

**Life with Diabetes -
Lacie the Lizard's Adventure**
by Dana Sheppard



This book addresses many questions children have about diabetes and using an insulin pump. It is educational and entertaining for both parents and kids.

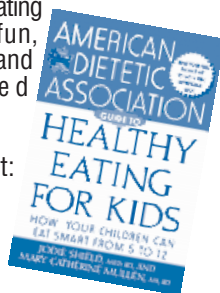
Available online at
<http://www.crittersinc.com>

**Guide to Healthy Eating for Kids:
How Your Children Can Eat
Smart from 5 to 12**

by Jodie Shield, MEd, RD
and Mary C. Mullen, MS, RD

This book contains guidelines and skills set by the American Dietetic Association. Topics include nutritional education, turning eating dilemmas into fun, breakfast skipping, and health-oriented recipes.

Purchase online at:
www.eatright.org



Type 2 Diabetes in Children: An Emerging Health Problem for Diabetes Educators

By: Linda Zeitzoff RN, CPNP, CDE
Baltimore, Maryland



Currently, the CDC estimates about 150,000 children under the age of 20 have diabetes.

Historically, over 98% of diabetes cases in this age group were type 1. However, with the rise in the prevalence of obesity in today's society, type 2 diabetes has become an emerging health problem in children. The disease, which used to be classified as "adult onset diabetes", is steadily increasing in the pediatric population. Recent case reports indicate that type 2 diabetes accounts for 8%-45% of all new cases referred to pediatric centers.

Type 2 diabetes is found most often in African-American, Hispanic and Native American populations. It is more prevalent in females than males. In children, the mean age at diagnosis is between 12 and 16 years, sometime during the usual pubertal stage of adolescence. Many children have a family history of the disease in first- or second-degree relatives.

Type 2 diabetes develops in response to insulin resistance compared to the insulin deficiency seen with type 1. The classic symptoms: polyuria, polydipsia and polyphagia may be present, but are often mild. There may be little to no weight loss. Frequently, the symptoms may go unnoticed with diagnosis delayed until glycosuria or hyperglycemia are found on routine urinalysis or as a result of lab studies performed to evaluate some other clinical problem.

If glucose toxicity is severe, children with type 2 diabetes may present with a clinical picture similar to that of type 1. Up to one quarter of children subsequently classified as having type 2 diabetes present with ketoacidosis. Ketosis may be found in up to 33% of children at the time of diagnosis. At times, the distinction between type 1 and type 2 diabetes is not possible until after resolution of the acute stage or months later when insulin requirements decline beyond those of the honeymoon phase.

On physical exam, as many as 60% to 90% of children with type 2 diabetes have acanthosis nigricans, a velvety hyperpigmented appearance to the skin most commonly noted on the neck, axillae, elbows, knees, groin and abdomen. On occasion, parents report they have made numerous attempts to wash the area clean without success. Acanthosis nigricans is most prevalent in African-American and Hispanic children. A second clinical finding common in children with type 2 diabetes is PCOS, Polycystic Ovarian Syndrome. This condition is characterized by hyperandrogenism and chronic anovulation not caused by a specific disease of the ovaries, adrenals and pituitary gland.



The WebMaster

Website Options For Inquiring Minds

**American Diabetes Association
Youth Zone Website**

Check out the ADA's Youth Zone website for kids with type 1 and type 2 diabetes. In addition to educational content about exercise, food and diabetes care, the site also includes a section called "Fun & Games". This section offers several free interactive games for kids including *Food Fight*, a game that helps kids understand the effects of low blood sugar. Check out the Youth Zone at www.diabetes.org



Mark Your Calendar!

Upcoming Meetings

American Association of Diabetes Educators 31st Annual Meeting

◆ August 11-14, 2004
Indianapolis, IN

Visit Paddock's Booth #926

Staying in the loop...



NEW EDUCATIONAL RESOURCES FOR MANAGING DIABETES

The National Diabetes Education Program (NDEP), an entity jointly sponsored by the National Institutes of Health and the Centers for Disease Control and Prevention are offering free educational resources about diabetes.

◆ *Tips for Kids with Type 2 Diabetes.* This includes four handouts explaining what diabetes is, being active, eating healthy and staying at a healthy weight.

◆ *Helping the Student with Diabetes to Succeed: A Guide for School Personnel.* This manual educates school personnel about diabetes and how to have a supportive environment and equal access to educational opportunities for students with diabetes.

Both resources can be downloaded at www.ndep.nih.gov/diabetes/youth/youth.htm or ordered by calling the NDEP at 800-438-5383. Both resources are free.



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Obesity is the most common clinical finding in children with type 2 diabetes. Two factors, sedentary lifestyle and poor eating habits may lead to the development of obesity. On many occasions, parents are working when children come home from school resulting in a lack of supervision and guidance with activity and food selection. Television, videogames and computers may distract children for hours, subsequently limiting their time for physical activity.

Many children are also responsible for selecting or preparing their own snacks or after-school meals. Fast food restaurants are inexpensive and convenient. Today, fast food chains promote the super sized meal, adding an abundance of fat and calories to an already unhealthy food choice. Children also have easy access to purchase junk food in convenience stores and vending machines. In many schools, vending machines provide children with an unsupervised opportunity to purchase sugary soft drinks as well as candy, cakes, cookies and chips.

Initial attempts at managing type 2 diabetes are geared toward weight loss. Children and their parents should be counseled regarding healthy eating habits with a focus on low fat food selection, portion size control, healthy snacking and elimination of sugary beverages and refined sugars from the diet. The education process should involve the whole family and take into account cultural practices as well as be sensitive to the family's financial resources.

An exercise program should be established in combination with diet modification. Exercise recommendations should include 20-30 minutes of activity a minimum of 5 times a week. Children should be encouraged to participate in gym class, after school sports and use stairs when available instead of riding elevators. Management of type 2 diabetes using exercise in combination with diet modifications has only been successful in 10% of adults and, therefore, may not be effective in children. If a 3-4 month trial of weight loss is unsuccessful, oral medications may be used. Currently, there is only one oral hypoglycemic medication approved by the FDA for use in children. Like adults, children should be monitored closely for side effects to the medication. If oral medications are ineffective in achieving target HbA1C levels, subcutaneous insulin is warranted.

Summary

Billions of healthcare dollars are spent each year on diabetes and obesity related complications. Preventing or delaying the onset of diabetes, relies on implementation of screening, prevention and public education programs. The American Diabetes Association recommends testing for type 2 diabetes in children who meet the following criteria: those who are overweight with a BMI > 85th percentile for age and sex, or weight > 120% of ideal for height, plus any two risk factors. These risk factors include family history, ethnicity and conditions associated with insulin resistance (acanthosis nigricans, PCOS, hypertension, dyslipidemia). Testing of fasting glucose levels is recommended every 2 years starting at the age of 10 or at the onset of puberty, whichever occurs first.

Public awareness and prevention programs should be geared toward schools, religious centers and community groups and take into account barriers to healthcare such as lack of transportation, inadequate healthcare coverage, financial resources, denial and absence of motivation and family support. Nurse offices within the school are ideal for screening and coordinating education since they may capture youth who are high risk and have not been identified by the primary physician due to some of these barriers. Incorporating information regarding exercise and proper nutrition into the school curriculum and after school activities including children's television programming are a valuable way to target the at-risk population and may ultimately decrease morbidity and save healthcare dollars in the future.

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