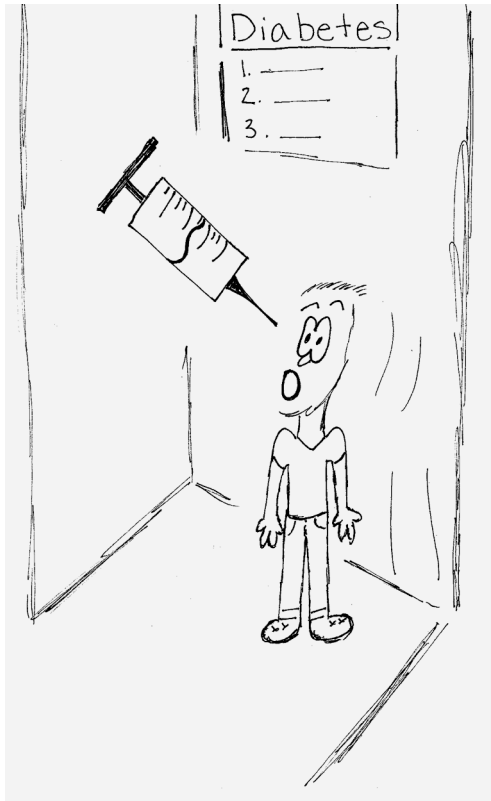


# How To Successfully Manage Diabetes In A School Setting

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## Glossary

1. Pancreas- an organ that makes insulin and enzymes for digestion.
2. Blood Glucose-the primary sugar found in the blood, it is also the body's main source of energy
3. Blood Glucose Level- amount of blood glucose in a given blood sample
4. A1C- a test that measures a person's average blood glucose over a period of time (usually 2-3months)
5. Carbohydrate -one of the three main nutrients in food
6. Hypoglycemia- low blood glucose level
7. Hyperglycemia- high blood glucose level, or excessive glucose
8. Ketoacidosis – is when the body has a prolonged high blood sugar, the body starts breaking down fat for energy and the body starts breaking down
9. Glucagon- is a hormone that is injected in the even of a low blood glucose emergency

## Visual Glossary



Blood Glucose Meter



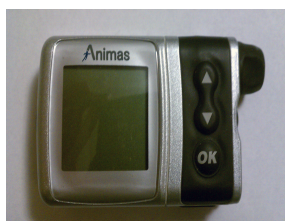
Test strips



Lancets



Lancing Device



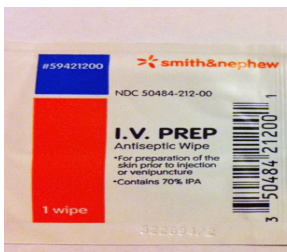
Insulin Pump



Insulin Pump Tubing



Reservoir



I.V. Prep pad



Vile of Insulin



Insulin Pen



Needle to Insulin Pen



Syringe



Glucagon



Ketostix

## FAQ's

Q: Should teacher inform the classroom about the child with diabetes?

A: This should be discussed with the family and faculty when planning the 504 plan. No teacher should discuss a student's personal information with the entire class without permission from the child and parent. Encourage the parent to come in and aid in the discussion. Also, see if the child wants to help. Studies show that peer support is wanted and needed by students with diabetes (Nabors, 2003). Maybe you could enable a buddy system to where if the child feels ill, he/she has a friend ready and able to walk them to get a snack at the nurse's station. This will allow the child to not interrupt class, but have a safe person to help them during the episode.

Q: How do you go about educating other students?

A: When educating other students, it is important to not single anyone out. If you have a diabetic child in your classroom do not say "When Sally doesn't feel well we should do this..." make the education of the students a more global activity. For instance, talk about eating healthier at lunch and the benefits or talk about the importance of exercise. Also, educating the students to notice signs of distress would be important, for example if someone is looking pale and shaky the student should tell the teacher.

Q: How can you deal with a teacher who is not going along with the 504 Plan?

A: Some teacher maybe feeling over whelmed with the thought of another responsibility. Having a child with diabetes in the classroom can be hard if the teacher is not trained or lacks efficacy. Be sure to give the teacher adequate knowledge of how to handle situations such as low blood sugar episodes and remind them that diabetes is a disability that can impede on a child's daily functioning in the classroom. And for a reminder on laws the school has to follow the article Diabetes in School: Plan Ahead written by Katie Bunker might give them more clarity on the responsibilities and accommodations the school is obligated to provide for a child with diabetes.

## Discussion Questions

1. How do you think it would be best to educate your staff?
2. How will your school policies need to be changed to accommodate children with diabetes?
3. Who do you think from your staff should be apart of the 504 Plan team?
4. Do you or your staff feel that they have adequate knowledge about diabetes?
5. What type of snacks should teachers keep in their classroom?
6. How can you improve communication between the school and the family?



## Example of Parental Letter

January 13, 2012

Dear Parents,

My son, David Smith, is in your child's 3<sup>rd</sup> grade class. John was recently diagnosed with type 1 diabetes. Today, David and I spoke to the class about type 1 diabetes. Most people know someone with diabetes but do not know much about the disease. Since David is in your child's class, we thought that we would share some information with you as well about Type 1 Diabetes.

Type 1 diabetes often develops in children, adolescents, and young adults, so it's sometimes called "juvenile diabetes." Diabetes is not contagious. You cannot catch diabetes from someone who has it. Researchers continue to study how and why diabetes occurs in certain children and families. Although diabetes cannot be cured, it can be controlled.

Type 1 diabetes is an autoimmune disease in which the body's immune system attacks and destroys the insulin-producing cells of the pancreas. While its causes are not yet entirely understood, scientists believe that both genetic factors and environmental triggers are involved.

Children cannot outgrow insulin-dependent diabetes. Although there is no cure for diabetes, it can be controlled. Research has shown that maintaining good control of blood glucose levels can prevent or postpone some of the long-term complications of diabetes. Diabetes care is more flexible than it used to be. With good medical care and support from other children and adults, children with diabetes can lead healthy, active, fulfilled lives.

Type 1 diabetes CAN'T be prevented. Doctors can't even tell who will get it and who won't. Type 1 diabetes is not caused by a poor diet, obesity, or lack of exercise. Exercise and a good diet can help to better control type 1 diabetes, but they do not make it go away.

What can people with type 1 diabetes eat? Since the availability of rapid-acting insulin, people with type 1 diabetes can follow a normal, balanced diet. Insulin can be matched to a daily lifestyle, instead of the other way around. David can eat any kind of food, but we must keep track of what it is, the amount of carbohydrates and how much he is eating to make sure that he has enough insulin to match the carbohydrates eaten.

#### Some Statistics:

- As many as three million Americans may have type 1 diabetes.
- Each year, more than 15,000 children - 40 per day - are diagnosed with type 1 diabetes in the U.S.

We are grateful to have been able to share information that will make John and the other students feel more comfortable at school. We hope you will call us if you have any questions. Thank you!

Sincerely,  
Mary Smith, 713-808-9908

#### What Your Child Learned In Class

1. We can't catch diabetes. David didn't get diabetes from eating too much sugar.
2. We all have insulin in our bodies. It helps the food we eat give us energy.
3. People with diabetes don't have any insulin in their bodies.
4. David gets five-six shots of insulin every day. They barely hurt!
5. Throughout the day, David goes to the nurse's office to check his blood sugar levels. David uses a meter that tests a drop of his blood to tell if his blood sugar level is low, high or in range. David does this about ten times throughout each day.
6. Sometimes, especially after exercising, David's blood sugar level may be too low. John may need to have an extra snack or juice to help him have more energy.
7. David can eat any kind of food, but we must keep track of what it is, the amount of carbohydrates and how much he is eating, to make sure that he has enough insulin too.
8. Occasionally, John may need to drink lots of water. He drinks water when his blood sugar level is too high.
9. David wears a special bracelet that tells people he has type 1 diabetes.

## Diabetes In School Quiz

True or False?

1. \_\_\_\_\_ Type-one diabetes means that a person is not insulin dependent.
2. \_\_\_\_\_ A child with diabetes should have an IEP and 504 Plan.
3. \_\_\_\_\_ 105 is a blood sugar level in the normal range.
4. \_\_\_\_\_ When a child is having a low blood sugar the best thing to give them is juice.
5. \_\_\_\_\_ It is normal for a child with a high blood sugar to need to use the bathroom frequently.
6. \_\_\_\_\_ Glucagon is used when a person is having a severe low blood sugar.
7. \_\_\_\_\_ It is important for a person with diabetes to check their blood sugar often.
8. \_\_\_\_\_ Only teachers and school nurse should be involved in planning the 504 Plan.
9. \_\_\_\_\_ Coaches do not need to know the basics of diabetes.
10. \_\_\_\_\_ 304 is not a high blood sugar.

Key to True or False Quiz 1. F 2. F 3. T 4. T 5. T 6. T 7. T 8. F 9. F 10. F

## Case Study #1

William a twelve-year-old boy, recently diagnosed with diabetes, went to the nurse's office complaining of a backache. The nurse started to panic because she did not know what to do. The nurse called William's mother and demanded she come to school and handle the situation. His mother worked almost an hour away from the school. Over the phone, the mother had to calm down the nurse and explain to her what she needed to do to find out what was really wrong. He had a low blood sugar, the mother instructed the nurse to give him  $\frac{3}{4}$  of a regular coke and crackers.

Narration:

William a twelve-year-old boy, recently diagnosed with diabetes, went to the nurses office complaining of a backache. The nurse started to panic because she did not know what to do. The nurse called William's mother and demanded she come to school and handle the situation. His mother worked almost an hour away from the school. Over the phone, the mother had to calm down the nurse and explain to her what she needed to do to find out what was really wrong. He had a low blood sugar, the mother instructed the nurse to give him  $\frac{3}{4}$  of a regular coke and crackers.

This situation was an easy fix, but due to the lack of knowledge of the school nurse it was blown out of proportion. If the school nurse had waited for the mother William's blood sugar would have dropped even more. He could have ended up in the hospital.

## Case Study #2

Mrs. Harris has become increasingly annoyed by Annie one of her students. During her class Annie has needed to go the bathroom once and asked to go to the water fountain three times. Drinks are not allowed in class. Mrs. Harris views this a disruptive to her lesson when Annie asks to use the bathroom again and says, "No." This causes Annie to ask again ten minutes later. Mrs. Harris views this a more disruptive behavior and give her afterschool detention. This class is after lunch, and Annie has miscalculated her insulin dosage, which resulted in a high blood sugar. She wasn't trying to be disruptive.

Narration:

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disruptive. A 504 Plan could have helped Mrs. Harris understand what is going on and would have allowed Annie to leave the classroom without disrupting the lesson.

## Annotated Bibliography

Amillategui, B., Calle, J.R., Alvarez, M.A., Cardiel, M.A., & Barrio, R. (2007). Identifying the special needs of children with type 1 diabetes in the school setting. An overview of parents' perceptions. *Diabetes UK, Diabetic Medicine, 24*, 1073-1079.

The article highlights the growing population of children with diabetes, and that there is a lack of communication between the school and the parents. Through a self-reporting questionnaire, the study assessed the parent's perception of their child's management of diabetes at school and additional settings. The studies show the lack of knowledge schools have as well as how being in school affected a child's diabetes management with reports that blood glucose tests were modified because of lack of cooperation. The study also indicated that lack of cooperation might have been because school personnel felt "incapable or uncertain" about diabetes. This article reinforced that children with diabetes are becoming more prominent in schools, and it allowed school personnel to see what a parent is most concerned about. Also, what school personnel can do to help.

This article has been published in many peer-reviewed publications such as *Diabetic Medicine*, *Diabetes UK*, and *Journal of Complication*. The authors of the article are more than qualified to conduct this study; some are employed by the Spanish Diabetes Foundation or University Hospitals in Madrid, Spain.

Anonymous. (2005). School Safety: Hawaii, Kentucky, and Nevada are three states that recently made changes to ensure that school children with diabetes get glucagon when they need it. *Diabetes Forecast, 58.9*, 79-80.

This source is from an anonymous writer, but is still valid because of its publication in *Diabetes Forecast*, which is part of the American Diabetes Association (ADA). The ADA is at the forefront for advocating for those with diabetes in the United States.

In the article, it discusses the *Safe at School* campaign that is slowly being accepted throughout the United States. The campaign discusses three key components that are: if a child is applicable, they should be allowed to self-manage their diabetes, all school personnel must have basic knowledge, and a small group of staff should be trained for diabetes care. It also highlights specific parts of state legislation that should be passed.

on. One of the most important parts of the article is that it sheds some light on glucagon for emergencies. This is a very important part of diabetes management. Glucagon can be administered during a severe low blood sugar that has rendered a person in a seizure or unconsciousness. It can also be administered by people who are not part of the health care system. This will be helpful for a school leader to know about and possibly adapt certain policies at their school.

Bloom, Gary. (2004). Dear principal: The district office, school staff and community member have a huge impact on the efficacy of their principals. Here are some questions they should ask about what they demand from their principals as they consider ways to help principals succeed. *Leadership*, 33.3, 8-10.

The author of the article Gary Bloom has seen his share of schools. He has been not only a principal, but a superintendent as well. He is currently an associate director of the New Teacher Center at University of California Santa Cruz, Mr. Bloom has made it his life work to empower school leaders and educate them. This article is called Dear Principal, but is actually focusing more on district staff, school staff and the community surrounding the school. In the article, it discusses the struggle for a principal between their school responsibilities and their personal life. This struggle happens everyday for a principal, and the article decides to ask what does everyone else do for the principal? With working 60 hours a week and still not getting everything done, the principal can become lost in their job. The main role of a principal is instructional leadership, however they are mainly bogged down with managerial tasks. Are the central office, staff, and community helping to lighten the load? In the article many questions are asked toward the staff and community concerning their expectations as well as their role in the school, such as: “ before you take a minor problem or need to your principal do you ask yourself if someone else might be able to help?” With questions like this, the article can help a principal communicate their needs to their staff. It can also help district and school staff realize what they can do for their principal. The principals main role maybe instructional leadership, but with out his/her staff they would not be able to accomplish what they set out to achieve in their school.

This article will be helpful for my resource I am creating because I hope to give the principal tools and way to educate his/her staff on diabetes. With this article, the principal can learn to communicate better with the staff on what they can do to alleviate stressors. Hopefully this will help the school leader to install efficacy within the school setting that the staff are capable. Instructional leadership is the main role of principals this article emphasizes this.

Bunker, Katie. (2010). Diabetes in school: Plan ahead. *Diabetes Forecast*, 63, 66-67.

Katie Bunker is a highly talented freelance writer and associate editor at Diabetes Forecast Magazine, a magazine put out by the American Diabetes Association. The association is a leader in the community for knowledge, advocacy, and research for diabetes. While this article maybe short, it is practically a step by step for parents, teachers, and principals on how to handle diabetes in the classroom. In the article, it shares an anecdote about Shane Reynolds, a ten-year-old boy, who was struggling to manage his diabetes and schoolwork. Shane's mother worked with the American Diabetes Association as well as the school to implement a 504 Plan for Shane. The plan comes from the section 504 of the Rehabilitation Act of 1973, which states that discrimination against a student with a disability including diabetes is forbidden. The first step in implementing a plan is to get a DMMP or Diabetes Medical Management Plan from the health care provider that lays out the treatment schedule. Once the DMMP is received, the school and the family can work together to implement a 504 Plan. This article will contribute to my resource for the helpdesk because the anecdote shows how helpful a 504 Plan can be for a child. It also has a list of four items school staff and parents should consider putting into the 504 Plan. For instance specifying which school staff members will be involved in the child's diabetes management. This article will give school staff a starting point into producing a 504 Plan.

Fain, J.A. (2008). The law, school, and child with diabetes. *The Diabetes Educator*, 34.3, 369.

James A. Fain, the author, is not only a certified nurse as well as having a certification in diabetes management, but has a PhD. Fain has devoted his life to help those with diabetes and was able to have his article published in *The Diabetes Educator* a national peer reviewed source. *The Law, School, and Child with diabetes* is an article that clearly identifies what a child with diabetes really needs in the school setting. It also relieves confusion between the different plans a school can set in to place for a child.

Individuals with Disability Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 are the laws in place to protect the rights of children with disabilities. And the plans that can be set into place are the 504 Plan and an Individual Education Plan (IEP). A 504 Plan is to address medical issues such as diabetes, and an IEP is to address academic needs for a child. Many children with diabetes do not need an IEP. This article will be useful for my resource because it not only has a clear explanation of the law and plans, but also gives a few principles that may aid a school leader.

Nabors, L., Lehmkuhl, H., Christos, N., & Andreone, T.L. (2003). Children with diabetes: Perceptions of supports for self-management at school. *Journal of School Health*, 73(6), 216- 221.

This article is important for school leaders because it actually captures the perspective of the children about diabetes management at school. It even has a critical issues list stating what children are concerned about, who can help with things such as making supplies available for them, and how teachers and nurses can help. There were also, parent survey's done to get their opinion. The only issue is the sample of children was predominantly Caucasian; it would have been better to have a more diverse sample. The lead author Laura Nabors holds her PhD in clinical psychology and teaches at University of Cincinnati. She has many publications about how chronic illness can affect children and families. In this article, the main focus was to gather information qualitatively and quantitatively to address two aspects of diabetes management, which were: monitoring blood glucose levels and meal plans at school. The study wanted to assess the perceptions of children and adolescents about their school environment. This is a mixed methods study, qualitative measures were used to purposely get the opinion of young children. There were also, parent survey's done to get their opinion. What the study found was that there were core critical issues shared by the majority of students. These consist of teacher flexibility, hypoglycemic episodes, availability of supplies, and self-care. It was also shown that children felt education was lacking with teachers and coaches. In the article, there are many helpful elements for a school leader to consider implementing plans to address diabetes in their school.

## **Additional References**

American Diabetes Association. (1995-2012). American Diabetes Association. Retrieved from <http://www.diabetes.org/>

Photos by Lauren Holder and Amy Patrick