly two years. Blood glucose testing is routine for Prisha, as this is an essential part of her daily diabetes management.

‘then you take your strip and then you place it in the machine. When it starts doing that, you start pricking your finger. You pull that’

Even though Prisha is confident at testing her own blood glucose levels, she still needs supervision and support, around interpreting the levels and making sure her diabetes is managed correctly, should they be too high or too low.

‘Prisha, you’re a little low. How about we give you your drink.’

Today Prisha’s blood glucose levels have tested a little low.

‘Come and sit down’

According to Prisha’s diabetes action and management plan, she needs to have a juice, wait 10 minutes, retest her blood glucose levels and check to see if they have come up into an acceptable range.

‘7. How about we have something to eat before going back to the learning habitat.’

Now Prisha can have a snack, either crackers or a muesli bar, before returning to her classroom.

At Ormiston Primary School there is a laminated sheet kept in the sick bay where Prisha and the staff can record her blood glucose levels and monitor and track them throughout the day.

Severe hypoglycaemia

Rita Sigley, Diabetes Nurse Specialist, Starship:

The symptoms of a hypo can get worse if its not treated quickly and eventually it could lead to a child becoming unconscious or having a fit or a seizure. This is known or called a severe hypo. Severe hypoglycaemia doesn't generally occur frequently in children, its very rare, but in the event that that should occur, then an adult should always stay with the young person, you need to place the child in the recovery position (which is on their side),don't put anything in their mouth as that could pose as a choking risk. Call for an ambulance and school nurse if there's one available. You can check the blood glucose level if you are able to and have access to the equipment and call the family when it's safe to do so. The family or the school nurse can administer the intramuscular glucagon injection from the child's emergency pack and that will release stored glucose from the liver into the system and therefore help the child recover quickly.

Hyperglycaemia or high blood glucose levels

Rita Sigley, Diabetes Nurse Specialist, Starship:

While blood glucose levels can often drop low the opposite can also happen, where the blood glucose levels go too high, greater than 15mmols. This is called a high blood glucose level or hyperglycaemia. Hyperglycaemia can be caused if there is too little insulin or extra food or stress, excitement or the onset of illness. A student who has got a high blood glucose level may find it difficult to concentrate, they may feel tired or anxious. They may feel very thirsty and need to go to the toilet more frequently. Children who have high blood glucose levels should be encouraged to drink plenty of water, have free access to the toilet . They will need to check their blood glucose levels more frequently, in line with their diabetes management plan.

Dr Philippa Carter, Consultant, Starship:

How aggressively you need to treat hyperglycaemia very much depends on the context for that child on that day. So in many cases if the glucose level is just a little bit high, we wouldn’t necessarily want anything specific to be done during the school day but perhaps we might ask parents to give the child extra insulin perhaps when they come home.

There are certain situations where we would like children to be given extra insulin, and that would need to be done in conjunction with the parents so on the action plans, what we usually advise is that schools get in touch with parents if they have pupils at their school who are having high glucose levels and they can advise and come and give extra insulin if that’s required in that situation.

I think its very important in the case of hyperglycaemia to try and get a feel whether the child is otherwise well and just has a high glucose, or whether they seem as though they are really not very well because in that situation then there might need to be more aggressive steps taken to try and work out what’s going on and whether the child needs any intervention more quickly.

Diabetes, sport and exercise

Caroline Worth, Dietitian, Starship:

When kids do PE at school, or they’re involved in some extra activity, they may require some additional food to help fuel this activity and also to keep their blood sugars stable. The most important thing about doing this is to make sure that we know where their blood sugars are, at that time, before they start the activity.

So some extra blood sugar monitoring is important. Its also important that the child, if they have a lower blood sugar level, takes an additional carbohydrate snack, to help cover that extra activity.

Lisa, Prisha's teacher, Ormiston Primary School:

Just before any sports, any sports club, any kind of event, Prisha will always go down and measure her blood sugar levels and also she will have an extra snack before going out and doing sport of any type. It doesn't stop her from participating, she participates completely and she's very confident.

Prisha's family:

Yeah a bit of planning and now she's able to do everything. Actually we were very reluctant ourself although she wanted to do everything we were, because we were not confident in this kind of situation – we never had any experience in this. A bit of experience now on how to manage diabetes we know now what to really do and she's able to, she represented her school in the netball and other activities as well. So she's now, there is nothing that is holding her back. She can do anything

School camps and day trips

Rita Sigley, Diabetes Nurse Specialist, Starship:

A separate more detailed plan will need to be organised for longer activities such as day trips, sports days or camps. It's important that all the supplies needed are available such as hypo kit, the meter, that there's plenty of water and carbohydrate snacks available and it's also important to identify a key person who will take responsibility for supporting and monitoring the student when they are away from school.

Caroline Worth, Dietitian, Starship:

If there are big days planned such as sports days or day trips away from school, it's really important that the parents know about these things, before they happen. This is because the parents can then pack additional snacks as required but also, they may need to get in contact with the diabetes team and adjust the insulin to manage that situation as well.

Lisa, Prisha's teacher, Ormiston Primary School:

Obviously with camp, you do get quite nervous because you have learners with you the whole time, day and night, so I was a little bit nervous. I was assigned as Prisha's caregiver during that time and we just needed to make sure that we tested regularly – so at regular intervals through the day. So before lunch, half an hour before lunch to check that her blood sugar levels were within range. If they weren't within range we then phoned up mum and dad and checked what we needed to do. So we had that conversation with mum and dad at all times through the camp. The other thing we had to do was just before she went to bed we had to check what her blood sugar glucose levels were and there were times when I would also wake her up to double check that everything was fine – for my own piece of mind but also to do the right thing by Prisha and her family because it's a big responsibility.

But generally speaking, it went really smoothly and I was really impressed with the way that Prisha handled herself in the situation. It's really, I think it's really important in times like that to really have a good conversation with the family, to keep in touch with one another, even if it's just by text, just to check you're doing the right thing.

Prisha's family:

Since her diagnosis, I think she has been to about three or four camps now, so, which is very good, that shows that she can manage and the teachers can manage everything very well.

Diabetes action and management plans

Dr Philippa Carter, Consultant, Starship:

Each year we give each child who is under our care a new action plan for managing their diabetes at school and that particularly is aimed at giving schools some ideas of what a normal blood glucose should be, what to do if the child is low and also want to do in the cases when the glucose level goes high.

I think often the most frustrating thing about diabetes for everybody who has to deal with it is that glucose levels change all the time and even though you might think that you have done exactly the same thing today as you did yesterday, the glucose level could be hugely different from what it was in the same circumstances yesterday. There are so many different variables that influence what happens to a child's glucose level and that can make it very difficult to try to get a good feel for how best to manage a child and I think it's really important that people recognise that there will be days when the glucose level is out of its target range and that we need to try and keep that in perspective and look at the overall pattern of how well the child is doing.

Rita Sigley, Diabetes Nurse Specialist, Starship:

Every child with diabetes should have a diabetes action and management plan which outlines the diabetes care that is required at school. The diabetes action and management plan is developed by the child/young person's family with input from the diabetes team if necessary. We advise that the key school staff and family meet at least annually to individualise and negotiate how this plan will be implemented at school.

All the key staff at school need to be aware of the management plan and they need to know where the supplies are kept and what action is to be taken in the event that a hypo should occur and templates of the school action and management plans can be accessed on the Starship website and the links are available at the end of this video

Lisa, Prisha's teacher, Ormiston Primary School:

The school has a very up-to-date management plan that we keep in the sick bay downstairs in the reception area and in the staff room. All staff are aware of where it is. They are all aware of how low is too low. They're also aware of what they need to give Prisha if she gets too low and where they can find that. There's a container in the sick bay that can be accessed readily from anybody so that they can help her.

Insulin Administration

Rita Sigley, Diabetes Nurse Specialist, Starship:

Most primary school aged children do not require insulin at school but in some cases this is required during the day in the form of an insulin injection using a pen or via their insulin pump. If insulin is required at school the type, dose, method of delivery and the level of supervision should be clearly documented in their diabetes management plan.

Diabetes and food

Caroline Worth, Dietitian, Starship:

There’s no specific diet for children with Type 1 diabetes. And just like with any other children, it’s really important that they get a wide variety of foods from across all of the food groups. The most important thing to remember, when we’re talking about children with Type 1 diabetes is that it’s really important that they eat consistent amounts of carbohydrate and that it’s spread evenly across the day in regular amounts. That will depend a little bit on what type of insulin regimen they are on. It is important that children with Type 1 diabetes are allowed sufficient time to eat all of their snacks and lunch that is provided in their lunchbox. Some younger children may require supervision around this, to ensure that they are eating all of their carbohydrate foods and to make sure that they’re not swapping foods with other children.

Additionally to this, some children may require supervision when it comes to counting carbohydrates in their lunchbox. This is to make sure that they also accurately count the carbohydrates and then accurately calculate the amount of insulin to give for that required amount of carbohydrate food.

Some children may also have additional foods in their lunchbox that we call free foods. These foods are non-carbohydrate based foods and may be provided to ensure that the child is full. These foods can be things like non-starchy vegetables, cheese, meats, salamis and also things like nuts and seeds.

Sick Days

Rita Sigley, Diabetes Nurse Specialist, Starship:

Children with Type 1 diabetes do not get sick more often but when they do become unwell, this can make their diabetes a little bit more tricky to manage. So during episodes of illness, children with Type 1 diabetes will require closer monitoring of their blood glucose levels and they may need adjustment to their insulin doses also.

At school if a child becomes unwell, their parents should be contacted, so that they can monitor their diabetes more closely at home.

Ketones

Rita Sigley, Diabetes Nurse Specialist, Starship:

Ketones are an acid that build up in the blood if there's not enough insulin in the body. Ketones are checked using a special ketone machine that works just like a blood glucose testing kit or they can be checked by a urine dipstick. A positive ketone result is a reading greater than 0.5mmols on a blood test or when the urine dipstick changes to a dark pink or a purple colour. Ketone testing should be carried out if a child is unwell or vomiting, and in this instance the family should be contacted and they will take the child home from school where they can monitor the blood glucose levels and the ketones more closely.

Children on pump therapy however require ketone testing if they have a blood glucose level that is greater than 15 because they don't have any background long-acting insulin on board. All children on pump therapy should have a blood ketone meter at school so that their ketones can be checked in line with their diabetes management plan. A positive ketone result requires an immediate response. The child or young person's family should be contacted and they will give instruction on extra insulin requirement but in some instances the presence of ketones means that the parents will take the child or young person home where they can more closely manage their care while they're at home.

Young people with diabetes and exams

Rita Sigley, Diabetes Nurse Specialist, Starship:

Low or high blood glucose can affect a young person’s ability to concentrate so managing a child’s diabetes during an exam requires more advanced planning. The child or young person will need to take their blood glucose meter and hypo treatment and snacks and extra water and things like that into the exam.

Special conditions for a young person living with Type 1 diabetes who is sitting NCEA or Cambridge exams should be negotiated at the beginning of each academic year and a specialist medical report for each young person confirming special requirements must be submitted to NZQA by the school early in each academic year so at Starship we provide families and young people due to sit exams with this report at the beginning of Term 1 so that they have that available to give to the school but there’s more advice available on this on the Starship Diabetes website

Resources and additional information

Rita Sigley, Diabetes Nurse Specialist, Starship:

We hope that this resource has given you an overview of what Type 1 diabetes is, and enough information to increase your confidence on how to manage a child or young person with diabetes in your school. The diabetes team at Starship are available to offer further support and advice also where necessary and there are templates of the school action and management plans together with further reading and resources and they’re all available on the Starship website on the links at the end of this video.