

# Dealing With Type 1 Diabetes

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**Target Audience:** People with type 1 diabetes or those affected by it

**Objectives:** Participants will:

1. Be able to define type 1 diabetes.
2. Be able to explain basic treatment for the disease.
3. Be able to work with their medical team to develop the best management plan based on their individual needs.

**Time Required:** 30–45 minutes; for a 15-minute presentation, eliminate details on high and low blood glucose causes and treatment and school plan

**Equipment:** Overhead projector and screen, overheads including blank transparencies and pens to write on transparencies.

**Props:** 4 ounces juice; ½ cup regular (not diet) soda; small tube of cake icing; 1 tablespoon raisins; 3 packets sugar; 5 or 6 Lifesavers; 2 glucose tablets

**Handouts:** “High and Low Blood Glucose Symptoms and Causes”; “Examples of Treatments for Hypoglycemia”; “Preparing a School Plan for Your Child With Diabetes”  
Optional display copy or handout: “Helping the Student with Diabetes Succeed: A Guide for School Personnel.”

## Lesson Plan

We don’t expect young people and children to have chronic diseases, but type 1 diabetes affects nearly one out of every 600 children. This doesn’t mean that adults can’t develop it later in life, but it is diagnosed most often in children and teens.

Can anyone tell me what organ in the body is not functioning normally when a person gets type 1 diabetes? (*Answer: the pancreas—show overhead entitled “The Pancreas.”*) That’s right. An organ near the stomach called the pancreas has special cells called beta cells that produce a hormone called insulin. What does insulin do for the body? (*Answer: It helps to carry the blood glucose (sugar) from our food into our cells.*)

Type 1 diabetes occurs when the beta cells can no longer produce insulin. The body’s antibodies for some reason destroy the cells. No one is sure why it happens, but it may be a combination of heredity and environment. One day researchers hope to pinpoint the cause and learn how to prevent it. For now, all we can do is learn how to control the disease to prevent short-term and long-term complications from occurring.

What are four things that help control type 1 diabetes? (*Answer: a healthy meal plan, insulin, blood glucose monitoring, and regular exercise. Show overhead entitled “Four Ways To Control Type 1 Diabetes.”*) The eating and activity recommendations for a person with diabetes are good for everyone. When someone in the family has type 1 diabetes, the whole family has the opportunity to adopt a healthier lifestyle. A consistent schedule for eating, physical activity, monitoring, and medication is very important. This can be very difficult with the active, on-the-go lifestyle most people now live. Do any of

you have good ideas about how you have managed to provide more consistency in your or your loved one's diabetes self-management? (*Write down suggestions on a blank overhead.*)

Think about long-term and short-term goals for managing type 1 diabetes. What would be the short-term goals? (*Answer: Preventing low and high blood glucose levels, feeling good, and having plenty of energy. Show overhead entitled "[Short-Term Goals](#)."*) That's right. Keeping the blood glucose in the target range recommended by your doctor and trying to avoid high and low blood glucose levels (hyperglycemia and hypoglycemia) are very important. Most people with type 1 diabetes will need to check their blood glucose levels three or more times a day to know exactly how food, activity, and medicine affect them.

What are the symptoms and causes of high and low blood glucose (also called hyperglycemia and hypoglycemia)? (*Show overheads entitled "High Blood Glucose" then "Low Blood Glucose."*) (*Distribute the handout "High and Low Blood Glucose Symptoms and Causes."*)

<b>Hyperglycemia (high blood glucose) Symptoms</b>	<b>Hyperglycemia (high blood glucose) Causes</b>	<b>Hypoglycemia (low blood glucose) Symptoms</b>	<b>Hypoglycemia (low blood glucose) Causes</b>
Thirst	Too much food	Shakiness	Too little food
Hunger	Too little exercise	Sweating	Too much medicine
Frequent urination	Too little medicine	Hunger	More activity than usual
Fatigue	Stress, illness, or injury	Anxiety or nervousness	Too long between meals or snacks
Nausea	Short time between meals and snacks	Confusion	Alcohol
Blurred vision		Anger or irritability	
Headache		Slurred speech	
Confusion or nervousness		Sleepiness	
		Headache	

Whenever you or the person with diabetes feels "funny" or suspects high or low blood glucose, try to monitor the blood glucose level. Your medical team can help you learn how to correct blood glucose levels when they are high, but less than 240, by using extra insulin, more exercise, or food adjustments. When the blood glucose level is over 240, the urine needs to be tested for ketones. Ketones are a waste product from fat breakdown for energy. (*Show overhead entitled "[Ketones](#)."*) Ketosis is dangerous. You should call your doctor immediately when there are ketones in the urine. Special treatment will be needed. Untreated ketosis can lead to diabetic coma and even death.

Low blood glucose can be treated with a quick-acting carbohydrate. Use the rule of 15 to treat hypoglycemia. (*Show overhead entitled "[Rule of 15](#)."*) First, check the blood glucose level if you suspect it is low. If you cannot check, assume it is low. Treat yourself, or the person with diabetes, by consuming 15 grams of carbohydrate and waiting 15 minutes. Check the blood glucose again. Retreat with 15 more grams if the

level is not where you want it to be. Recheck again in 15 more minutes. If the blood glucose level doesn't improve after three of these treatments, call the doctor. Some people with type 1, such as toddlers, can't tell when their levels are low, so parents may have to look for behavior changes or test more often if they suspect their child is likely to "go low" due to too little food intake or too much activity.

Once the blood glucose is at the right level again, you or the person with diabetes may need a more substantial snack like half of a sandwich or two to three cheese crackers if a meal is not planned within the hour.

What are some quick-acting forms of carbohydrate? *(Allow time for answers then show samples of quick acting sources—4 ounces juice, ½ cup regular [not diet] soda, 1 small tube of cake icing, 1 tablespoon raisins, 3 packets sugar, 5 or 6 Lifesavers®, 2–3 glucose tablets.)* Quick-acting carbohydrate should be carried all the time *(Distribute handout "[Examples of Treatments for Hypoglycemia.](#)")*

What are the long-term goals for controlling type 1 diabetes? Of course it is to control blood glucose, blood pressure, and blood cholesterol and triglyceride levels so that long-term complications of diabetes can be delayed. *(Show overhead entitled "[Benefits of Long-term Diabetes Control.](#)")* A very important study called the Diabetes Control and Complication Trial found that those who kept their blood glucose as close to the normal range as possible had few eye, kidney, and nerve complications due to diabetes. However, keeping tight control did result in more episodes of low blood glucose. Keeping the blood glucose level in the right range is a tough job, but *consistency* in eating, monitoring blood glucose, activity, and medication can help.

Working with a child's school can be a real challenge. A parent and the child with diabetes need to meet with school administrators, nurses, teachers, and coaches at the beginning of every school year to develop a written plan. This plan should address the following *(show overhead entitled "[Key Elements of a School Plan](#)" and distribute handout "[Preparing a School Plan for Your Child With Diabetes.](#)" Another good resource in assisting school personnel in understanding diabetes and working with your child is "[Helping the Student With Diabetes Succeed: A Guide For School Personnel,](#)" [www.ndep.nih.gov](http://www.ndep.nih.gov)):*

1. The schedule for checking blood glucose and taking insulin.
2. Snack and meal times.
3. Preferred snacks and party foods.
4. Typical signs and treatment of low blood glucose.
5. How to contact parents and back-up support for emergencies.
6. Who at the school will be responsible for helping the child with his or her diabetes care.

The treatment for type 1 diabetes will change over time. *(Show the overhead entitled "[Benefits of Seeing a Medical Team.](#)")* That is why it's so important to see the medical team several times a year. They can review your diabetes records to help you find patterns in your blood glucose results. Then they can recommend changes in diet, activity, or medicine to improve diabetic control.

They can also do special tests to pick up early signs of diabetic problems, such as check the accuracy of blood glucose monitoring, recommend new medications and ways to use old ones, fine tune the meal plan and physical activity schedule, and help you and your family deal with all the feelings about the disease.

There seems to be a new medication and blood glucose meter for diabetes every week. The medical team can help find the best ones for your situation and develop a medication and monitoring schedule that will achieve your personal blood glucose goals. Most people with type 1 diabetes, even young children, now take multiple injections of insulin or use an insulin pump to allow more flexibility. They can consume sugar and other high carbohydrate foods in moderation based on blood glucose results. Exercise is important to reduce risk for heart disease and help with stress reduction. And a diabetic support group can help you learn new skills and cope with the emotional side of diabetes.

Diabetes is not an unreceptive disease. It is a disease that requires self-management. Working closely with the medical team, trying new treatments, and finding out what works for each individual represent the best hope for good long-term diabetes control.

People affected by diabetes may wish to link to the NIDDK publication called Your Guide To Diabetes: Type 1 and 2 ([www.niddk.nih.gov/health/diabetes/pubs/type1-2/index.htm](http://www.niddk.nih.gov/health/diabetes/pubs/type1-2/index.htm)).