

- Good Nutrition Month
- Peanut Butter Lovers' Month
- National Diabetes Awareness Month
- Family Week

Caring for Children with Diabetes in Schools and Day Care

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It is very likely that every teacher or child care provider will have a child with diabetes in their care at some point in their career. Therefore, it is important to have an understanding of the condition as well as how to help the child manage their condition. Most of the children who have diabetes have Type 1 diabetes, although incidence of Type 2 diabetes among children is increasing. In this article, we will describe the differences between the two conditions and will focus on providing care for children with Type 1 diabetes.

General Information about Diabetes

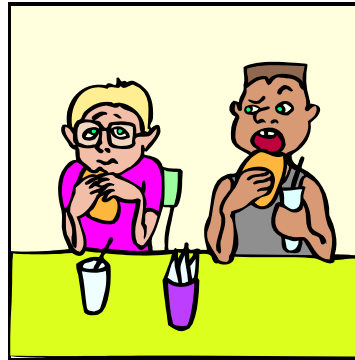
Type 1 diabetes is a condition that results from the body's inability to produce insulin. This is the same condition that used to be called juvenile diabetes or insulin-dependent diabetes. Insulin is a hormone that is involved in the uptake of glucose by many of the body's tissues. In the absence of insulin, glucose remains in the bloodstream and tissues are forced to attempt to function without this

source of fuel. People with this condition must obtain their insulin from an external source, either by injecting it or by using an insulin pump which injects the insulin. Diabetes is not contagious. It is managed with insulin injections, blood sugar monitoring, diet, and exercise.

Because the body has lost its ability to regulate blood

not leave a child with hypoglycemia alone because they can lose consciousness. After giving the child some quick sugar source, take the child to the nurse or clinic for additional treatment.

- Hyperglycemia may result from too much food, too little insulin, or too little exercise. Children with high blood sugar may act lethargic and sleepy and are often very thirsty and may need to urinate frequently. Hyperglycemia is treated by giving additional insulin and fluids. Children with diabetes need unrestricted access to water and the restroom.



Management of Diabetes

The treatment of diabetes involves monitoring blood sugar levels, insulin injections, a carefully managed diet and carefully managed exercise. Frequent checks of blood glucose levels allows for adjustments in insulin dosages and in diet to minimize incidences of hypoglycemia and hyperglycemia and to lower risk of long-term complications.

Frequent monitoring of blood glucose levels is an important component of controlling diabetes. Checking blood sugar levels involves pricking a finger with a lancet, placing a drop of blood on a special test strip, and inserting

glucose levels, people with Type 1 diabetes may develop hypoglycemia (low blood glucose levels) or hyperglycemia (high blood glucose levels), both of which require treatment.

- Hypoglycemia may result from too little food, too much insulin, or too much exercise. Symptoms of hypoglycemia include erratic behavior, sleepiness, extreme hunger, and shakiness. Low blood sugar needs immediate treatment with simple sugars (see the attached table for a list of some quick sugar sources). Do

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that test strip into a blood glucose meter. The glucometer will then provide a reading of the level of blood glucose. Some schools allow children to test their blood sugar in the classroom. If so, there should be a safe way to dispose of the lancet (such as a sharps container) and of the test strips.

Insulin must be injected because it is a protein and, if it were taken orally, would be digested by the digestive system. Most children with Type 1 diabetes inject insulin several times a day, depending on the type or types of insulin they are using. Most take an injection in the morning before breakfast and in the evening; many also take injections before lunch. Children may need to receive their pre-lunch insulin injection up to 30 minutes before they eat. Instead of injecting insulin, some children may use an insulin pump, which is about the size of a pager and is strapped to a belt or put into a pocket. A thin tube extends from the pump under the skin and insulin is continually pumped into the body; the child gives an additional amount of insulin to cover meals and snacks.

Children with diabetes also follow a carefully managed diet. These diets are tailored to the needs of the child and to the insulin schedule that the child is following. Deviations from this schedule may result in hypo- or hyper-glycemia. The child's caregivers should provide any special instructions and should also provide instructions on handling special events involving food. Many children with diabetes need morning and/or afternoon snacks,

which the caregivers should provide. It is important that the child consume those snacks in the specified time frame to avoid hypoglycemia.



Exercise is another important component of managing diabetes. The insulin dosage and meal

plans for children with diabetes will be calculated to allow for a basic amount of exercise. However, children may need to eat an additional amount of food before engaging in physical activity, particularly if it is scheduled right before a meal or is going to be more strenuous than usual. It is wise to have an additional source of quick sugar on hand whenever a child with diabetes is involved in physical activity.

Diabetes care in schools

Diabetes is legally considered to be a disability, and as such, it is illegal for public facilities to discriminate against people with diabetes. Children with diabetes must have an individualized assessment and the required accommodations should be provided within the usual school setting

with as little disruption as possible and with allowances for full participation in school activities. According to the American Diabetes Association, children should have an individualized Diabetes Health Care Plan that ad-

dresses the specific needs of the child and provides specific instructions for each of the following:

1. Blood glucose monitoring, including the frequency and circumstances requiring testing.
2. Insulin administration (if necessary), including doses/injection times prescribed for specific blood glucose values and the storage of insulin.
3. Meals and snacks, including food content, amounts, and timing.
4. Symptoms and treatment of hypoglycemia, including the administration of glucagons if recommended by the child's physician.
5. Symptoms and treatment of hyperglycemia.
6. Testing for ketones and appropriate actions to take for abnormal ketone levels, if requested by the child's physician.

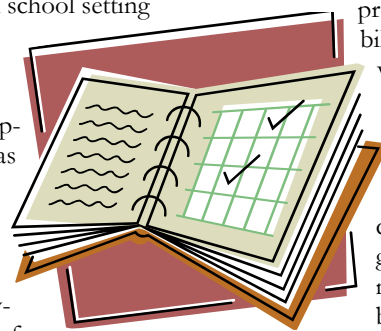
A sample Diabetes Health Care Plan is a part of the American Diabetes Association's position statement, "Care of Children with Diabetes in the School and Day Care Setting" which can be accessed at www.care.diabetesjournals.org/cgi/content/full/25/suppl_1/s122.

This position statement also provides guidance on responsibilities of the various care providers. They can be summarized as:

Parents/guardians

- All materials and equipment necessary for diabetes care tasks, including blood glucose testing, insulin administration and urine or blood ketone testing. A separate logbook should be kept at school to record test results and should be transmitted to the parent/guardian for review on a regular basis.

Children with diabetes need unrestricted access to water and the restroom.



Caring for Children with Diabetes (continued)

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- Supplies to treat hypoglycemia.
- Information about diabetes and performance of diabetes care tasks.
- Emergency phone numbers.
- Information about the child's meal/snack schedule.

School or day care provider

- Training about diabetes to all adults who provide education/care to the child, including how to perform diabetes care tasks.
- Immediate accessibility to treatment of hypoglycemia by a knowledgeable adult.
- If necessary, an adult and a back-up adult trained in insulin and glucagons administration.
- A location in the school to provide privacy during testing and insulin administration, if desired by the child and family, and permission for the child to check his or her blood glucose level and to take appropriate action to treat hypo-

glycemia wherever the child is.

- An adult and back-up adult who knows schedule or meals and snacks and works with the parents/guardians to coordinate daily and special activities with those of other students.
- Permission for the child to see school medical personnel upon request.
- Permission for the child to eat a snack anywhere if necessary to prevent hypoglycemia.
- Permission for miss school without consequences for medical appointments related to diabetes care.
- Permission for the child to use the restroom and have access to fluids as necessary.
- An appropriate location for insulin and/or glucagon storage.

Management of diabetes in children can seem like a daunting task. However, schools and day care providers working as part of the team caring for the child, will greatly improve the level of control the child has over diabetes, lessen

the likelihood of hypo- or hyperglycemia, and improve the child's overall academic and social progress.

Quick Sugar Resources for People with Hypoglycemia

Each of the following provides 10-15 grams of sugar

- Two glucose tablets or one tube of glucose gel (available from the child's physician)
- Four ounces of fruit juice
- ½ to 1 cup of milk
- ½ can of regular soda (not diet)
- ½ tube of cake icing

References:

Children with Diabetes. Information for Teachers. www.childrenwithdiabetes.com

American Diabetes Association. 2002. Position statement, "Care of Children with Diabetes in the School and Day Care Setting." *Diabetes Care*, 25:S122-S125. www.care.diabetesjournals.org/cgi/content/full/25/suppl_1/s122.

Children may need to eat an additional amount of food before engaging in physical activity.

Hearts N' Parks Community Mobilization Guide

Hearts N' Parks is a national. Community-based program supported by the National Heart, Lung, and Blood Institute (NHLBI) and the National Recreation and Park Association (NRPA). It is designed to help local agencies promote heart-healthy lifestyle changes among their residents. The objectives of Hearts N' Parks are to increase the number of children and adults who engage in heart-healthy behavior and to demonstrate the impact that community park and recreation programs can have on behavior. The long-term goal is to decrease the number of people with heart disease. Hearts N' Parks seeks to bring about these

changes in the following ways:

- Identifying target groups
- Creating heart-healthy activities and techniques
- Raising the level of awareness of Hearts N' Parks and its messages
- Making the most of existing community resources to extend the reach and effectiveness of Hearts N' Parks
- Conducting an evaluation to document the results of Hearts N' Parks efforts.

Hearts N' Parks is meant to be fun and flexible. And it's for everybody—young and old, active

and nonactive. The Hearts N' Parks Community Mobilization Guide provides the background and resources needed to implement the program. But each community can adapt the material to its own design, resources, and needs.

The guide may be borrowed from the Nutrition Resource and Information Center or may be obtained from the NHLBI's Hearts N' Parks web page (http://www.nhlbi.nih.gov/health/prof/heart/obesity/hrt_n_pk/index.htm). Other program information can be accessed from <http://www.heartsnparks.org>.

The Origin of Thanksgiving Food Traditions

Picture the traditional Thanksgiving dinner: a festive table set with many platters brimming with food. The centerpiece of the festive meal is the turkey, with stuffing and gravy on the side. This scene is not from history, but it emerges rather from a desire to remake history into our own vision.

Wild turkeys found in New England nearly four centuries ago certainly did not resemble the overstuffed fowl, cultivated for our dinner table, that we have come to recognize. Tough, resourceful, able to fly, and hard to catch, turkeys were not the first choice of either Native Americans or early colonial hunters. This creature was so tenacious that Benjamin Franklin suggested it be revered as our national symbol.

So if turkey was not the main course at the first harvest festival, which we have adapted and adopted over time as the model for Thanksgiving Dinner, then what was served? Edward Winslow's 17th century account details that "they went out and killed five deer" and mentions that "our governor sent four men on fowling" and that "they four, in one day, killed as much fowl as, with a little help beside, served the company almost a week." While it is possible that turkeys may have been killed, it is more likely that ducks or geese were the primary targets. In addition, the crops grown by both settler and Native American would have graced that early Thanksgiving dinner. Corn, squash, potatoes, yams, even wheat to make bread were in all probability shared and enjoyed. However, it is not likely that cranberries were evident. Since they grew in bogs and were often inaccessible, gathering them may have been

more effort that it was worth. Ironically, New England has become one of the principal locations for commercial farming of cranberries.

Foods Available to the Pilgrims for their 1621 Thanksgiving

- *Fish:* cod, bass, herring, shad, bluefish, and lots of eel.
- *Seafood:* clams, lobsters, mussels, and very small quantities of oysters.
- *Birds:* wild turkey, goose, duck, crane, swan, partridge, and other miscellaneous waterfowl; they were also known to have occasionally eaten eagles (which "tasted like mutton" according to Winslow in 1623).
- *Other Meat:* venison (deer), possibly some salt pork or chicken.
- *Grain:* wheat flour, Indian corn and corn meal; barley (mainly for beer-making).
- *Fruits:* raspberries, strawberries, grapes, plums, cherries, blueberries, gooseberries (these would have been dried, as none would have been in season).



- *Vegetables:* small quantity of peas, various squash (including pumpkins), beans.
- *Nuts:* walnuts, chestnuts, acorns, hickory nuts, peanuts.
- *Herbs And Seasonings:* onions, leeks, strawberry leaves, currants, sorrel, yar-

row, carvel, brooklime, liverwort, watercress, and flax; from England they brought seeds and probably planted radishes, lettuce, carrots, onions, and cabbage. Olive oil in small quantities may have been brought over, though the Pilgrims had to sell most of their oil and butter before sailing, in order to stay on budget.

- *Other:* maple syrup, honey, small quantities of Dutch cheese, and eggs.

Foods which likely did not appear on the first Thanksgiving menu

- *Ham:* The Pilgrims most likely did not have pigs with them.
- *Sweet Potatoes/Yams:* These had not yet been introduced to New England.
- *Corn on the cob:* Indian corn was only good for making cornmeal, not eating on the cob.
- *Popcorn:* Contrary to popular folklore, popcorn was not introduced at the 1621 Thanksgiving. Indian corn could only be half-popped, and this wouldn't have tasted very good.
- *Cranberry sauce:* Cranberries were available, but sugar was not.
- *Pumpkin Pie:* They probably made a pumpkin pudding of sorts, sweetened by honey or syrup, which would be like the filling of a pumpkin pie, but there would be no crust or whipped topping.

Sources:

www.thanksgiving-traditions.com

www.members.aol.com/calebj/mayflower.html

Indian corn was only good for making cornmeal, not eating on the cob.

Quick and Easy Dinners

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The average American spends less than 20 minutes preparing dinner, even on those nights when we cook. Some trend analysts predict that time spent preparing the evening meal will decrease to less than 10 minutes in the near future. Does that mean that home cooked meals are a thing of the past? An interesting study was recently reported in which a dietitian worked with a group of clients on preparing breakfast. At the beginning of the study, many said they didn't have time to fix breakfast at home and usually picked up breakfast at a fast food restaurant. They were asked to time the time it took for them to go through the drive through (from the time they pulled into the driveway until they pulled out). In class, they were timed while preparing a variety of breakfasts, such as breakfast burritos. In most instances, the time spent preparing the meal in class was less than the time spent picking up the meal at the fast food restaurant, not to mention less expensive and more nutritious.

Can the same concept be applied to dinner? Perhaps. The key to preparing dinner quickly and easily is planning. Spending a few minutes a week planning meals and maintaining a well-stocked kitchen can make preparing dinner a snap. Look at the circulars from the supermarkets, and plan your meals around sale meats and vegetables to save money. Also, take note of any items in your pantry that are running low that are on sale and add those to your list.

What is in a well-stocked kitchen? Here is a basic list that can be modified to suit your family's preferences.

Pantry

- condiments (mustard, salsa, soy sauce, syrup, honey, vinegars, oils, jellies, etc.)
- herbs and spices (for example, basil, cinnamon, chili powder, dillweed, garlic powder, seasoning blends, oregano, pepper, thyme)
- pasta
- rice
- potatoes
- canned foods (such as beans, tomatoes, pineapple, corn, tuna)

Refrigerator

- milk



- margarine or butter
- yogurt
- fruits
- vegetables (such as broccoli, celery, cucumbers, mushrooms, salad greens, squash)
- juices

Freezer

- ground beef
- chicken (both cooked and uncooked)
- onions
- peppers
- frozen yogurt
- fruits

- vegetables

Although pre-cut vegetables can save time, it can be very quick and easy to buy them whole and cut them up yourself. For example, a stalk of broccoli can be chopped into flowerets and stored in the refrigerator for several days. Onions, peppers, and parsley can be chopped in large quantities and frozen in ½ cup portions in zip-top bags for use later.

What do people who work in food do when they don't have time to cook? Some ideas from the test kitchen staff for *Cooking Light* magazine are:

- Sprinkle lemon juice and rosemary over boneless, skinless chicken breasts and broil or grill.
- Broil catfish fillets sprinkled with lemon juice and Cajun seasoning blend.
- Thread fish, shrimp, chicken or vegetables on skewers and grill or broil for kabobs (hint—use 2 skewers and the kabobs will be easier to turn)
- Top a baked potato with salsa, green onions, fat-free sour cream, and cheese
- Stir cooked onion, mushrooms, green peppers and fresh garlic into jarred pasta sauce and serve over cooked pasta
- Spread pizza or pasta sauce on individual pizza crusts and top with fresh vegetables, black beans, corn, roasted chile peppers or roasted garlic. Top with cheese and bake or broil until pizzas are thoroughly heated and cheese melts.
- Top steamed broccoli with lemon juice, flavored mustard, and melted margarine.

Spending a few minutes a week planning meals and maintaining a well-stocked kitchen can make preparing dinner a snap.

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Quick and Easy Dinners (continued)

- Add salsa and ground cumin to cooked whole kernel corn



- Add minced garlic to water when cooking instant mashed potatoes

Some other quick and easy meal ideas (that are also good for you) are:

- Fill tortillas with canned refried beans or black beans and salsa. Top with nonfat yogurt, chopped lettuce and tomatoes.
- Top tossed salads with kidney beans or garbanzo beans and cheese.

- Make a stir-fry with lean meat, seafood or poultry and add a couple of fresh vegetables.
- Pan-broil pork chops and deglaze the pan with lemon juice and white wine or chicken broth. Serve with steamed vegetables and a crusty bread.

References

Cooking Light. Low-fat Low-calorie Quick and Easy Cookbook. Oxmoor House Publishing.

Type 2 Diabetes in Children

M. Elizabeth Kunkel, PhD, RD, FADA

As many as 85% of children diagnosed with type 2 diabetes are overweight or obese.

Just a few years ago, type 2 diabetes was rarely seen in children. Some current estimates are that about 30-50 percent of all newly diagnosed cases of diabetes in children are type 2. American Indian youths have the highest prevalence of type 2 diabetes. For example, 5.9 % of Pima Indian adolescents have type 2 diabetes while about 0.7% of African American and white adolescents have the condition.

Type 2 diabetes, which used to be called maturity onset or noninsulin dependent diabetes, results from the body's inability to use insulin properly. It differs from type 1 diabetes in that the pancreas does produce insulin, but the body is resistant to using it. It has the same major symptom—higher than normal blood glucose levels. Risk factors for developing type 2 diabetes include obesity, family

history, and a sedentary lifestyle. The prevalence of obesity in adolescents has tripled in the past 20 years. According to the *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*, 13 % of children 6 to 11 years old and 14% of children 12 to 19 years old were overweight in 1999; in 2002, 20% of children were overweight or obese. As many as 85% of children diagnosed with type 2 diabetes are overweight or obese.



There is considerable debate over which children should be tested for type 2 diabetes and the best methods for treatment. However, the American Diabetes Association states that all children with type 2 diabetes should receive comprehensive self-management education. This education should include teaching self-monitoring of blood glucose, nutrition, and physical activity. Some children with type 2 diabetes may be

treated with diet and exercise modification; if successful, the child will continue normal linear growth while body weight will normalize. If diet and exercise treatment is not successful, children may need oral medications or insulin. The best type of diet for children with type 2 diabetes is balanced, individualized, and encourages development of healthy eating behaviors.

The long-term complications from diabetes are severe. Type 2 diabetes is the major cause of kidney failure, limb amputations, and new onset blindness in adults and is a major cause of heart disease and stroke. With an earlier onset of the condition, earlier onset of the complications is predicted. Children at risk for developing diabetes should be encouraged to normalize their body weight, engage in regular physical activity, and have their glucose tolerance checked as recommended by their physician.



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We're on the web! Check out the nutrition education resources available at the NIRC website.

<http://www.clemson.edu/NIRC/>

The NIRC offers information about food science and nutrition. Through email, users may request information and answers to specific questions. (Address queries to: eat4health@clermson.edu) The NIRC offers links to many other nutrition websites, making us a great place to start a search on any nutrition-related topic.

The food and human nutrition materials at NIRC consist of books, journals, and audiovisuals covering a broad range of topics from children's literature to technical nutrition information. NIRC provides direct lending services to teachers, dietitians, family and consumer scientists and other food, nutrition and health professionals.

For a free subscription to *Nourishing News*, delivered monthly via email in pdf format, email eat4health@clermson.edu, or fill out a subscription request form at <http://virtual.clemson.edu/groups/NIRC/teacher1.htm>.

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This Month's Recipe Feature Pumpkin Grits Pudding

The pumpkin was one of the first native foods adopted by European settlers. Early Southern pioneers dried the flesh to eat while traveling, cooked slabs of the squash next to the hearth to be served with butter (when it was available), and was mixed with dried corn. This recipe is a modification of this latter pairing and makes an excellent side dish for Thanksgiving dinner or any autumn meal.

Ingredients

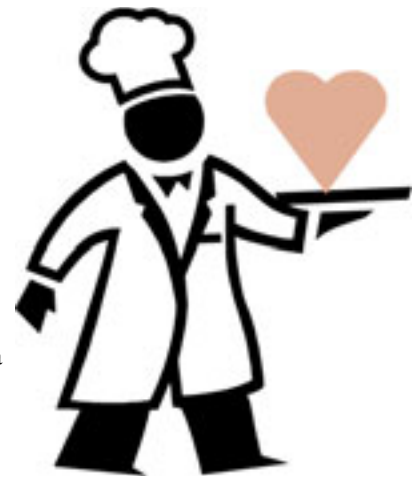
- 4 cups water
- 1 teaspoon salt
- 1 cup grits (not instant grits)
- 1 cup skim milk
- 2 tablespoons butter
- 1 cup canned pumpkin puree
- 1 teaspoon ginger
- 1 teaspoon pumpkin pie spice (or ½ teaspoon cinnamon and ½ teaspoon nutmeg)

Directions

1. Bring water to a boil and slow-

2. Continue to cook for another 5 minutes, stirring and adding the milk a little at a time.
3. Taste the grits. If they are softened and creamy, proceed to the next step, otherwise continue to simmer on low until they become tender.
4. Stir in the butter until it is

ing pour in grits while stirring. Cook at a low simmer stirring frequently for 25 minutes, until the water is absorbed and the grits become creamy.



5. Stir in the pumpkin puree and the spices.
6. When the mixture is blended and steaming, remove from heat and cover it.
7. Allow to sit for 15 minutes, then serve immediately.

Adapted from:

Lundy, Ronni. 1999. *Butter Beans to Blackberries: Recipes from the Southern Garden*.