



# School Nurses: Diabetes I

- ▶ **Audience:** Pre-K Lead Teachers
- ▶ **Type:** Self-Paced with Rolling Enrollment
- ▶ **Enrollment:** September 1, 2022-April 14, 2023
- ▶ **Duration:** September 1, 2022 - May 19, 2023

**Description:** This course is designed to refresh nursing knowledge in the basic care of students with type one diabetes. It introduces you to the basic pathophysiology of type one diabetes and gradually increase base knowledge to understanding carbohydrate counting, insulin therapy, and insulin pump management. It allows easy understanding of blood sugar highs and lows while providing information on research and resources. Throughout this course, you will, among other tasks, create components of a Section 504 for a student with type one diabetes.

## Course Goals:

- ▶ Understand the pathophysiology of diabetes and review the causes of type one diabetes.
- ▶ Understand both state and federal laws which protect the student with diabetes.
- ▶ Recognize the difference in simple carbohydrates and complex carbohydrates and how they affect blood glucose levels.
- ▶ Help students make food choices based on the glycemic index.
- ▶ Assist the student in counting the number of carbohydrates for each meal.
- ▶ Understand the types of insulin as well as their peak and duration of action.
- ▶ Describe the difference between the Constant Carbohydrate Plan and Carbohydrate Counting Plan.
- ▶ Calculate the insulin required for a student using an insulin-to-carb ratio and a correction factor.
- ▶ Explain the difference between a basal rate of insulin and an insulin bolus of insulin.
- ▶ Develop a basic understanding of insulin pumps on the market today.
- ▶ Explain the function of a continuous glucose monitor.
- ▶ Define both hypoglycemia and hyperglycemia and list the causes and treatments for these situations.
- ▶ Explain ketone testing and its importance.
- ▶ Complete a Diabetes Medical Management Plan (DMMP).
- ▶ Identify some of the psychosocial issues students with type one diabetes may face.

## Session Overviews

### ▶ **Session One - Getting to Know Families**

Diabetes is the most common endocrine disease in children. According to JDRF, formerly the Juvenile Diabetes Research Foundation, type one diabetes (T1D) is an autoimmune disease in which a person's pancreas stops producing insulin, a hormone people need to get energy from food. T1D strikes both children and adults at any age and suddenly. Its onset has nothing to do with diet or lifestyle. Though T1D's causes are not yet entirely understood, scientists believe that both genetic factors and environmental triggers play a role. There is currently nothing you can do to prevent it, and there is no cure.

While insulin injections or infusion allow a person with T1D to stay alive, they do not cure the disease, nor do they necessarily prevent the possibility of the disease's serious effects, which may include kidney failure, blindness, nerve damage, heart attack, stroke, and pregnancy complications.



▶ **Session Two - Food Management and Type One Diabetes**

Healthy eating for children with diabetes is the same as healthy eating for all children. Having a food plan is important for students with type one diabetes. It is also important to remember that children with diabetes are children FIRST. Having type one diabetes doesn't mean these students can't eat the same foods as their friends, they can – it just takes a plan.

Any plan a student may use will involve some method of carbohydrate “carb” counting and insulin administration. Being able to help the student plan his or her meals, determine the total number of carbohydrates, and calculate the units of insulin will help control their blood glucose levels and manage their diabetes.

▶ **Session Three - Insulin Therapy**

Students with diabetes require a balancing act of carbohydrate counting, physical activity, and insulin administration. Insulin is “life support” for children with diabetes. It is important for school nurses to be aware of the types of insulin available and the different plans used to determine insulin dosage.

With the many new insulin analogs on the market, students with type one diabetes have more flexibility and choices in their diabetes management. Most children use a combination of rapid-acting and long-acting insulin therapy. Rarely do you see a student prescribed an intermediate-acting insulin – NPH

▶ **Session Four - Insulin Pumps**

Snacks (including on the bus), mealtimes, testing times, and testing when blood sugars are high or low, syringes, insulin pens, and insulin pumps all serve the same purpose: to deliver insulin to students with type one diabetes. Which method of administration a student uses depends upon many factors. These factors include the age of the student, the number of years since diagnosis, current blood glucose control, and insurance coverage.

Students with diabetes must inject insulin many times a day. The exact number of injections varies from student to student. This task can be overwhelming for many students. Insulin pens and insulin pumps can make this task more manageable. Choosing an insulin delivery method is a personal decision to be made by the student, family, and physician.

▶ **Session Five: The Highs and Lows**

The key to diabetes control is a careful balance between exercise, food, and insulin. It is not an easy task. There will be times, no matter how closely carbohydrates have been counted and insulin calculations have been made, the student with T1D will still experience high and low blood glucose levels.

When a student faces a hypoglycemic or hyperglycemic episode, it is very important that the school nurse and the support staff know how to treat these situations. Again, it is important to remember that each student needs to be treated as an individual and to follow his or her Diabetes Medical Management Plan.

▶ **Session Six: Everything Else; DMMP, Research and Resources**

Effective diabetes management in school takes a lot of work from everyone involved. The school nurse's role in maintaining the safety and long-term health and success of the student with T1D is vital. The school nurse also must act as an advocate for the student with diabetes to ensure they have access to all of their needed supplies at all times.

## **Course Grades**

All grades in the course gradebook must be a checkmark for successful course completion. A checkmark indicates that all work has been completed and the work meets the expectations for that assignment. Quiz scores must meet the minimum expectations as stated in the course.

