

A CHILD WITH TYPE 1 DIABETES IS IN YOUR CARE



DIABETES MANAGEMENT IN SCHOOL

School is the place where children with Type 1 diabetes are most often in the care of others and, therefore, it is important that teachers, school nurses, and administrators understand the disease.

Juvenile Diabetes Research Foundation's Position Statement Regarding Diabetes Management in Schools states that it is essential that children with Type 1 diabetes be able to monitor their blood glucose levels, eat food, and administer insulin when necessary, in order to manage their diabetes to the maximum extent possible. Children with diabetes must be able to test their blood glucose levels and apply whatever means necessary to bring these levels to near normal quickly and with as few obstacles as possible. Accordingly, these children should be allowed to test their blood glucose levels in the classroom, or anywhere else they happen to be, and administer corrective measures immediately. Failure to do so could lead to life-threatening insulin shock and coma, and long-term complications such as kidney failure, blindness, amputation, heart disease, and stroke exacerbated by high blood glucose levels.

In the fall before the school year starts or when a child is newly diagnosed, parents should request a conference with everyone at the school who may have a role in the child's diabetes care. An accommodation plan should then be prepared to address their child's specific needs at school. Children with diabetes need the cooperation and support of school staff members to help them with their treatment plan.

Two Simple Facts

In addition to medical needs, whether you are a teacher, a camp counselor, a baby-sitter, or a relative, you should realize that:

- Children with diabetes have the same needs for guidance, support, and understanding as other children.
- Diabetes is not contagious.

DIABETES DEFINED

Type 1 diabetes is a chronic autoimmune disease. In a child with Type 1 diabetes, the pancreas does not produce insulin, a hormone necessary to sustain life. Without insulin the sugar in the blood can't be used, but builds up in the blood stream even while the body is starved for energy. A person with Type 1 diabetes must test blood glucose levels four or more times daily and take multiple insulin injections to stay alive and remain healthy. Insulin, however, is not a cure. It is only a means of controlling the disease.

HOW DIABETES IS CONTROLLED

Diabetes control means keeping the level of sugar (glucose) in the blood as close to normal as possible. The three variables of diabetes control are: food, exercise, and insulin. Self-monitoring of blood glucose is the tool for tracking and maintaining the balance among these variables.

The quick rule is: food makes glucose levels rise; exercise and insulin make glucose levels fall. Diabetes control is a constant balancing act of food, exercise, and insulin. Self-monitoring of blood glucose is the tool for maintaining this balance. If the balance is thrown off, either of two diabetes-related emergencies might occur: hypoglycemia (low blood sugar, an insulin reaction, or insulin shock) or hyperglycemia (high blood sugar), both of which can lead to life threatening conditions.

HYPOGLYCEMIA (LOW BLOOD SUGAR)

The emergency situation you are most likely to encounter in caring for a child with diabetes is low blood sugar, also known as an insulin reaction or insulin shock. Low blood sugar may be caused by eating too little food or not eating soon enough after a previous meal, by too much physical activity without eating, or by taking too much insulin. Symptoms listed below generally appear suddenly.

Each child has a particular set of personal symptoms that you will come to recognize, which may include:

- Headache
- Pale, moist skin
- Extreme/sudden hunger
- Shakiness
- Fatigue/drowsiness
- Blurred/double vision
- Confusion/inattention
- Sweating
- Cold and clammy
- Weakness/dizziness
- Rapid pulse rate
- Shallow breathing
- Loss of coordination

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Treatment:

If the child is awake and can swallow, provide sugar immediately. Give a fast-acting form of sugar such as glucose tablets, non-diet soda, juice, or sugar water. The child should be feeling better within 10 minutes. If the child does not improve in 10 to 15 minutes, treat the reaction again. To prevent an immediate recurrence, once the reaction subsides, the child should eat some type of complex carbohydrate such as milk, or half of a meat, cheese, or peanut butter sandwich. Make sure the reaction has been resolved and blood sugar is normal before the child is left alone or allowed to go home.

If a child is unable to eat or drink, but is still conscious, glucose gel, cake icing from a tube, jam, or syrup can be rubbed on the inside of the cheek or on the gums with a finger.

Keep glucagon – a prescription drug for emergency use to raise the level of sugar in the blood – on hand in case of emergency. If the child is unconscious or having a seizure, you should inject glucagon and call 911. Do not give anything by mouth. If you do not know how to give glucagon, do not have it available, or there is no response to glucagon, call 911 for an ambulance and get the person to the hospital immediately.

Instructions for using glucagon are provided with the product. It is a safe drug, with no danger of overdose. Because occasionally it may cause vomiting, the child should be lying on his or her side to prevent choking. If the child does not respond quickly, another dose may be administered. When he or she awakens, some form of complex carbohydrate should be eaten right away. The doctor should always be notified if a child experiences this type of hypoglycemic reaction.

HYPERGLYCEMIA (HIGH BLOOD SUGAR)

Blood sugar levels can increase rapidly in children. High blood sugar, or hyperglycemia, is suggested by the following symptoms:

- Extreme thirst
- Sudden weight loss
- Frequent urination
- Drowsiness, lethargy
- Heavy, labored breathing
- Sugar in urine
- Stupor, unconsciousness
- Sudden vision changes
- Increased appetite
- Fruity, sweet, or wine-like odor on breath

Hyperglycemia can be caused by too much food, too little physical activity, not enough insulin, or illness or infection. High blood sugars can be confirmed by testing with a glucose meter. If hyperglycemia occurs, the parent or guardian should be notified.

Ketoacidosis

Hyperglycemia also can result in ketoacidosis, a diabetes-related emergency that can occur when blood sugar levels get too high. The body, starved for glucose, starts using stored fat for energy, causing acids to build up in the blood. The products of this process, ketones, are excreted in the urine. Urine levels should be checked when a child is ill or any time symptoms are present. Home kits are available for testing. A high level of ketones in the urine is a signal to call the child's doctor.

Signs of ketoacidosis may include:

- Extreme thirst
- Abdominal pain
- Heavy, labored breathing
- Vomiting
- Weakness/dizziness
- Fatigue/drowsiness
- Fruity, sweet, or wine-like odor on breath

Ketoacidosis requires prompt attention; if left untreated, a child with ketoacidosis can lapse into a coma. If there are signs of ketoacidosis, the child should be taken to the emergency room.

DAILY ROUTINE OF A CHILD WITH DIABETES

Consistency is the key – regular meals, regular exercise, regular insulin injections. In addition, the child will need to test his or her blood sugar level at various times of the day to determine food or insulin needs.

Diet

Children with diabetes can eat the same healthy foods as other children. Their diet should be low in sugar, fat, and salt and high in fiber. Foods such as beans, fruits, vegetables, breads and cereals, low-fat dairy foods, and lean meats are ideal. The school lunchroom manager should be aware of the child's diet restrictions, such as limited carbohydrates and low-sugar items, but the child should also be taught to select the right foods.

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Frequent Snacks

A child with diabetes will usually require snacks at mid-morning, mid-afternoon, and bedtime. Snacks may include crackers with peanut butter or cheese, a mini bag of pretzels, fresh fruit, graham crackers, one cup of low fat milk, or one juice box. Snacks (and regular meals) must occur on time so insulin usage is properly balanced and low blood sugar does not occur. A child going on a field trip should carry convenient snacks on the bus and field trip. Bus drivers and chaperones should be notified that the child has diabetes and may need to eat a snack on the bus or during the trip. Also, a child with diabetes participating in any after school activity should be allowed to conduct a blood sugar test and eat a snack during the session.

Exercise

Physical activity is an important part of the overall management of diabetes, and children with diabetes are encouraged to participate in all kinds of active sports. The child should have an extra snack of juice or crackers before planned strenuous exercise to avoid low blood sugar. Exercise should not be scheduled just before a meal. It is important to test blood sugar levels before and after exercise. Some children who play sports also will want to test during games or exercise.

Self-Monitoring of Blood Glucose

A child with diabetes usually needs to test blood sugar several times a day, before meals and before bedtime. Usually this process involves poking the finger, putting a drop of blood on a chemically sensitive strip, and taking a blood sugar reading on a meter. Older children are usually able to do this themselves; younger children may need help.

Insulin Pumps

The pump is a small computerized device, about the size of a pager, worn on a belt or in a pocket. The pump delivers insulin through a flexible tube attached to a needle inserted under the skin and taped in place on the abdomen. The site where the needle is inserted should be changed regularly. The pump mimics the body's natural production of insulin, delivering both a continuous low basal rate of insulin and extra amounts as needed to cover meals.

NEEDS OF CHILDREN

- *Treat the child normally.* A child with diabetes will be able to function as a normal participant in group activities. While the fact that he or she has diabetes should not be hidden, the child does not want to be singled out for special treatment. A quiet understanding should exist between you and the child about the necessary precautions to be taken.
- *Allow the child to follow his or her routine inconspicuously.* When the child needs extra snacks, to test blood sugar, or to take insulin, help by allowing the necessary time and not calling attention to these special actions.
- *Be alert to the changes that signal low blood sugar.* If behavior problems arise as a result of an insulin reaction, you should not blame the child. Quick action on your part can prevent a medical emergency.

GENERAL TIPS

- Watch the child's behavior before meals and snacks.
- Make sure meals are eaten on schedule.
- Don't assign physical exercise just before a meal.
- Arrange an inconspicuous means of taking the mid-morning and/or afternoon snacks.
- Keep a source of sugar readily available, and encourage the child to carry some form of sugar.
- Make sure all necessary personnel are informed.
- Most children need a snack at night before bed.

The information in this brochure is not intended to take the place of medical advice. For guidance on topics discussed, consult your health care professional.

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Visit us on the Web at www.jdrf.ca.



dedicated to finding a cure

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Use this form as a helpful resource for those who care for your child.

Name _____

Address _____

Names of parents/guardians _____

Father's phone: Home _____

Office _____

Mother's phone: Home _____

Office _____

Alternate person and phone number _____

Physician's name and phone number _____

Symptoms the child exhibits before an insulin reaction _____

Treatment _____

Time of day reaction is most likely to occur _____

Type of morning or afternoon snack _____

Suggested "treats" for parties _____

Parents will supply _____ for snacks.

Type of insulin used _____

Shots per day / units per shot _____