DIABETES

What is it?

Diabetes mellitus is a serious metabolic disorder that impairs the body's ability to properly process food for use as energy. Most of the food we eat is turned into glucose, or sugar, for energy needs. Cells in the pancreas release insulin that shuttles glucose from the blood stream into the body's tissue to use for energy. Diabetes occurs when blood glucose is too high. Insulin, a regulates how the body uses and stores glucose and fat. Without insulin, too much glucose stays in the blood and not enough reaches cells for energy. Diabetes can result from an insufficient production of insulin or the inability of the body to properly use insulin. Routine diabetes management requires coordination of blood glucose monitoring, meal planning, physical activity, and administration of insulin and other medication(s). It is a condition that requires continuous, careful monitoring and a coordinated team approach.

Type 1 Diabetes: T1, also known as insulin-dependent or juvenile diabetes, is an autoimmune disease that results in the destruction of beta cells of the pancreas; disabling it from producing insulin. A person with T1 diabetes requires insulin management. Without the presence of insulin, many of the body's cells cannot take glucose from the blood as required for energy. The body will then use other sources of energy. Ketones, produced by the liver, are an alternative source. High levels of ketones can lead to a dangerous condition called ketoacidosis.

Type 2 Diabetes: T2, also known as non-insulin-dependent diabetes or adult-onset diabetes, results from the body's inability to respond to insulin effectively, known as insulin resistance. The pancreas responds by making more insulin. Eventually the pancreas cannot keep up and blood glucose will rise. T2 diabetes is managed with diet, exercise, and medications. Over time, a person with T2 diabetes may require insulin due to prolonged demand on the pancreas.

Hypoglycemia	Blood glucose less than 70 mg/dL
Causes	Excess insulin, altered the amount or pattern of food intake, insufficient carbohydrate intake, increased or unplanned physical activity, illness
Symptoms	Hunger, irritability, shakiness, restlessness, drowsiness, anxiety, headache, lightheadedness, not feeling well, sweaty, change in behavior, slurred speech, blurred vision, seizure, unconsciousness, unresponsiveness
Treatment	Follow the student's DMMP for specific orders and instructions regarding administration of fast-acting glucose. This could include juice, easily chewable candy, or glucose liquid, gel, or powder. For severe hypoglycemia, Glucagon, a rescue medication, would be administered by trained unlicensed school staff designated to do so. Each instance of glucagon administration should be administered in the dosage and route prescribed by the student's DMMP/health care provider orders and a 911 call is required.

Hyperglycemia	Blood glucose greater than 240 mg/dL
Causes	Insufficient insulin, decreased physical activity, medication, infection, injury, emotional or physical stress, drugs or alcohol
Symptoms	Dry mouth, increased thirst, change in appetite, frequent urination, blurred vision, fatigue, vomiting, dehydration, heavy breathing, shortness of breath, fruity smelling breath, lethargy
Treatment	Follow the student's DMMP for specific orders and instructions including giving sugar-free fluid or water or administering insulin. It is important to consider the possibility of the presence of ketones and risk to progress to a hyperglycemic emergency (i.e., DKA).

Kennedy Krieger Institute

The Specialized Health Needs Interagency Collaboration (SHNIC) program is a collaborative partnership between the Kennedy Krieger Institute and the Maryland State Department of Education.

Suggested school accommodations

Accommodations for individual students should reflect the unique needs of the student. They should be developmentally appropriate and specific to the setting or activity. Having diabetes does not automatically qualify a student for a Section 504 plan but all students with diabetes are eligible for a Section 504 team assessment to determine the need for a plan. Examples to be considered in a plan could include access to snacks and water, ability to monitor blood glucose in the classroom, ability to self-administer insulin in the classroom, training of school staff to administer medications, modifications of procedure for academic testing, and withholding penalty for absence or tardiness related to diabetic management. The team should consider what accommodations are needed for the student regarding field trips and school-sponsored activities including sports, clubs, and outdoor education programs. Communication between the educators and the school health team is essential to safely manages a student with diabetes. The development of an Emergency Evacuation Plan (EEP) should also be considered.

Specific health issues for Individualized Healthcare Plan

- Review diabetes medical management plan/ health care provider order form
- Note student's schedule, assess and plan for modifications/accommodations for classroom, PE, cafeteria, bus, school-sponsored activities or events
- Alert and train school staff regarding diabetes and their role in the emergency plan including a list of school staff designated and trained to administer Glucagon
- Evaluate student's ability to self manage, consider spot check to check-in on student for correct procedure or supplies
- If student is able to self manage, establish method of communication to share blood sugar levels and treatment
- If student is not independent in diabetic care, obtain parental consent to help train the student based on their developmental and cognitive age
- Communicate with school staff, parents, and provider any changes or concerns about the student's disease
- Emergency Care Plan (ECP) related to medical needs in the school setting and staff education/training as appropriate for each

Resources & Manuals

Maryland School Health Services Guidelines: Management of diabetes in schools
http://marylandpublicschools.org/about/Pages/DSFSS/SSSP/SHS/SHSGuidelines.aspx

National Institute of Health (NIH): Helping the student with diabetes succeed: A guide for school personnel
https://www.niddk.nih.gov/health-information/health-communication-programs/ndep/health-care-professionals/school-guide/Pages/publicationdetail.aspx

American Diabetes Association: Training resources for school staff
https://www.diabetes.org/resources/know-your-rights/safe-at-school-state-laws/training-resources-school-staff