Cover Sheet for Submitting
Convention Resolutions

This cover sheet must accompany any resolution proposed for action by delegates at the National PTA Convention. A resolution from a local PTA, council, or organized district becomes a state resolution if it has been adopted at the state convention. The state PTA should then be the group that submits it to National PTA.

All resolutions must be RECEIVED in the National PTA office BY DECEMBER 15, prior to the year of convention in which the resolutions will be voted upon, if accepted. NO FACSIMILE (FAX) WILL BE ACCEPTED.

Resolution title: Recognition and Care of School Aged children with Diabetes

Purpose of resolution: Recognition and Care of School Aged children with Diabetes

Required action from National PTA if accepted: Educate local units and lobby for legislation.

Synopsis of the purpose of the resolutuion **(No more than 150 words. Use separate sheet.)**:
See page 3. Summary Attached.

Name of submitting group: ALASKA PTA

Local ➔ Council ➔ District/Region ➔ (State ➔) National ➔

Please give name of person to contact if National PTA's Resolutions Committee wishes to get in touch with submitting group.

Name Dee Parsons

Address [redacted]

City [redacted] State AK ZIP [redacted]

Phone # ([redacted])

Deana Parsons
Signature of submitting group president

11/28/2005
Date

If the submitting group is a local PTA, council, or region/district, this section must be completed by the state PTA.

Is the resolution being submitted by a PTA constituent body in good standing? (Yes ➔) No ➔

Deana Parsons
Signature of state president

11/28/2005
Date

If the submitting group is a national committee or work group, signature of the chair is needed.

Signature of national committee chair

Date

National PTA Resolution

Recognition and Care of School Age Children with Diabetes

November 18, 2005
Alaska PTA

Dawn Johnson-Wenger
Bylaws Chair
[ADDRESS REDACTED]
[ADDRESS REDACTED]
[PHONE NUMBER REDACTED]
Email: akcoho@yahoo.com

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Recognition and Care of School Age Children with Diabetes

Whereas: The National Institute of Diabetes and Digestive and Kidney Diseases states that diabetes is one of the most common chronic diseases in school-age children, affecting 176,500 young people in the United States in 2005; about one in every 400 to 600 people under the age of 20 has type 1 diabetes; and

Whereas: The American Diabetes Association states that in 2002 Diabetes was the fifth deadliest disease in the Unites States; and

Whereas: The Center for Disease Control and Prevention states that each year, more than 13,000 youths are diagnosed with type 1 diabetes; and

Whereas: A growing number of children and adolescents are developing type 2 diabetes - a form of diabetes that is generally diagnosed among adults; and

Whereas: Many schools do not have a full time nurse or licensed healthcare professional available on-site to handle medical emergencies, and nursing duties are often times performed by other school personnel; therefore, be it

Resolved: That National PTA and its constituent organizations urge that all school personnel receive general training on diabetes; and be it further

Resolved: That National PTA and its constituent organization urge that at least two staff members per school obtain specific training on diabetes care, diabetic emergency procedures, and in identification and treatment of symptoms of hyperglycemia and hypoglycemia as allowed by individual state statues and licensures.

Summary: Diabetes is one of the most chronic diseases in school-aged children, and takes the life of one American every three minutes. Currently only six states have laws in place for the care of diabetic children in schools, and there is no uniform national standard for the maximum number of students under the care of a school nurse. By providing training for at least two school staff employees, we can be assured those children with diabetes are being cared for at all times, even in schools without a school nurse present. As the occurrence of diabetes in our youth continues to rise we too must rise to meet their needs.

Helping the Student with Diabetes Succeed ~ A Guide for School Personnel

National Diabetes Education Program, (June 2003), Online, http://www.ndep.nih.gov/diabetes/pubs/Youth_NDEPSchoolGuide.pdf, Introduction pg. 1

(5-More than 17 million Americans have diabetes. In your work with children and youth in the school setting, it is likely that you already have, or will have, a student with diabetes in your care**.)(1-**Diabetes is one of the most common chronic diseases in school-aged children, affecting about 151,000 young people in the United States, or about 1 in every 400 to 500 young people under 20 years of age**.)(3-**Each year, more than 13,000 youths are diagnosed with type 1 diabetes**.)(4**-In addition, health care providers are finding more and more children and teens with type 2 diabetes, even though the disease is usually diagnosed in adults over age 40.**)**

Diabetes is a serious chronic disease that impairs the body's ability to use food for energy. It is the sixth-leading cause of death by disease in the United States. Long-term complications include heart disease, stroke, blindness, kidney disease, and amputation of the foot or leg. Although there is no cure, the disease can be managed and complications delayed or prevented.

Diabetes must be managed 24 hours a day, 7 days a week.

(5-For students with type 1 diabetes, and for some with type 2 diabetes, that means careful monitoring of their blood glucose (sugar) levels throughout the school day and administering multiple doses of insulin therapy—now prescribed for most young people with diabetes. As a result, the school health team, which includes the school nurse, teachers, office personnel, and other school staff members, plays an important role in helping students manage their diabetes.**)**

Effective diabetes management is crucial

- for the immediate safety of students with diabetes
- for the long-term health of students with diabetes
- to ensure that students with diabetes are ready to learn and to participate fully in school activities and
- to minimize the possibility that diabetes-related emergencies will disrupt classroom activities.

Diabetes Dateline –National Diabetes Education Program News

National Diabetes Information Clearinghouse, (Winter 2002-2003), Online, http://diabetes.niddk.nih.gov/about/dateline/wint03/14.htm

(1-Diabetes is one of the most common chronic diseases in school-aged children, affecting about 151,000 young people in the United States, or about one in every 400 to 500 people under 20 years of age**.)(3**-Each year, more than 13,000 youths are diagnosed with type 1 diabetes, formerly called juvenile or insulin-dependent diabetes.**)**

(4-In recent years, health care providers have found increasing numbers of children and teens with type 2 diabetes, a disease usually diagnosed in adults over age 40.**)** Although there are no national prevalence data, some clinics report that one-third to one-half of all new cases of diabetes in children are now type 2. American Indian, African American, and Hispanic/Latino young people who are obese and have a family history of type 2 diabetes are at especially high risk for the disease. **(4-**With 13 percent of U.S. children either overweight or obese--more than double the number two decades ago--type 2 diabetes is emerging as a major public health threat.**)**

Early detection of type 1 or type 2 diabetes in children is as important as it is with adults, given the serious complications associated with the disease, such as cardiovascular disease, nephropathy, neuropathy, and retinopathy. The most common symptoms of type 1 and type 2 diabetes in children include ongoing fatigue, increased thirst, frequent urination, recent weight loss, blurred vision, frequent infections, and slow healing of wounds or sores. However, as with adults, some children with type 2 diabetes may not have symptoms. Health care providers should consider testing children for type 2 diabetes who have additional risk factors. According to the American Diabetes Association Consensus Statement "Type 2 Diabetes in Children and Adolescents" (*Diabetes Care* 23:381-389, 2000), testing is recommended for overweight children who have any two of the following risk factors:

- a family history of type 2 diabetes in first- and second-degree relatives
- being of Hispanic/Latino, African American, American Indian, Asian American, or Pacific Islander descent
- the presence of physical signs of insulin resistance, such as acanthosis nigricans, or having conditions associated with insulin resistance, such as polycystic ovary syndrome

Once diabetes is diagnosed, health care providers need to work with the children and their families to develop an individualized diabetes care plan for managing blood glucose levels within a target range. The care plan should include the child's target blood glucose goals, meal and snack plan, recommended physical activities, blood glucose monitoring, and prescribed medications.

A diagnosis of diabetes is stressful not only for the child, but also for the family. Children face unique physical and psychosocial issues in dealing with diabetes 24 hours a day, 7 days a week, especially in making the lifestyle changes that are required for effective diabetes management. Primary care providers can help the family to identify resources such as mental health counseling, diabetes education classes, financial and social services, and other community resources.

(5-Working with representatives from the leading diabetes, pediatric, primary care, nutrition, and education organizations, the National Diabetes Education Program has developed online web-based resources to inform health care professionals, parents, and schools about the onset and management of diabetes in children.**)**

National Diabetes Fact Sheet ~ National Estimates on Diabetes

National Center for Chronic Disease Prevention and Health Promotion, (May 2004), Online, http://www.cdc.gov/diabetes/pubs/estimates.htm#prev2

Methods

The data in this fact sheet were derived from various surveys of the Centers for Disease Control and Prevention (CDC)—the National Health Interview Survey (NHIS), the National Health and Nutrition Examination Surveys (NHANES III and NHANES 1999-2000), the National Hospital Discharge Survey, and surveys conducted through the Behavioral Risk Factor Surveillance System. Other data sources include CDC's National Vital Statistics System, the outpatient database of the Indian Health Service (IHS), the U.S. Renal Data System of the National Institutes of Health (NIH), and published studies. Many of the estimates were calculated from these data sources by CDC and NIH staff.

Estimates of the total number of people with diabetes and the prevalence of diabetes (both diagnosed and undiagnosed) per 100 population are model-based estimates calculated from NHIS data, NHANES data, and population estimates. Age-race-sex-specific diabetes prevalence estimates from the 1999-2001 NHIS and the 2002 outpatient database of the IHS were applied to 2002 census estimates to calculate the number of diagnosed cases of diabetes. The number of persons with undiagnosed diabetes was calculated by applying age-specific estimates from NHANES 1999-2000 to 2002 census estimates. Total prevalence was calculated based on the number of people with both diagnosed and undiagnosed diabetes.

The summary estimates reported in this fact sheet have some variability due to the limits of the measurements and the estimation procedures. However, it is the consensus opinion of the participating organizations that they are the best current estimates of the burden of diabetes. More detail on the data sources, references, and methods are available at http://www.cdc.gov/diabetes/pubs/factsheet.htm.

Total prevalence of diabetes in the United States, all ages, 2002

Total: 18.2 million people — 6.3% of the population — have diabetes.
Diagnosed: 13.0 million people
Undiagnosed: 5.2 million people

(1-Prevalence of diagnosed diabetes among people under 20 years of age, United States, 2002)

- About 206,000 people under 20 years of age have diabetes. This represents 0.25% of all people in this age group.
- **(1-**Approximately one in every 400 to 500 children and adolescents has type 1 diabetes.**)**
- **(4-**Although type 2 diabetes is a problem among youth, nationally representative data to monitor diabetes trends among youth are not available. Clinic-based reports and regional studies indicate that type 2 diabetes is becoming more common among children and adolescents, particularly in American Indians, African Americans, and Hispanic/Latinos.**)**

Total prevalence of diabetes among people aged 20 years or older, United States, 2002

- **Age 20 years or older:** 18.0 million; 8.7% of all people in this age group have diabetes.
- **Age 60 years or older:** 8.6 million; 18.3% of all people in this age group have diabetes.
- **Men:** 8.7 million; 8.7% of all men aged 20 years or older have diabetes.
- **Women:** 9.3 million; 8.7% of all women aged 20 years or older have diabetes.

National Diabetes Fact Sheet ~ National Estimates on Diabetes (cont.)

National Center for Chronic Disease Prevention and Health Promotion, (May 2004), Online, http://www.cdc.gov/diabetes/pubs/estimates.htm#prev2

Total prevalence of diabetes by race/ethnicity among people aged 20 years or older, United States, 2002

Non-Hispanic whites: 12.5 million; 8.4% of all non-Hispanic whites aged twenty years or older have diabetes.

Non-Hispanic blacks: 2.7 million; 11.4% of all non-Hispanic blacks aged twenty years or older have diabetes. On average, non-Hispanic blacks are 1.6 times as likely to have diabetes than non-Hispanic whites of similar age.

Hispanic/Latino Americans: 2.0 million; 8.2% of all Hispanic/Latino Americans aged twenty years or older have diabetes. On average, Hispanic/Latino Americans are 1.5 times more likely to have diabetes than non-Hispanic whites of similar age. Mexican Americans, the largest Hispanic/Latino subgroup, are over twice as likely to have diabetes as non-Hispanic whites of similar age. Similarly, residents of Puerto Rico are 1.8 times more likely to have diagnosed diabetes than U.S. non-Hispanic whites. Sufficient data are not available to derive more specific current estimates for other Hispanic/Latino groups.

American Indians and Alaska Natives who receive care from the Indian Health Service (IHS): 110,814; 14.9% of American Indians and Alaska Natives aged 20 years or older and receiving care from IHS have diabetes. At the regional level, diabetes is least common among Alaska Natives (8.2%) and most common among American Indians in the southeastern United States (27.8%) and southern Arizona (27.8%). On average, American Indians and Alaska Natives are 2.3 times as likely to have diabetes as non-Hispanic whites of similar age.

Asian Americans and Native Hawaiian or other Pacific Islanders: In 2002, Native Hawaiians and Japanese and Filipino residents of Hawaii aged twenty years or older were approximately 2 times as likely to have diagnosed diabetes as white residents of Hawaii of similar age. Prevalence data for diabetes among other Pacific Islanders or Asian Americans are limited, but some groups within these populations are at increased risk for diabetes.

Incidence of diabetes, United States, 2002

New cases diagnosed per year: 1.3 million people aged 20 years or older.

Deaths among people with diabetes, United States, 2000

- Diabetes was the sixth leading cause of death listed on U.S. death certificates in 2000. This ranking is based on the 69,301 death certificates in which diabetes was listed as the underlying cause of death. Altogether, diabetes contributed to 213,062 deaths.
- Diabetes is likely to be underreported as a cause of death. Studies have found that only about 35% to 40% of decedents with diabetes have diabetes listed anywhere on the death certificate and only about 10% to 15% have it listed as the underlying cause of death.
- Overall, the risk for death among people with diabetes is about 2 times that of people without diabetes.

Complications of diabetes in the United States

Heart disease and stroke

- Heart disease is the leading cause of diabetes-related deaths. Adults with diabetes have heart disease death rates about 2 to 4 times higher than adults without diabetes.
- The risk for stroke is 2 to 4 times higher among people with diabetes.
- About 65% of deaths among people with diabetes are due to heart disease and stroke.

National Diabetes Fact Sheet ~ National Estimates on Diabetes (cont.)

National Center for Chronic Disease Prevention and Health Promotion, (May 2004), Online, http://www.cdc.gov/diabetes/pubs/estimates.htm#prev2

High blood pressure

- About 73% of adults with diabetes have blood pressure greater than or equal to 130/80 mm Hg or use prescription medications for hypertension.

Blindness

- Diabetes is the leading cause of new cases of blindness among adults aged 20-74 years.
- Diabetic retinopathy causes 12,000 to 24,000 new cases of blindness each year.

Kidney disease

- Diabetes is the leading cause of end-stage renal disease, accounting for 44 percent of new cases.
- In 2001, 42,813 people with diabetes began treatment for end-stage renal disease.
- In 2001, a total of 142,963 people with end-stage renal disease due to diabetes were living on chronic dialysis or with a kidney transplant.

Nervous system disease

- About 60% to 70% of people with diabetes have mild to severe forms of nervous system damage. The results of such damage include impaired sensation or pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, and other nerve problems.
- Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations.

Amputations

- More than 60% of nontraumatic lower-limb amputations occur among people with diabetes.
- In 2000-2001, about 82,000 nontraumatic lower-limb amputations were performed annually among people with diabetes.

Dental disease

- Periodontal (gum) disease is more common among people with diabetes. Among young adults, those with diabetes have about twice the risk of those without diabetes.
- Almost one-third of people with diabetes have severe periodontal diseases with loss of attachment of the gums to the teeth measuring 5 millimeters or more.

Complications of pregnancy

- Poorly controlled diabetes before conception and during the first trimester of pregnancy can cause major birth defects in 5% to 10% of pregnancies and spontaneous abortions in 15% to 20% of pregnancies.
- Poorly controlled diabetes during the second and third trimesters of pregnancy can result in excessively large babies, posing a risk to the mother and the child.

Can Exercise Reduce the Risk of Developing Diabetes?

Diabetes Watch, December 2002, Online, http://www.aventis.net/main/0,1003,EN-US-34069-52505--,00.html

(2-According to the American Diabetes Association (ADA) and the Centers for Disease Control and Prevention (CDC), about 17 million Americans or 6.2 percent of the United States' population have diabetes, making it the 5th deadliest disease in the United States**.)** With this high incidence of diabetes, it's no surprise that many people are asking how this condition may be delayed or prevented.

There are currently no known methods to prevent the onset of type 1 diabetes. Only a small percentage of those diagnosed with diabetes are diagnosed with type 1. On the other hand, type 2 diabetes accounts for about 90-95 percent of those diagnosed with the disease. According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), people at a high risk for type 2 diabetes may greatly lower their chances of developing diabetes with lifestyle changes in diet and exercise. **(4-**The ADA asserts that "type 2 diabetes is nearing epidemic proportions, due to the increasing number of older Americans as well as a greater prevalence of obesity and sedentary lifestyles.**")** While we can't stop the aging process, fortunately diet and exercise are under our personal control.

A study known as the Diabetes Prevention Program (DPP) released important findings concerning the risks of developing type 2 diabetes. DPP was the first major clinical trial to show that people at high risk for type 2 diabetes can reduce the risk of developing the disease. By making lifestyle changes in diet and exercise practices, and subsequently losing weight, participants in the study reduced their risk of getting the disease by 58 percent.

The DPP participants assigned to the intensive lifestyle changes group maintained a low-fat diet in addition to physical activity for 150 minutes per week. On average, this group sustained about a 5 percent reduction of body weight through the duration of the study (3 years). While the researchers admitted they didn't know how long these lifestyle changes would delay the onset of diabetes, they hope to maintain contact with the study's participants in order to learn of long-term results.

While most of us are aware of the positive effects of exercise on managing or losing weight, physical activity also benefits people with diabetes in a number of other ways. According to the President's Council on Physical Fitness and Sports (PCPFS), exercise lowers blood sugar levels and helps the body make better use of its food supply. Exercise also improves blood flow through small blood vessels, increases the efficiency of the heart and may aid in improving the work of insulin.

Moderate exercise includes activities such as brisk walking, yard work and gardening, cycling, active housework and golf. Exercise is beneficial even when accumulated in 10-minute sessions that add up to 30 minutes a day. Before beginning any new exercise program, you should always check with your healthcare provider and learn how to manage your diabetes in conjunction with physical activity. You also should have your blood sugar levels under control before beginning a program. The PCPFS reminds us that exercise must be performed several times a week to be effective against diabetes.

Diabetes Statistics for Youth

American Diabetes Association, (2003) Online, http://www.diabetes.org/diabetes-statistics/children.jsp

Diabetes is a chronic disease that has no cure. **(2-**It is the fifth-deadliest disease in the United States.**)** This year, more than 213,000 will die from diabetes and its related complications. The total annual economic cost of diabetes in 2002 was estimated to be $132 billion, or one out of every 10 health care dollars spent in the United States.

With so many people affected by diabetes, the American Diabetes Association has compiled statistics on the impact of diabetes and its complications.

Type 1 diabetes in Youth

- The risk of developing type 1 diabetes is higher than virtually all other severe chronic diseases of childhood.
- Peak incidence occurs during puberty, around 10 to 12 years of age in girls and 12 to 14 years of age in boys.
- Type 1 diabetes tends to run in families. Brothers and sisters of children with type 1 diabetes have about a 10% chance of developing the disease by age 50.
- The identical twin of a person with type 1 diabetes has a 25-50% higher chance of developing type 1 diabetes than a child in an unaffected family.
- There is a higher incidence of type 1 diabetes in Caucasians than in other racial groups.
- The symptoms of type 1 diabetes can mimic the flu in children.

Type 2 diabetes in Youth

Type 2 diabetes is a metabolic disorder resulting from the body's inability to make enough or properly use insulin. **(4-**A growing number of children and adolescents are developing type 2 diabetes - a form of diabetes that is generally diagnosed among adults.**)** Type 2 diabetes commonly occurs in children who are:

- Overweight: As many as 80% of youth may be overweight at the time of diagnosis.
- Older than 10 years of age and are in middle to late puberty; but cases of type 2 diabetes in children as young as four years old have been documented.
- Have a family history of type 2 diabetes.
- A member of a certain racial/ethnic group (African American, Hispanic/Latino and Native American descent).
- **(4-**As the U.S. population becomes increasingly overweight, researchers expect type 2 diabetes to appear more frequently in younger, pre-pubescent children.**)**
- **(4-**Since type 2 diabetes in children and adolescents is a relatively new phenomenon, accurate statistics regarding the number of cases have not been generated. However, recent reports indicate that 8-45% of children with newly-diagnosed diabetes have type 2 diabetes.**)**

What are the complications of diabetes?

The complications of diabetes include heart disease, stroke, vision loss/blindness, amputation and kidney disease.

Diabetes Statistics for Youth (cont.)

American Diabetes Association, (2003) Online, http://www.diabetes.org/diabetes-statistics/children.jsp

- **Cardiovascular disease** caused by atherosclerosis (excess buildup on the inner wall of a large blood vessel, restricting the flow of blood) accounts for approximately 25% of deaths among patients with onset of diabetes before 20 years of age.
- **Blindness** due to diabetic retinopathy. Diabetic retinopathy is a more important cause of visual impairment in younger-onset people than in older-onset people. Males with younger-onset diabetes develop retinopathy more rapidly than females with younger-onset diabetes.
- **Kidney disease** due to diabetic nephropathy. Ten to 21% of all people with diabetes develop kidney disease. Diabetic nephropathy is the leading cause of end-stage renal disease (ESRD, or kidney failure), accounting for 43% of new cases. ESRD requires the patient to undergo dialysis or kidney transplantation in order to live. In people with type 1 diabetes who develop proteinuria (protein in the urine), ESRD or death usually follows after about 5-10 years.
- **Diabetic ketoacidosis** (DKA) is one of the most serious outcomes of poorly controlled diabetes, and primarily occurs in type 1 individuals. DKA is marked by high blood glucose levels along with ketones in the urine. DKA is responsible for about 10% of diabetes-related deaths in individuals with diabetes under age 45.

Diabetes: The Silent Killer Is It Stalking You?

Newsweek Magazine, (Spring, 2002)Online,
http://www.washingtonpost.com/wp-adv/newsweek/diabetes_article1.html

(2-By the end of this year, an additional 1 million Americans over the age of 20 will get some alarming news: diabetes, the nation's fifth deadliest disease, has struck.**)**

By the time these people are diagnosed, the illness may have already begun silently creeping down its path of destruction. Diabetes has a way of sneaking up upon people gradually, often with very few outward symptoms-or sometimes none at all. But even in its early, undiagnosed stages, it can cause serious harm: nerve damage, kidney and eye diseases, and even heart disease may begin to develop unnoticed.

So gradual are these changes that nearly 6 million people living in the United States have no idea that they are among the 17 million Americans believed to have diabetes. Every day, 2,700 more people learn the news. There are at least 16 million more whose blood-glucose levels have climbed above normal but have not yet reached a level high enough for a diabetes diagnosis. These people have pre-diabetes, which will most likely develop into diabetes within the next 10 years of their lives. It, too, can cause serious harm to the body, long before a doctor detects it.

Diabetes is a chronic disease that has no cure, but can be controlled. It contributes to the deaths of more than 200,000 Americans each year. It is a leading cause of heart disease and stroke, as well as the leading cause of adult blindness, kidney failure and non-traumatic amputations.

There are two major types of diabetes. Type 1, which occurs most often in children and young adults, is an autoimmune disease in which the body does not produce any insulin, a hormone needed to convert food into the energy we need to live. Five to 10 percent of diabetes cases are of this type.

Type 2 diabetes, a metabolic disorder resulting from the body's inability to make enough or properly use insulin, accounts for 90 percent or more of all diabetes cases. It is most often associated with obesity and was once referred to as adult-onset diabetes, since it frequently strikes in adulthood.

(4-However, the recent surge in childhood obesity has brought with it a disturbing rise in type 2 diabetes among our nation's youth.**)** What makes this increase even more alarming is that children who develop type 2 diabetes appear to develop serious complications much earlier in their lives than people who are diagnosed as adults. A study presented at the American Diabetes Association's 62d Annual Scientific Sessions in June documented a disproportionate number of kidney failures, miscarriages and diabetes-related deaths among one of the first generations of children with type 2 to reach their 20s.

(4-This news comes on the heels of predictions by the Centers for Disease Control and Prevention (CDC) that the prevalence of type 2 diabetes will soar by 165 percent in the United States by the year 2050.**)(4-** The increase in obesity among children and adults, a growing number of older Americans and a trend toward more sedentary lifestyles have already combined to push type 2 diabetes to epidemic proportions.**)**

But the CDC's predictions needn't come true. Recent studies tell us that diabetes can be prevented if we are willing to make and sustain moderate lifestyle changes, including maintaining a healthy weight or losing a modest amount of weight, and being physically active for at least 30 minutes each day. For those who already have diabetes, these changes can help

Diabetes: The Silent Killer Is It Stalking You? (cont.)

Newsweek Magazine, (Spring, 2002)Online,
http://www.washingtonpost.com/wp-adv/newsweek/diabetes_article1.html

ward off the serious health complications associated with the disease. They are changes worth making. They are changes that could save your life.

Diabetes: The Silent Killer

Risk Factors for Diabetes

Researchers can't say for certain what causes diabetes, but they do know that heredity and some environmental factors play a role. Here are some of the major risk factors for diabetes:

· Being overweight or obese
· Family history of diabetes
· Belonging to a racial or ethnic group at high risk for diabetes, such as Native Americans, African-Americans, Latinos, Asian- Americans and Pacific Islanders
· Age (being older than 45)
· Lack of exercise/Sedentary lifestyle
· Giving birth to a baby that weighs more than nine pounds
· Having had gestational diabetes (diabetes during pregnancy)

Signs and Symptoms of Diabetes

Of the 17 million Americans estimated to be living with diabetes, roughly one third don't know they have it. That's because diabetes often develops gradually, without any signs or symptoms at all. Sometimes the symptoms are there, but go unnoticed. Here are some of the most common symptoms:

Type 1

· Frequent urination
· Unusual thirst
· Extreme hunger
· Unusual weight loss
· Extreme fatigue
· Irritability

Type 2

· Any of the symptoms for type 1 diabetes
· Frequent infections
· Blurred vision
· Cuts/bruises that are slow to heal
· Tingling/numbness in the hands or feet
· Recurring skin, gum or bladder infections

Type 1 Diabetes Facts

JDRF Research & Diabetes UK, (March, 2004) Online, *http://www.curewalk.com/type1.asp*

(1-More than one million Americans have Type 1 (juvenile) diabetes-a disease which strikes children suddenly, makes them insulin dependent for life, and carries the constant threat of devastating complications.**)** Someone is diagnosed with Type 1 diabetes every hour. It can and does strike adults as well. In Type 1 diabetes, a person's pancreas produces little or no insulin, a hormone necessary to sustain life. Although the causes are not entirely known, scientists believe the body's own immune system attacks and destroys insulin-producing cells in the pancreas.

The Truth About Type 1 Diabetes

- AFFECTS YOUNG CHILDREN: It's one of the most costly, chronic diseases of childhood and one you never outgrow.
- INSULIN DOES NOT CURE IT: While insulin allows a person to stay alive, it does not cure diabetes nor does it prevent its eventual and devastating effects: kidney failure, blindness, nerve damage, amputations, heart attack, and stroke.
- NEEDS CONSTANT ATTENTION: To stay alive, those with Type 1 diabetes must take multiple insulin injections daily and test their blood sugar by pricking their fingers for blood six or more times per day. While trying to balance insulin injections with their amount of food intake, people with Type 1 diabetes must constantly be prepared for potential hypoglycemic (low blood sugar) and hyperglycemic (high blood sugar) reactions, which can be life threatening.
- DIFFICULT TO MANAGE: Despite rigorous attention to maintaining a healthy diet, exercise regimen, and always injecting the proper amount of insulin, many other factors can adversely affect a person's blood-sugar control including: stress, hormonal changes, periods of growth, physical activity, medications, illness/infection, and fatigue.

Statistics and Warning Signs

- Even with insulin, Type 1 usually results in a drastic reduction in quality of life and shortens the average life span by 15 years.
- **(3-**Each year approximately 30,000 Americans are diagnosed with Type 1, over 13,000 of whom are children. That's 35 children each and every day.**)**
- Warning signs of Type 1 diabetes include: extreme thirst, frequent urination, drowsiness or lethargy, increased appetite, sudden weight loss for no reason, sudden vision changes, sugar in urine, fruity odor on breath, heavy or labored breathing, stupor or unconsciousness. These may occur suddenly.

Diabetes Projects

Epidemiology of Type 1 and Type 2 Diabetes Mellitus Among North American Children and Adolescents

National Center for Chronic Disease Prevention and Health Promotion, (May, 2004) Online, http://www.cdc.gov/diabetes/projects/cda2.htm

(1-Diabetes is one of the most common chronic diseases in children and adolescents; about 151,000 people below the age of 20 years have diabetes.**)**

When diabetes strikes during childhood, it is routinely assumed to be type 1, or juvenile-onset diabetes. **(4-**However, in the last 2 decades, type 2 diabetes (formerly known as adult-onset diabetes) has been reported among U.S. children and adolescents with increasing frequency.**)** Also, studies conducted in Europe showed an increase in the frequency of type 1 diabetes, especially in young children. It is unclear whether the frequency of type 1 diabetes is also increasing among U.S. youth.

Findings

- **(3-**Each year, more than 13,000 young people are diagnosed with type 1 diabetes.**)**
- Type 2 diabetes begins when the body develops a resistance to insulin and no longer uses the insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce sufficient amounts of insulin to regulate blood sugar.
- **(4-**Health care providers are finding more and more children with type 2 diabetes, a disease usually diagnosed in adults aged 40 years or older.**)**
- **(4-**A statistically significant increase in the prevalence of type 2 diabetes among children and adolescents was found only for American Indians.**)**
- **(4-**The epidemics of obesity and the low level of physical activity among young people, as well as exposure to diabetes *in utero*, may be major contributors to the increase in type 2 diabetes during childhood and adolescence.**)**
- **(4-**Type 2 diabetes in children and adolescents already appears to be a sizable and growing problem among U.S. children and adolescents. Better physician awareness and monitoring of the disease's magnitude will be necessary.**)**
- Standard case definition(s), guidelines for treatment, and approval of oral hypoglycemic agents (to lower blood sugar) are urgently required for children and adolescents.

Children and adolescents diagnosed with type 2 diabetes are generally between 10 and 19 years old, obese, have a strong family history for type 2 diabetes, and have insulin resistance. Generally, children and adolescents with type 2 diabetes have poor glycemic control (A1C = 10% - 12%).

Those affected with type 2 diabetes belong to all ethnic groups, but it is more commonly seen in non-white groups. American Indian youths have the highest prevalence of type 2 diabetes. In the 15-to-19-year age group, the current prevalences were

- 50.9 per 1000 for Pima Indians from Arizona;
- 4.5 per 1000 for all U.S. American Indian populations (reported cases from the U.S. Indian Health Service outpatient clinics);
- 2.3 per 1000 for Canadian First Nation people from Manitoba (reported cases from outpatient clinics).

Diabetes Projects (cont.)

Epidemiology of Type 1 and Type 2 Diabetes Mellitus Among North American Children and Adolescents

National Center for Chronic Disease Prevention and Health Promotion, (May, 2004) Online, http://www.cdc.gov/diabetes/projects/cda2.htm

In comparison, the prevalence per 1000 of type 1 diabetes for U.S. residents aged 0-19 years is 1.7 per 1000.

Population-based prevalence estimates for other ethnic groups were not available. In a retrospective study of such reports, a referral center in Cincinnati, Ohio, found an incidence for type 2 diabetes of 7.2 per 100,000 for African Americans and whites aged 10-19 years in 1994. By comparison, the national incidence of type 1 diabetes among those aged 10-19 years is 19 per 100,000. In most of the U.S. case reports, type 2 diabetes accounted for 8% to 46% of all new cases of diabetes (type 1 and type 2) referred to pediatric centers. The magnitude of type 2 diabetes is probably underestimated.

Why is it hard to detect the prevalence of type 2 diabetes in children?

It is hard to detect type 2 diabetes in children because it can go undiagnosed for a long time; because children may have no symptoms or mild symptoms; and because blood tests are needed for diagnosis. It is difficult to be sure it is type 2, because criteria for differentiating between types of diabetes in children are confusing; that is, children with type 2 can develop ketoacidosis (acid build-up in the blood); children with type 1 can be overweight; and because the overall prevalence of the disease may still be low. This means that scientists will have to sample a very large population of children in order to find a stable estimate of prevalence.

CDC Initiatives

In response to this growing public health concern, the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) are funding a 5-year, multicenter study, SEARCH for Diabetes in Youth, to examine the current status of diabetes among children and adolescents in the United States.

Cooperative agreements were awarded to six sites to establish a multi-center registry system that will cover over 6 % of the children and adolescents in the United States. The main objectives of the study are to assess the magnitude and burden of diagnosed diabetes and to develop criteria to differentiate between the types of diabetes among young people in the United States.

The study includes a data coordinating center and a central laboratory and has these two phases:

- to develop a uniform protocol to identify children and adolescents with diabetes
- to implement the uniform protocol to identify cases of diabetes in children in the areas covered by the six study sites.

CDC Workshops

To respond to a potential emergence of type 2 diabetes among North American children and adolescents as a public health problem, CDC's Division of Diabetes Translation invited a group of health care providers, epidemiologists, and public health professionals to review the current knowledge of the disease in North America; see Fagot-Campagna A, Ríos Burrows N,

Diabetes Projects (cont.)

Epidemiology of Type 1 and Type 2 Diabetes Mellitus Among North American Children and Adolescents

National Center for Chronic Disease Prevention and Health Promotion, (May, 2004) Online, http://www.cdc.gov/diabetes/projects/cda2.htm

Williamson DF. The Public health epidemiology of type 2 diabetes in children and adolescents: a case study of American Indian adolescents in the southwest United States. *Clin Chim Acta* 1999;286:81-95.

The first workshop in October 1998 focused on the prevalence, incidence, and secular trend of the disease among different ethnic groups. A second workshop in January 1999 focused on the characteristics, complications, treatment, and follow-up of children diagnosed with the disease.

CDC's Division of Diabetes Translation defined these four objectives, which will require strong collaborations with other agencies and organizations:

1. Raise physicians' awareness about the disease.
2. Develop a standard case definition(s).
3. Determine the magnitude of the problem.
4. Assess and improve the quality of care among children and adolescents diagnosed with type 2 diabetes.

Diabetes in Children and Adolescents

National Diabetes Education Program, (October 2001) Online,
http://www.ndep.nih.gov/diabetes/pubs/Youth_FactSheet.pdf

Diabetes is one of the most serious health problems facing the world today. **(3-**In the United States each year, more than 13,000 children are diagnosed with type 1 diabetes.**)** **(4-**Increasingly, health care providers are finding more and more children and teens with type 2 diabetes, a disease usually seen in people over age 40.**)** Although there are no national data, some clinics report that one-third to one-half of all new cases of childhood diabetes are now type 2. African American, Hispanic/Latino and American Indian children who are obese and have a family history of type 2 diabetes are at especially high risk for this type of diabetes.

What is Diabetes?

Diabetes is a chronic disease in which the body does not make or properly use insulin, a hormone that is needed to convert sugar, starches, and other food into energy. People with diabetes have increased blood glucose (sugar) levels due to a lack of insulin, insufficient insulin, or resistance to insulin's effects. High levels of glucose build up in the blood, and spill into the urine and out of the body. As a result, the body loses its main source of fuel.

Taking care of diabetes is important. If not treated, diabetes can lead to serious problems. Diabetes can affect the eyes, kidneys, nerves, gums, teeth, and blood vessels. Diabetes is the leading cause of adult blindness, lower limb amputations, and kidney failure. It can cause heart disease and stroke, and even death if untreated. Some of these problems can occur in teens and young adults who develop diabetes during childhood. Research in adults shows that these problems can be greatly reduced or delayed by keeping blood glucose levels near normal.

What are Special Concerns for Children and Adolescents with Diabetes?

Diabetes presents unique issues for children and teens with the disease. Simple things - like going to a birthday party, playing sports, or staying overnight with friends – need careful planning. Every day, children with diabetes may need to take insulin or oral medication. They also need to check their blood glucose several times during the day and remember to make correct food choices. For school-age children, these tasks can make them feel "different" from their classmates. These tasks can be particularly bothersome for teens.

For any child or teen with diabetes, learning to cope with the disease is a big job. Dealing with a chronic illness such as diabetes may cause emotional and behavioral challenges. Talking to a social worker or psychologist may help a child or teen and his or her family learn to adjust to lifestyle changes needed to stay healthy.

What Can Families and Others Do?

Managing diabetes in children and adolescents is most effective when the entire family makes a team effort. Families can share concerns with physicians, diabetes educators, dietitians, and other health care providers to get their help in the day-to-day management of diabetes. **(5-**Extended family members, teachers, school nurses, counselors, coaches, day care providers, or other resources in the community can provide information, support, guidance, and help with coping skills.**)** These individuals also may help with resources for health education, financial services, social services, mental health counseling, transportation, and home visiting.

Diabetes in Children and Adolescents (cont.)

National Diabetes Education Program, (October 2001) Online,
http://www.ndep.nih.gov/diabetes/pubs/Youth_FactSheet.pdf

Diabetes is stressful for both the children and their families. Parents should be alert for signs of depression or eating disorders and seek appropriate treatment. While all parents should talk to their children about avoiding tobacco, alcohol, and other drugs, this is particularly important for children with diabetes. Smoking and diabetes each increase the risk of cardiovascular disease and people with diabetes who smoke have a greatly increased risk of heart disease and circulatory problems. Binge drinking can increase the risk of hypoglycemia (low blood sugar) and symptoms of hypoglycemia can be mistaken for those of intoxication and not properly treated. Local peer groups for children and teens with diabetes can provide positive role models and group activities.

What Are the Types of Diabetes?

There are two main types of diabetes. Type 1 and type 2 diabetes are described below. A third type-gestational diabetes-occurs only during pregnancy and often resolves after pregnancy. Women who have had gestational diabetes are more likely to develop type 2 diabetes later in life. (See "Resources" for information on gestational diabetes.)

Type 1 Diabetes

Type 1 diabetes is a disease of the immune system, which is the body's system for fighting infection. In people with type 1 diabetes, the immune system attacks the beta cells, the insulin-producing cells of the pancreas, and destroys them. The pancreas can no longer produce insulin, so people with type 1 diabetes need to take insulin daily to live. Type 1 diabetes can occur at any age, but the disease occurs most often in children and young adults.

Symptoms. The symptoms of type 1 diabetes usually develop over a short period of time. They include increased thirst and urination, constant hunger, weight loss, and blurred vision. Children may also feel very tired all the time. If not diagnosed and treated with insulin, the child or teen with type 1 diabetes can lapse into a life-threatening diabetic coma, known as diabetic ketoacidosis (KEY-toe-asi-DOE-sis) or DKA.

Risk Factors. Though scientists have made much progress in predicting who is at risk for developing type 1 diabetes, they do not know exactly what triggers the immune system's attack on beta cells. They believe that type 1 diabetes is due to a combination of genetic and environmental factors. Researchers are working to identify these factors and stop the autoimmune process that leads to type 1 diabetes.

Type 2 Diabetes

The first step in the development of type 2 diabetes is often a problem with the body's response to insulin, called insulin resistance. For reasons scientists do not completely understand, the body cannot use the insulin very well. This means that the body needs increasing amounts of insulin to control blood glucose. The pancreas tries to make more insulin, but after several years, insulin production may drop off.

(4-Type 2 diabetes used to be found mainly in adults who were overweight and age 40 or older. Now, as more children and adolescents in the United States become overweight and

National Diabetes Education Program, (October 2001) Online, http://www.ndep.nih.gov/diabetes/pubs/Youth_FactSheet.pdf

inactive, type 2 diabetes occurs more often in young people.) Type 2 diabetes is also more common in certain racial and ethnic groups, such as African Americans, American Indians, Hispanic/Latinos, and some Asian and Pacific Islander Americans. To control their diabetes, children with type 2 diabetes may need to take oral medication, insulin, or both.

Symptoms. Type 2 diabetes develops slowly in some children, but quickly in others. Symptoms may be similar to those of type 1 diabetes. A child or teen can feel very tired, thirsty, or nauseated (sick to the stomach), and have to urinate often. Other symptoms may include weight loss, blurred vision, frequent infections, and slow healing of wounds or sores. Some children or adolescents with type 2 diabetes may show no symptoms at all when they are diagnosed. For that reason, it is important for parents and caregivers to talk to a health care provider about testing children or teens who are at high risk for the disease.

Risk Factors. Being overweight, being older than 10 years of age, experiencing puberty, and having a family member who has type 2 diabetes are risk factors for the disease. Certain populations, as noted above, are at higher risk. In addition, physical signs of insulin resistance, such as acanthosis nigricans (A-can-tho-sis NIG-reh-cans), may appear: the skin around the neck or in the armpits appears dark, thick, and velvety. High blood pressure also may be a sign of insulin resistance. For children and teens at risk, health care providers can encourage, support, and educate the entire family to make lifestyle changes that may delay - or prevent - the onset of type 2 diabetes. Such lifestyle changes include keeping at a healthy weight and staying active.

What Should a Child or Teen With Diabetes Do Every Day?

To control diabetes and prevent complications, blood glucose levels must be as close to a "normal" range as safely possible. Families should work with a health care provider to help set a child's or teen's targets for blood glucose levels. (See for Resources information on target ranges.) The provider can help develop a personal diabetes plan for the child and discuss ways to manage hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose).

A Personal Diabetes Plan

A personal diabetes plan ensures that a daily schedule is in place to keep a child's diabetes under control. A health care provider develops this plan in partnership with a child or teen and his or her family. The plan shows the child or teen how to follow a healthy meal plan, get regular physical activity, check blood glucose levels, and take insulin or oral medication as prescribed.

Follow a Healthy Meal Plan. A child or teen needs to follow a meal plan developed by a physician, diabetes educator, or a registered dietitian. A meal plan outlines proper nutrition for growth. A meal plan also helps keep blood glucose levels in the target range. Children or adolescents and their families can learn how different types of food - especially carbohydrates such as breads, pasta, and rice - can affect blood glucose levels. Portion size, the right amount of calories for the child's age, and ideas for healthy food choices at meal and snack time also should be discussed. Family support for following the meal plan and setting up regular meal times is a key to success, especially if the child or teen is taking insulin.

National Diabetes Education Program, (October 2001) Online, http://www.ndep.nih.gov/diabetes/pubs/Youth_FactSheet.pdf

Get Regular Physical Activity. A child or teen with diabetes needs regular physical activity. Exercise helps to lower blood glucose levels, especially in children and adolescents with type 2 diabetes. Exercise is also a good way to help children control their weight. If possible, a child or teen should check blood glucose levels before beginning a game or sport. A child or teen should not exercise if blood glucose levels are too low.

Check blood glucose levels regularly. A child or teen should check blood glucose levels regularly with a blood glucose meter, preferably a meter with a built-in memory. A health care professional can teach a child how to use a blood glucose meter properly and how often to use it. Blood glucose meter results show if blood glucose levels are in the target range, too high, or too low. A child should keep a journal or other records of blood glucose results to discuss with his or her health care provider. This information helps the provider make any needed changes to the child's or teen's personal diabetes plan.

Take all diabetes medication as prescribed. A child or teen should take all diabetes medication as prescribed. **(5-**Parents, caregivers, school nurses, and others can help a child or teen learn how to take medications properly.**)** For type 1 diabetes, a child or teen takes insulin shots at regular times each day. Some children and teens use an insulin pump, which delivers insulin. Some children or teens with type 2 diabetes need oral medication or insulin shots or both. In any case, all medication should be balanced with food and activity every day.

Hypoglycemia and Hyperglycemia

Keeping blood glucose levels within the target range is the goal of diabetes control. However, extremes in blood glucose levels can occur for several reasons. The parent or caregiver should talk with a health care provider about how to deal with these potential problems related to a child's or teen's diabetes.

Blood glucose levels can sometimes drop too low - a condition called hypoglycemia (hi-po-gly-SEE-me-uh). Taking too much diabetes medicine, missing a meal or snack, or exercising too much may cause hypoglycemia. A child or teen can become nervous, shaky, and confused. When blood glucose levels fall very low, the person can lose consciousness or develop seizures. Talk to the child's or teen's health care provider about how to deal with this serious but manageable condition.

Blood glucose levels can sometimes rise too high - a condition known as hyperglycemia (hi-per-gly-SEE-me-uh). Forgetting to take medicines on time, eating too much, and getting too little exercise may cause hyperglycemia. Being ill also can raise blood glucose levels. Over time, hyperglycemia can lead to serious health problems and cause damage to the eyes, kidneys, nerves, blood vessels, gums, and teeth.

Are There Legal Considerations for Children and Teens with Diabetes?

Several Federal and state laws provide protections to children with disabilities, including children or teens with diabetes. These children must have full access to public programs, including public schools, and to most private schools as well. Students with diabetes are entitled to accommodations and modifications necessary for them to stay healthy at school and have the same access to an education as other students do.

Diabetes in Children and Adolescents (cont.)

National Diabetes Education Program, (October 2001) Online, http://www.ndep.nih.gov/diabetes/pubs/Youth_FactSheet.pdf

A child's or teen's school should prepare a plan that outlines how the child's special health care needs will be met. **(5-**The plan should identify school staff responsible for making sure the plan is followed.**)** The parents should be present during development of the plan. Any changes to the plan should be made only with the parents' consent. Ideally, the plan should be updated every year. For information or questions about the Americans With Disabilities Act, call 1-800-514-0301 or 1-800-514-0383 (TDD), or go to www.usdoj.gov/crt/ada/ on the World Wide Web.

Are researchers studying diabetes in children and adolescents?

As the lead Federal Government agency for diabetes research, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports a wide range of research aimed at finding ways to prevent and treat diabetes and its health complications. The Institute's research on type 1 diabetes focuses on understanding its causes, improving treatment, and developing new therapies that could prevent or cure diabetes. In addition, NIDDK recently created Trialnet, a clinical trials network to test new ways to prevent type 1 diabetes and to preserve beta cell function in people who already have diabetes.

(5-NIDDK is also setting up clinical centers to study the prevention and treatment of type 2 diabetes in children and adolescents. Treatment trials will look at lifestyle changes and drug therapy. Prevention trials will develop programs that can be used in schools and communities to lower risk factors for the disease.**)** Other NIDDK-supported research on type 2 diabetes seeks to understand the causes of the disease, improve diagnosis, and develop new treatments. For more information about NIDDK research on children and adolescents with diabetes, visit www.niddk.nih.gov/patient/patient.htm on the Internet.

In 2000, the Centers for Disease Control and Prevention (CDC) began funding a 5-year multi-center study of childhood diabetes. Participating centers are located in California, Colorado, Hawaii, Ohio, South Carolina, and Washington. The goals of the program are to 1) develop population-based registries of childhood diabetes, 2) characterize the types of diabetes, 3) develop case definitions and study the prevalence and incidence of the different types of childhood diabetes, and 4) describe the natural history and the quality of care received during follow-up. For more information, call 1-877-232-3422 or visit http://www.cdc.gov/diabetes/projects/cda2.htm on the Internet.

NIDDK and CDC are joint sponsors of the National Diabetes Education Program (NDEP). The goal of this program is to reduce illness and death associated with diabetes and its complications. The NDEP has developed an initiative to help health care providers identify, diagnose, and treat children and teens with type 2 diabetes. In addition, the NDEP will launch an initiative to increase awareness in the school setting about the importance of helping children and teens with diabetes manage their disease.

What is Diabetes?

Juvenile Diabetes Research Foundation, (March 2004), Online, http://www.jdrf.org/index.cfm?fuseaction=home.viewPage&page_id=71927021-99EA-4D04-92E8463E607C84E1

Diabetes is a chronic, debilitating disease affecting every organ system. There are two major types of diabetes: type 1 diabetes (an autoimmune disease also known as juvenile diabetes) and type 2 diabetes (a metabolic disorder also known as adult onset diabetes). In type 1 diabetes, a person's pancreas stops producing insulin, a hormone that enables people to get energy from food. Type 1 diabetes usually strikes in childhood, adolescence, or young adulthood, but lasts a lifetime. People with type 1 diabetes must take multiple injections of insulin daily or continuous infusion of insulin through a pump just to survive. People with type 2 produce insulin but their bodies are unable to use it effectively. Type 2 is usually diagnosed in adulthood and does not always require insulin injections. However, increased obesity has led to a recent "epidemic" in cases of type 2 diabetes in young adults. Taking insulin does not cure any type of diabetes nor prevent the possibility of its eventual and devastating effects: kidney failure, blindness, nerve damage, amputation, heart attack, and stroke.

The Scope of Diabetes

- Over 18 million Americans have diabetes (6.3 percent of population):
  Diagnosed: 13 million
  Undiagnosed: 5.2 million
- Over 1.3 million Americans have type 1 diabetes
- 194 million people have diabetes worldwide
- According to World Health Organization Estimates, this number will more than double by 2030.
- In the U.S., a new case of diabetes is diagnosed every 30 seconds; over 1.3 million people are diagnosed each year.

The Cost of Diabetes

- Diabetes is single most costly chronic disease
- In 2002, diabetes accounted for $132 billion in health-care costs in the U.S.
- Diabetes accounts for 25 percent of all Medicare expenditures.
- People with diabetes in the U.S. incur medical expenses that are approximately 2.4 times higher than people without diabetes.

The Damage Caused by Diabetes

- ***Attacks Many Organ Systems:*** Diabetes is the leading cause of kidney failure, adult blindness, and non-traumatic amputations and a leading cause of nerve damage, stroke, and heart attacks.
- ***Increased Risk:*** People with diabetes are two to four times more likely to have a heart attack or stroke than someone without the disease.
- ***Shortens Life:*** Diabetes kills one American every three minutes and is the sixth leading cause of death reported in the U.S. Life expectancy for people with diabetes is shortened by an average of 15 years, and the risk of death for people with diabetes is about two times that of people without diabetes.

Type 2 Diabetes in Youth

MDCH, Diabetic Gourmet Magazine, (2000), Online, http://diabeticgourmet.com/content/html/127.shtml

(4-Type 2 diabetes in youth is increasing today due to increasing obesity and the sedentary lifestyle of many of today's youth.**)** It can be difficult to diagnose because the individual may present with clinical symptoms similar to type 1 diabetes. Treatment protocols are in a process of being established and may vary based on the clinical symptomatology, psychosocial and cultural factors and growth and development needs of the child/adolescent.

(4-Recent evidence suggests that children and adolescents are developing an unusual form of diabetes associated with obesity.**)** This type of diabetes differs from type 1 diabetes where the body stops producing insulin. Type 2 diabetes in youth is essentially a problem with insulin resistance. Reasons to know more about this condition include:

Identification of the disease in order to detect and treat those at risk and impact early diagnosis.

Recognition of the disease as an emerging health issue and concern by the National Institutes of Health, Center for Disease Control, American Diabetes Association, and the American Academy of Pediatrics.

What is Type 2 Diabetes in Youth? It is a complex, chronic, metabolic disorder characterized by insulin resistance syndrome. It is often associated with hypertension, dyslipidemia and obesity. The etiology is multiple and includes genetic, environmental, and socio-cultural risk factors.

Who Might Be Affected

- Youth with BMI greater than 85th percentile for age and sex
- Youth with sedentary lifestyle
- Youth with family history of type 2 diabetes
- Youth primarily between 8-19 years of age
- Youth with Acanthosis Nigricans: darkened, thick, velvety pigmentation in skin folds
- Most commonly found in American Indian, African American, Hispanic/Latino, and Asian/South Pacific Islanders, but also occurs in Caucasians
- Females have a greater incidence than males

How is Type 2 in Youth Diagnosed?

Diagnosis is usually based on the clinical picture at presentation and American Diabetes Association diagnostic criteria. It may be difficult to diagnose and may even initially resemble type 1 diabetes, with ketoacidosis or ketonuria.

Diagnosis of Type 2 in Youth*		
Fasting Glucose	≥126 mg/dl	
Non fasting (casual) plasma glucose	≥200 mg/dl	with symptoms of diabetes: polyuria, polydipsia and unexplained weight loss
Two hour	≥200 mg/dl	

Plasma Glucose	during a standard OGTT

* Each test must be confirmed on a subsequent day, by any of the three methods above

The patient outcome goals are to decrease insulin resistance and to prevent and delay the complications associated with diabetes. This should be accomplished through:

- Near normalization of blood glucose and glycohemoglobin
- Normalization of blood pressure if hypertension exists
- Controlling lipids if abnormalities present

Treatment Approaches

- Interdisciplinary team approach to care which may include physician, social worker, psychologist, registered dietitian, registered nurse educator and exercise physiologist.
- Individualized patient and family self-management education, nutritional counseling, and physical activity based on the growth and development needs of the child/adolescent.
- Regular visits to appropriate health care providers for evaluation and follow-up.
- Medication usage: insulin or oral medications may be prescribed.
- Routine health tests and exams including: dilated eye exam, foot exams, blood pressure, lipids, and albuminuria.

Help with lifestyle modifications is one of the most important and challenging issues for the health care provider. Ongoing support and reinforcement of self-management teaching, and review of treatments will assist the patient to meet outcome goals.

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Many Obese Youth Have Condition That Precedes Type 2 Diabetes

Studies To Address Obesity-Linked Diabetes in Children 3-14-2002

Medical News Service, (March 2004), Online, http://www.medicalnewsservice.com/ARCHIVE/MNS843.cfm

Many obese children and adolescents have impaired glucose tolerance, a condition that often appears before the development of type 2 diabetes, according to researchers funded by the National Institutes of Health (NIH). The study findings appear in the March 14 issue of "The New England Journal of Medicine".

"This study suggests that many obese children have a high risk for developing type 2 diabetes," said HHS Secretary Tommy G. Thompson. "Researchers have a lot of information on how to prevent and treat type 2 diabetes in adults, but we need to find better ways to prevent and treat the disease in children."

(4-Once seen only in adults, type 2 diabetes has been rising steadily in children, especially minority adolescents -- African Americans, Hispanic Americans, and Native Americans, according to reports from clinics around the country.**)** Although there are no national, population-based data, studies in Cincinnati, Charleston, Los Angeles, San Antonio, and other cities indicate that the percentage of children with newly diagnosed diabetes who are classified as having type 2 diabetes has risen from less than 5 percent before 1994 to 30-50 percent in subsequent years.

"These results strongly imply that intensive efforts to reduce obesity in children and youth who have impaired glucose tolerance will help to prevent their developing type 2 diabetes," said Duane Alexander, M.D., Director of the National Institute of Child Health and Human Development (NICHD). Both NICHD and the National Center for Research Resources (NCRR), another NIH component, funded the study. Both agencies are part of the National Institutes of Health, the HHS agency that sponsors research to uncover knowledge that will lead to better health for everyone.

The scientists from Yale University School of Medicine conducted their study to determine if obese children and teens have impaired glucose tolerance, which, in adults is a known risk factor for type 2 diabetes. The researchers found that the children with impaired glucose tolerance frequently had insulin resistance, a condition that usually precedes type 2 diabetes in adults and is characterized by the inability of fat, muscle, and liver cells to use insulin properly. Eventually, the insulin-producing cells of the pancreas cannot keep up with the body's increasing demand for insulin, glucose builds up in the blood, and type 2 diabetes begins.

(4-"The epidemic of childhood obesity in the United States has been accompanied by a marked increase in the frequency of type 2 diabetes,**)**" the study authors wrote.

The researchers tested for impaired glucose tolerance in 55 obese children from 4 to 10 years of age, and 112 obese adolescents from 11 to 18 years of age. In all, 25 percent of the children and 21 percent of the adolescents had impaired glucose tolerance. The researchers also found that four of the adolescents in the study had silent type 2 diabetes, a form of diabetes that doesn't cause any symptoms.

"Impaired glucose tolerance is highly prevalent among children and adolescents with severe obesity, irrespective of ethnic group," the researchers wrote.

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), the part of the NIH with lead responsibility for diabetes research, is funding clinical trials to prevent and treat type 2 diabetes in children. These studies, currently being planned for recruitment next year,

Many Obese Youth Have Condition That Precedes Type 2 Diabetes (cont.)

Studies To Address Obesity-Linked Diabetes in Children 3-14-2002

Medical News Service, (March 2004), Online, http://www.medicalnewsservice.com/ARCHIVE/MNS843.cfm

will try to develop ways to stem the rising rate of type 2 diabetes in children and to treat the disease safely and effectively in those who do develop it.

The prevention trials will focus on developing cost- effective interventions that can be widely applied in schools and communities across the country. "For children who already have type 2 diabetes, it's critical to give the safest, most effective therapy as early as possible, yet we can't assume that the therapies used in adults have the same safety and efficacy profiles for children," said study chair Dr. Francine Kaufman, president elect of the American Diabetes Association and director of the Comprehensive Diabetes Center at the Children's Hospital of Los Angeles. Many drugs are available to treat type 2 diabetes, but only metformin has been explicitly approved by the Food and Drug Administration for the treatment of type 2 diabetes in children.

The longer a person has diabetes, the greater the chances of developing the disabling, life-threatening complications of diabetes. **(4-**"We are seeing young people in their late teens who are already developing the complications of type 2 diabetes,**)**" said Dr. Kaufman.

(4-Type 2 diabetes in children, as in adults, is closely linked to obesity, a sedentary lifestyle, and a family history of diabetes. The prevalence of obesity has nearly tripled in adolescents in the past 20 years.**)** According to "The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity", 13 percent of children 6 to 11 years old and 14 percent of adolescents 12 to 19 years old in the United States were overweight in 1999. **(4-**Overweight children are at increased risk of developing type 2 diabetes during childhood and later in life.**)** Genetic susceptibility as well as lack of physical activity and unhealthy eating patterns all play important roles in determining a child's weight. They also contribute to a child's risk for type 2 diabetes and other complications of overweight.

About 16 million people in the United States have diabetes. It is the main cause of kidney failure, limb amputations, and new onset blindness in adults and a major cause of heart disease and stroke. Type 2 diabetes accounts for up to 95 percent of all diabetes cases. Most common in adults over age 40, this form of diabetes affects 8 percent of the U.S. population age 20 and older. The prevalence of type 2 diabetes has tripled in the last 30 years, due in large part to the upsurge in obesity. People who are obese, defined as a body mass index (BMI) of 30 or greater have a five-fold greater risk of diabetes than those with a normal BMI of 25 or less.

Type 1 diabetes affects about 1 million people in the United States. This form of diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin, which regulates blood glucose. Type 1 diabetes usually strikes children and young adults, who need several insulin injections a day or an insulin pump to survive. Insulin is the only treatment for type 1 diabetes, but it is not a cure, nor can it reliably prevent the long-term complications of the disease.

Today's School Nurse: More Than Just a Person Who Bandages Knees

Brown, Mary Daniels, Education World (2000), Online, http://www.education-world.com/a_admin/admin146.shtml

The job of the school nurse has become more demanding as students with complex medical situations have entered schools and as society's expectations have changed. In recognition of School Nurse Day (January 27), Education World writer Mary Daniels Brown talked with school nurses around the United States about their changing roles. Included: Online resources every school nurse should know about!

A generation ago, the school nurse cleaned and bandaged the occasional scraped knee and sent home children with stomachaches or fevers. But today's school nurse does more than that -- *a lot* more.

"We are getting more and more medically fragile children into the school system," Joey Van Camp, coordinating nurse for the Westminster School District in southern California, told Education World.

Gerri Harvey, creator of a Web page called School Nurse Perspectives, agrees. "Children come to school sicker and needier than ever before," said Harvey, an elementary school nurse for 12 years who is now the community liaison nurse at Community Health and Hospice in Laconia, New Hampshire.

In fact, all of the school nurses interviewed for this article confirmed that they now care for students with complex medical conditions.

MORE STUDENTS WITH DISABILITIES

"The past ten years has seen a tremendous change, but I believe the shift to more responsibility falling on schools has been an on-going trend for about 25 years," Harvey told Education World.

The Education for All Handicapped Children Act -- originally passed in 1975 and later amended and renamed the Individuals With Disability Education Act (IDEA) -- guarantees a free, appropriate education to all children in the least restrictive environment possible. As a result of that legislation, many children with severe disabilities, who previously would have been institutionalized or assigned to special education buildings, now attend public schools, a change commonly referred to as inclusion or mainstreaming.

School nurses now may care for students with intravenous tubes for medication, gastrostomy (feeding) tubes, tracheostomies, and ventilators. Those advanced technological devices require care and monitoring, Lucretia Anderson, school nurse with the Pittsburgh Board of Education, told Education World. And students in wheelchairs may be unable to use the toilet by themselves or may require the insertion of a catheter.

Students without physical disabilities are also requiring more care.

According to Harvey, "school nurses administer more medications than ever before." In addition to dispensing prescription medications, such as Ritalin, nurses help students with chronic conditions manage their health.

"Students with diabetes or asthma must have a plan of care in place," explained Anderson. It is the school nurse's responsibility to help students follow their care plans during school hours. The school nurse must be familiar with every student's treatment regimen, including any devices or medical procedures the treatment requires. Students who have diabetes monitor their blood glucose level, often several times a day, and may require insulin injections during school hours.

Today's School Nurse: More Than Just a Person Who Bandages Knees (cont.)

Brown, Mary Daniels, Education World (2000), Online, http://www.education-world.com/a_admin/admin146.shtml

School nurses also help the growing number of children with asthma monitor and control their condition. For reasons that experts cannot explain, the incidence of childhood asthma has risen dramatically in recent years. According to the American Lung Association, asthma accounts for 10 million lost school days a year and is the leading cause of school absenteeism attributed to chronic conditions.

Children who have asthma often use a peak flow meter (a device that measures the amount of lung obstruction) and, when necessary, an inhaler. Severe attacks may require a nebulizer, a device that uses compressed air to deliver medication in a fine mist that is inhaled through a face mask. Use of a nebulizer involves combining the prescribed amount of medication with the appropriate amount of water. By helping students manage their asthma at school, nurses may be able to reduce the number of school days the children miss because of their condition.

SOCIETY'S CHANGING EXPECTATIONS

A recent *New York Times* article, For School Nurses, More Than Tummy Tending, reported that, in interviews conducted around the country, "school nurses uniformly said their jobs were changing because American life has changed." The article refers to "a growing public sense that a school is, in part, a health-care provider."

As Gerri Harvey explained to Education World: "There is definitely a shift in expectations from parents, who expect the school to assume responsibility for many aspects of a child's physical, social, and emotional well-being, things families and medical providers were once expected to provide."

"Sometimes I think I'm the only medical professional some of these children ever see," Van Camp said. "Some days there will be a line of children waiting outside of my office at school, some with their parents."

It's not unusual for parents to ask the school nurse to look at their child's ears or throat and advise whether the child needs to see a doctor. For immigrant families, particularly if the parents don't speak much English, a child's school nurse may be the point of entry into the health-care and social-services systems.

SCHOOL NURSES TRAIN OTHER SCHOOL PERSONNEL

(5-When the nurse cannot meet all the demands she faces herself, school districts generally assign some of her responsibilities to other school personnel.**)** (Most school nurses are women, although Martha Dewey Bergren, an experienced school nurse who is now an instructor at the University of Minnesota, told Education World that she is beginning to see some men at professional meetings.) **(5-**Once the school administration has designated other personnel, usually secretaries, to perform certain tasks, it becomes the school nurse's responsibility to train those people to perform their duties.**)**

(5-The most commonly delegated task is dispensing medications, although state law governs which nursing tasks can be assigned to other school personnel. Many school employees who are being asked to help with medical duties feel insecure about their new responsibilities because they are already busy,**)** Anderson explained. One school secretary recently posted this message to the discussion forum on the National Association of School Nurses Web page: **(5** "I have lost my valued reputation as a good secretary because I refused to monitor a student's

Today's School Nurse: More Than Just a Person Who Bandages Knees (cont.)

Brown, Mary Daniels, Education World (2000), Online, http://www.education-world.com/a_admin/admin146.shtml

blood sugar level and to do a catheter for a student with spina bifida. The sad thing is … I am a terrific secretary.)**(5-** What do you think of secretaries being asked/intimidated into doing medical procedures such as these? In our district/state there is no such thing as a school nurse, and the secretary has to give medication."**)**

NO NATIONAL STAFFING STANDARDS

(5-There is no uniform national standard for the number of students a school nurse cares for; state law usually regulates that number. Anderson, for example, is responsible for 1,500 children, a number that complies with Pennsylvania law.**)** The National Association of School Nurses recommends these nurse-to-student ratios:

- 1:750 in general populations
- 1:250 in mainstreamed populations
- 1:125 in severely handicapped populations

Along with the school nurse's expanding workload comes a large amount of paperwork. Anderson described the school nurse's job as extremely paper-intensive. "In today's litigious society, we have to document everything we do," she explained to Education World.

SCHOOL NURSES ENTER THE COMPUTER AGE

Computer literacy also figures on the growing list of skills that school nurses must have. Computers can help school nurses deal with the extensive paperwork of their job, particularly if school districts also provide clerical help so nurses don't have to enter all the data themselves. Computers also provide school nurses with two other necessities: support and information. Bergren founded and continues to manage SCHLRN-L, an e-mail discussion list for school nurses. In 1994, at the end of its first year, the list had about 140 members. Now, about 1,600 nurses from at least 14 countries (that's the number of countries she can identify from the e-mail addresses) participate. School nurses, who are often the only health-care professionals in their building, perhaps even in their district, sometimes feel isolated. SCHLRN-L allows them to discuss issues and share information with their colleagues.

"Mostly what the members get out of the list is the virtual community, the camaraderie," Bergren told Education World.

Lacking the medical libraries available to nurses working in hospitals, school nurses also use the computer to obtain information. If a new student with an unusual medical condition enrolls, the nurse can use Internet resources to learn about the condition. She or he may also use the computer to locate community resources for families.

It's likely that the school nurse's responsibilities will continue to increase. Bergren told Education World that some school districts are beginning to ask their nurses to handle third-party billing for services such as hearing and vision screening tests. In the world of tightening budgets, school districts, which have traditionally conducted these screenings for free, are starting to seek reimbursement for services to children whose family health plans will cover the procedures. And additional questions, such as whether school nurses should be involved in drug testing, loom ahead.

Today's School Nurse: More Than Just a Person Who Bandages Knees (cont.)

Brown, Mary Daniels, Education World (2000), Online, http://www.education-world.com/a_admin/admin146.shtml

A QUESTION OF FUNDING

(5-Most school nurses today face more demands than they can meet. In general, nurses see the solution to that problem not in the delegating of responsibilities to other school personnel, but in the placement of more nurses in the school.)

(5-"The typical school nurse's office is teeming with students in need all day long, but staffing ratios have not always increased to accommodate the increased demand for the nurse's services,") said Harvey. **(5-**"My observation is that most schools have continued to staff for school nurses the same as they always have, even though the demands on the nurses have increased tenfold." Darlene Huff, coordinator of the health services program for the Columbia [Missouri] School District, serves on both the board of directors and the executive committee of the National Association of School Nurses and co-chairs the association's professional development committee.) She told Education World: "IDEA mandates nationally that special education children be included in the public schools. **(5-**What is not mandated or funded is the support personnel, the registered professional school nurses, to care for those children.) Federally, and at the state level, as legislators mandate services, they have to put the funding dollars behind those mandates for the school nurses."

TAKE THIS JOB AND LOVE IT

With all the duties and responsibilities today's school nurse faces, why would anyone want the job? Jean Tsotsonis of Hyannis, Massachusetts, who has been a school and public health nurse for ten years, believes that school nurses are underpaid in comparison to their colleagues in other areas of nursing.

Yet despite her dissatisfaction with the pay, Jean Tsotsonis loves her job. "Being with children of any age keeps me laughing," she told Education World. "I love to see them succeed and try. I love their growing up and crying and laughing and singing."

"I love school nursing, especially after all these years, because it is the story of life," she added. "Hugging an adult is awkward in an ambulatory care setting, but I can always hug a child."

POSITION STATEMENT

School Nurse Role in Care and Management of the Child with Diabetes in the School Setting - Adopted: November 2001

National Association of School Nurses, (November 2001), Online, http://www.nasn.org/positions/diabetes.htm

HISTORY:

Diabetes is a common chronic disease of childhood, and most children with diabetes attend school and/or daycare. **(3-**About 1.7 per 1000 children under age 20 have type 1 diabetes; and about 13,000 new cases of type 1 are diagnosed annually.)**(4-**In addition, children are now being diagnosed with type 2 diabetes, a disease once found only among adults.**)** The reasons for this alarming increase appear to be linked to the rise in childhood obesity and the decline in physical activity. Still, not all people with type 2 diabetes are overweight. At risk populations for type 2 diabetes include African Americans, Native Americans, Hispanic Americans, and Asian Americans.

DESCRIPTION OF ISSUE:

Each student with diabetes is unique in regard to his or her disease process, developmental and intellectual abilities, and levels of assistance required for disease management. Schools must ensure full participation in academics and provide a safe environment for all students. The student with diabetes presents several variables that could be barriers to full participation if not fully addressed.

The goal of diabetes medical management is to maintain blood glucose levels at or near normal range. Poor or insufficient medical management of diabetes allows fluctuating levels of blood glucose. This fluctuation can lead to immediate consequences in the classroom as well as long-term complications such as damage to the eyes, kidneys, nerves, gums, and blood vessels. Low glucose levels can cause immediate concern with symptoms of pallor, diaphoresis, and a decrease in cognition. If not treated immediately low glucose levels can progress to unconsciousness and death. Despite a quick and favorable response to treatment for a low glucose episode, cognitive ability can remain impaired for several hours. High glucose levels may also present a medical risk to students in the school setting.

(5-To achieve the goal of optimal diabetes medical management the student may need access to a variety of diabetes supplies and may need to perform multiple tasks during the school day. Management strategies for a student with diabetes should be developed considering the knowledge base of the student, developmentally appropriate tasks, the availability of professional staff, and the logistics of the school building.**)** In addition, the student must have access to glucose monitoring equipment, oral or injectable medications including insulin and glucagon, nutritional supplements such as snacks and a fast acting source of glucose, knowledge of the equipment used in their diabetes management (syringes, insulin pen, insulin pump, etc.), a documentation system for blood glucose readings and insulin dosage, and access to a bathroom. A goal of allowing the student to self-manage his or her disease following an individually prescribed regimen in a seamless unrestricted fashion between home and schools is critical to maintaining near normal blood glucose levels.

(5-Knowledgeable personnel must be available at all times including during extra curricular activities and field trips to assist students in managing their diabetes and to respond to emergencies. By having personnel available, medical, academic, and/or behavioral consequences of poor blood glucose control evident in the classroom as well as long-term health effects can be minimized or avoided.**)**

POSITION STATEMENT (cont.)

School Nurse Role in Care and Management of the Child with Diabetes in the School Setting - Adopted: November 2001

National Association of School Nurses, (November 2001), Online, http://www.nasn.org/positions/diabetes.htm

RATIONALE:

Both high and low blood glucose levels affect the student's ability to learn and endanger the student's health. Glucose levels should be as close to the desired range as possible for optimal learning and testing of academic skills. Recent research indicates that maintaining the glucose levels within a narrow range can prevent, reduce, and/or reverse long-term complications of diabetes. The school nurse, as a skilled professional, is in a unique position to provide early identification of children who exhibit symptoms of diabetes and initiate the referral process. **(5-**Managing diabetes at school is most effective when the entire school community is involved – school nurses, teachers, counselors, coaches, parents, medical home, and students.**)** The school nurse can provide the coordination needed to elicit cooperation from the school community in assisting the student with diabetes toward self-management of diabetes. **(5-**The school nurse can be instrumental in preventing and managing emergency conditions that can result from glucose fluctuations by instructing the entire school team on basic diabetes information and management. Emergency conditions are not necessarily the result of a lack of management.**)** Factors such as illness, hormones, or stress may cause a student who closely follows a prescribed regimen to experience an emergency situation. The student with diabetes requires the professional supervision of the school nurse to enhance their self-care skills.

CONCLUSION:

It is the position of the National Association of School Nurses that school nurses have the professional skills needed to assess and support the child with diabetes in the school setting. School nurses are uniquely prepared to provide information to the multidisciplinary team to develop a 504 Plan or Individual Education Plan/Individual Family Service Plan (IEP/IFSP). The school nurse is the key person to implement this plan. While a 504 or IEP/IFSP diabetes health plan may take into consideration management strategies preferred by the student, their family and medical home, it must also conform to state and federal guidelines, as well as the state nurse practice act and the related rules for delegation.

Further, it is the position of the National Association of School Nurses that schools have a basic duty to ensure that the medical needs of students are addressed in the school setting. Under the direction of the school nurse, management strategies may be incorporated in a seamless fashion between home and classroom to help the student with diabetes stay healthy, be academically focused and participate in all desired academic and extra curricular activities.

POSITION STATEMENT (cont.)

School Nurse Role in Care and Management of the Child with Diabetes in the School Setting - Adopted: November 2001

National Association of School Nurses, (November 2001), Online, http://www.nasn.org/positions/diabetes.htm

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Table 3.10. States That Require Specific Student-to-Nurse and School-to-Nurse Ratios

National Center for Chronic Disease Prevention and Health Promotion, School Health and Policy Programs Study, (2000) Online, http://www.cdc.gov/HealthyYouth/shpps/summaries/health_serv/table3_10.htm

(5-)

Student-to-Nurse Ratio ●Ratio of 750:1 or better / Ratio of Above 750:1 ○No Ratio Required School-to-Nurse Ratio ●Yes ○No	Required Student-to-Nurse Ratio 1	Has Required School-to-Nurse Ratio 2
Alabama	/	○
Alaska	○	○
Arizona	○	○
Arkansas	○	○
California	○	○
Colorado	○	○
Connecticut	○	○
Delaware	●	●
District of Columbia	●	●
Florida	○	○
Georgia	○	○
Hawaii	○	○
Idaho	○	○
Illinois	○	○
Indiana	○	○
Iowa	○	○
Kansas	○	○
Kentucky	○	○
Louisiana	/	○
Maine	○	○
Maryland	○	○
Massachusetts	○	○
○Michigan	○	○
Minnesota	○	○
Mississippi	○	○
Missouri	○	○
Montana	○	○
Nebraska	○	○
Nevada	○	○
New Hampshire	○	○

(5-)		
New Jersey	○	○
New Mexico	○	○
New York	○	○
North Carolina	○	○
North Dakota	○	○
Ohio	○	○
Oklahoma	○	○
Oregon	○	○
Pennsylvania	/	○
Phode Island	○	○
South Carolina	○	○
South Dakota	○	○
Tennessee	/	○
Texas	○	○
Utah	○	○
Vermont	●	●
Virginia	○	○
Washington	○	○
West Virginia	/	○
Wisconsin	○	○
Wyoming	○	○

1 “Based on policies adopted by our state, what is the required student-to-school nurse ratio?” (State Health Services Questionnaire, Item 42)

2 “Based on the policies adopted by your stat, what is the required school-to-school nurse ration?” (State Health Services Questionnaire, Item 43)

Reference Sheet
Recognition and Care of School Aged Children with Diabetes

1. Whereas: Diabetes is one of the most common chronic diseases in school aged children, affecting 151,000 young people in the United States or about 1 in every 400-500 people under 20; and
Back up information on pages: 4, 6, 7, 14, and 15

2. Whereas: The American Diabetes Association states Diabetes is the 5th deadliest disease in the Unites States; and
Back up information on pages: 9, 10, and 12

3. Whereas: The Center for Disease Control states that each year more than 13,000 youths are diagnosed with type 1 diabetes; and
Back up information on pages: 4, 5, 14, 15, 18 and 32

4. Whereas: A growing number of children and adolescents are developing type 2 diabetes - a form of diabetes that is generally diagnosed among adults; and
Back up information on pages: 4, 5, 6, 9, 10, 12, 15, 18, 19, 20, 23, 24, 27, 28 and 32

5. Whereas: Many schools do not have a full time nurse or licensed health care professional available on site to handle medical emergencies and nursing duties are often times performed by other school personnel; therefore, be it
Back up information on pages: 1, 4, 5, 18, 22, 29, 30, 31, 32, 33 and 35

Resolved: That National PTA and its constituents believe all school personnel should receive general training on diabetes; and be it further

Resolved: That at least two staff members per school obtain intensive training on insulin administration, diabetic emergency procedures, and in identification and treatment for symptoms of hyperglycemia and hypoglycemia.