

Diabetes Care at School: Bridging the Gap

Activity Agenda

1: Instructions and Disclosure to Participants

2: CNE Course Pre-test

3: Let's Get Started! View the Course

A: Diabetes Awareness

Overview of the different types of diabetes, identifies symptoms of mild, moderate, & severe hypoglycemia as well as hyperglycemia. Use of emergency data cards as a means to familiarize school staff with a student's typical diabetes related symptoms. Addresses techniques to help reduce the risk of severe hypoglycemia during the school day: Insulin delivery devices, dietary considerations; exercise and physical activity; psychosocial issues, and disaster preparedness are also addressed.

LEARNING OBJECTIVES:

- Differentiate between the three common types of diabetes.
- Recognize four common insulin delivery devices.
- State the importance of monitoring blood glucose levels during the school day.
- Describe the appropriate response to a student who may be experiencing a diabetes-related emergency.
- State the component in food that has the greatest impact on blood glucose levels.
- Describe the impact of physical activity on blood glucose levels.
- Recognize when a student is experiencing emotional distress related to diabetes

B: Monitoring Blood Glucose Levels

Overview of clinical reasons to monitor blood glucose, target ranges, times to check BG levels while at school, utilizing a glucose meter correctly, minimizing fingerstick pain, blood glucose testing equipment and supplies, maintenance and storage of glucose meters, troubleshooting BG meters, continuous glucose monitoring (CGM) devices, and importance of validating accuracy of meters (control solution tests) since insulin dosing is derived from the BG value obtained.

LEARNING OBJECTIVES:

- State the reasons for monitoring blood glucose levels during the school day.
- State when blood glucose monitoring is typically needed.
- Describe how a blood glucose meter works, and the basic process of performing a blood glucose check.
- Describe how to properly maintain a blood glucose meter to ensure optimal performance.
- List the benefits of Continuous Glucose Monitoring (CGM) and state how CGM differs from traditional glucose testing with a meter.

C: Recognizing and Treating Hypoglycemia

Overview of the definition of hypoglycemia, common causes, signs and symptoms, treatment (rule of 15 g carbohydrate every 15 minutes), optimal glucose sources for oral treatment, when and how to administer emergency glucagon for the treatment of severe hypoglycemia, and importance of never leaving a student unattended during a hypoglycemic episode.

LEARNING OBJECTIVES:

- Define hypoglycemia.
- Describe the symptoms of hypoglycemia
- State the actions required to treat hypoglycemia
- Describe when and how to administer a glucagon injection
- List 3 common causes of hypoglycemia.
- List 3 prevention strategies to reduce the risk of a severe hypoglycemic episode

D. Recognizing and Treating Hyperglycemia

Overview of the clinical definition of fasting and post prandial hyperglycemia, common causes, signs and symptoms, treatment utilizing corrective insulin dosing from the student's diabetes medical management plan, recognition and prevention of diabetes ketoacidosis (DKA), technique to perform urine and blood ketone testing. Importance of prompt intervention to correct hyperglycemia to avoid negative impact on student's health, well-being, and performance in the classroom.

LEARNING OBJECTIVES:

- Define hyperglycemia
- List the long term risks associated with hyperglycemia
- Recognize the symptoms of hyperglycemia

- Explain how to properly treat hyperglycemia
- Cite two methods of testing for ketones
- Explain how to respond to the presence of ketones
- List three common causes of hyperglycemia
- Describe two strategies to prevent hyperglycemia

E: Insulin and Insulin Regimens

Overview of insulin formulations, functions, action profiles, and various basal bolus insulin regimens that are typically prescribed by pediatric endocrinologists. Importance of meal timing in relation to prandial insulin dosing is discussed. Proper storage, handling and transport of insulin is also addressed.

LEARNING OBJECTIVES:

- State the main function of insulin
- Describe the different types of insulin
- Differentiate between two common insulin regimens
- List the guidelines for the storage and handling of insulin

F: Insulin Delivery Devices

Overview of 4 common insulin delivery devices: Syringes, Insulin Pens, Jet Injectors, and Insulin Pumps. Injection technique with syringes & pens is highlighted, reducing pain at injection sites, importance of rotating injection sites, video demonstrations are included, overview of insulin pump and jet injector operation is provided. (Chapter 11 is dedicated entirely to insulin pump therapy.)

LEARNING OBJECTIVES:

- List the different methods of insulin delivery
- Describe proper insulin injection technique
- State appropriate sharps disposal procedures

G: Diet and Nutrition

Overview of the qualities of the diet that may be beneficial for the student with diabetes, the impact of carbohydrate, protein, and fat on post prandial glucose levels, carbohydrate counting and sources of information to obtain the carbohydrate content of foods. Fixed meal-time insulin dosing (requiring a consistent amount of carbohydrate to be consumed at meals) versus use of an insulin to carbohydrate ratio (allowing variable carbohydrate consumption) are differentiated and examples of each dosing

strategy are provided. Importance of injection timing versus meal intake is discussed in cases where the student may be standing in a long lunch line.

LEARNING OBJECTIVES:

- Identify the main food groups that contain carbohydrate
- Describe the impact carbohydrate, protein, and fat intake has on blood glucose
- Explain the basics of carbohydrate counting
- Explain how insulin dosing is related to carbohydrate intake

H: Exercise and Physical Activity

Overview of the need for regular physical activity as an important aspect of a student's overall health and development and emphasizes the point that student's with diabetes benefit from exercise in the same way as student's who do not have diabetes. Impact of exercise on blood glucose levels is discussed, as well as strategies to prevent hypoglycemia. Routine monitoring of BG levels, before, during, and after activity is the cornerstone of hypoglycemia prevention. Physicians may alter the insulin regimen to reduce the risk of exercise induced hypoglycemia. Follow the diabetes medical management plan carefully,

LEARNING OBJECTIVES:

- Describe the impact of physical activity on blood glucose levels.
- Describe the conditions in which exercise may cause glucose levels to increase.
- Define "delayed onset hypoglycemia" and state what might cause it to occur.
- List several techniques to ensure safe exercise and physical activity for the student with diabetes

I: Psychosocial Issues

Overview of the emotional impact of diabetes both on the student and on the parents. Differences in student willingness to engage in self-care behaviors will vary based upon age, and developmental capabilities. It is important to encourage but not force students to participate in their care. Do not scold students for BG levels outside of target range, rather utilize the situation as a learning opportunity to determine why the BG levels went out of range. Resources for assistance with medical supplies and diabetes camps are discussed.

LEARNING OBJECTIVES:

- Understand the varying levels of student readiness to perform self-care behaviors.
- Understand and recognize possible signs of emotional distress and depression among students with diabetes

- Identify sources of financial and emotional support.

J: Disaster Preparedness

Overview of the importance of preparing for a disaster- it is essential for a student with diabetes to have a backup supply of insulin and testing equipment. A disaster can disrupt the daily routine and potentially separate the student from caregivers and necessary medication. Changes in meal intake, activity level, and stress can all impact the student's BG level during a disaster situation. The importance of maintaining a diabetes disaster kit as well as kit contents are discussed. Importance of identifying and replacing expired items in the kit as needed is highlighted.

LEARNING OBJECTIVES:

- List the necessary contents of an emergency supply kit for a student with diabetes.
- Explain why insulin and testing supplies should be kept out of temperature extremes
- Describe factors that can affect a student's blood glucose during a disaster
- Understand the importance of maintaining hydration in a diabetic student during a disaster
- Explain how to minimize the short- and long-term psychological effects of a disaster

K: Insulin Pump Therapy

Overview of the advantages and limitations of insulin pump therapy. Operation and programming of insulin pumps is discussed, performing a meal time and correction bolus are demonstrated by video. Disconnecting from the pump and troubleshooting issues such as alerts alarms, infusion set malfunctions, low battery and low insulin are addressed. The importance of insulin injection back up plan is discussed to be prepared for the possibility of a pump malfunction.

LEARNING OBJECTIVES:

- List the basic functions of an insulin pump.
- List at least 3 circumstances that could indicate insulin delivery from the pump has been interrupted
- State how to respond in case of a pump malfunction

L: Laws and Legal Issues

Overview of federal laws that protect students with diabetes from discrimination while at school, and while participating in school related activities. Examples of violations of anti-discrimination laws are provided, as well as possible strategies to help parents, school staff, and administrators arrive at amicable solutions that will benefit the student with diabetes, and afford the same opportunities to excel at school as students who do not have diabetes.

LEARNING OBJECTIVES:

- List the Federal laws that apply to federally-funded schools with regard to caring for the student with diabetes
- Discuss examples of protections that these laws provide to a student who has diabetes.
- Identify State laws, regulations, or policies regarding diabetes care at school that your state has in effect.

4: CNE Course Post-test

5: CNE Course Evaluation

6: Download/print Completion Certificate