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**FINAL REPORT
OF THE
SENATE DIABETES AND CHILDHOOD OBESITY STUDY COMMITTEE**

The Honorable Don Thomas, Chairman
State Senator, District 54

The Honorable Joseph Carter
State Senator, District 13

The Honorable Greg Goggans
State Senator, District 7

The Honorable Johnny Grant
State Senator, District 25

The Honorable Valencia Seay
State Senator, District 34

Prepared by the Senate Research Office
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I. INTRODUCTION

The Senate Diabetes and Childhood Obesity Study Committee was created pursuant to Senate Resolution 537 during the 2007 Legislative Session. The Committee was charged with studying the obesity epidemic and the prevalence of diabetes currently affecting children in Georgia, and to make any recommendations, including suggestions for legislation, that it deems necessary.

The Committee was composed of the following five Senators: Senator Don Thomas, Chairman; Senator Joseph Carter; Senator Greg Goggans; Senator Johnny Grant; and Senator Valencia Seay.

The Committee held three public meetings at the State Capitol on August 23, 2007, October 11, 2007, and December 6, 2007. The Committee heard testimony from: Dr. Quentin Van Meter, Pediatrician and member of the Georgia Chapter of the American Academy of Pediatrics; Dr. Edward Montana, Pediatric Cardiologist and member of the Georgia Chapter of the American Academy of Pediatrics; Ms. Sarah Grace Wood, Graduate of WellStar Be Well Diet and Exercise Program; Dr. Martin Michaels, President, Georgia Chapter of the American Academy of Pediatrics; Mr. Bill Burns, Georgia Advocacy Director, American Heart Association; Dr. Myra Carmon, Professor of Nursing, Georgia State University and member of the Georgia Chapter of the National Association of Pediatric Nurse Practitioners; Ms. Ann Rosenthal and Dr. Jim Annesi, Youth Fit for Life Intervention; Mr. Kevin Perry, Georgia Beverage Association; Ms. Kathy Dailey, Nutrition Coordinator, DeKalb County School Board; Ms. Shannon Williams, Physical Education Coordinator, DeKalb County School Board; Ms. Randi Greene Chapman, American Diabetes Association; Mr. Tom Boyer, Executive Director, Diabetes Care Coalition; Ms. Lisa Kibblinger, President, Greater Atlanta Association of Diabetes Educators; Ms. Dafna Kanny, Epidemiologist, Georgia Department of Human Resources, Division of Public Health; Ms. Mary Ann Phillips and Ms. Martha Katz, Healthcare Georgia Foundation; and Ms. Robin Tannyer, Steps School Health Coordinator, DeKalb County Board of Health.

II. BACKGROUND INFORMATION

Childhood obesity is a serious public health issue affecting the United States. According to the Centers for Disease Control (CDC), the number of overweight children and adolescents has tripled over the past 20 years. Today, 17 percent of children ages 2 to 19 are severely overweight, and childhood obesity has developed into an alarming epidemic. Overweight children have an increased risk for health problems, including diabetes, heart disease, poor female reproductive health, and low self-esteem. In fact, a recent study by the American Medical Association found that 61 percent of overweight children ages 5 to 10 had at least one risk factor for heart disease. Furthermore, obesity during youth is the greatest predictor of obesity during adulthood, which can lead to a number of chronic diseases such as heart disease, asthma, sleep apnea, high blood pressure, cancer, stroke, depression, and most specifically, Type II diabetes.

The childhood obesity epidemic is creating a major health crisis in Georgia, and our obesity rates are notably higher than those in other states. Research conducted by the Department of Human Resources (DHR) indicates that the percentage of obese children in Georgia is 4 times higher than the 5 percent expected, based on a reference population. In fact, nearly 1 in 4 third graders in this state are obese, while 33 percent of middle school students and 26 percent of high school students are severely overweight or at risk for being overweight. Moreover, 12 percent of children ages 2 to 4 who are enrolled in the Women, Infant, and Children (WIC) Program are considered obese, and 15 percent are at risk for obesity. Data collected by DHR further shows that girls, African American and Hispanic children, and children living in low-income households or rural areas are more likely to be obese.

Poor diet and lack of exercise have greatly contributed to the rise in obesity among children in Georgia and across the country. Few schools in Georgia have set nutrition policies requiring that students be offered fruits and vegetables at lunchtime; fattening foods, candy, and soft drinks are easily accessible in nearly all middle and high schools. Furthermore, only 3 in 10 middle and high school students in this state attend daily physical education classes. At home, children are spending more time in front of the television. Over half of Georgia's middle school students watch more than three hours of television every day. Parents frequently turn to highly processed fast food for financial reasons and to save time, without realizing the effects these foods have on a child's health. New data from the Medical College of Georgia's (MCG) Prevention Institute revealed that children often begin drinking soda before their first birthday.

Along with the obesity epidemic, there has also been a sudden and dramatic increase in the number of children in Georgia with Type II diabetes—the adult “lifestyle-related” version of the disease. Currently, there are approximately 715,000 Georgians living with this form of diabetes, which represents a 20 percent increase in the last five years. Type II diabetes is quickly becoming a disease of childhood and midlife, as opposed to developing at an older age. Experts agree that, due to the epidemics of childhood obesity and diabetes, this may be the first generation of children who will not outlive their parents.

III. COMMITTEE FINDINGS

A. Childhood Obesity in Georgia

Childhood obesity is the most common chronic disease of childhood, and it is of epidemic proportion, particularly in the southeast, according to Dr. Edward Montana, Pediatric Cardiologist and member of the American Academy of Pediatrics. In Georgia, the prevalence of childhood obesity is staggering. A recent study conducted by the University of Georgia indicated that 1 in 3 children in Georgia are obese or at risk for obesity.¹ Using Body Mass Index (BMI) to measure weight status, DHR recently determined that 14 percent of 2 to 4 year olds in the WIC program, 24 percent of third grade children, 16 percent of middle school students, and 12 percent of high school students in our state are considered obese.² In fact, the severity in Georgia is over two times greater than the current national average. Rural areas have especially high prevalence rates, and Hispanic and African American children are impacted to a greater extent than white children.

Obesity during childhood leads to a number of related health conditions, such as asthma, hypertension, sleep apnea, depression, decreased self esteem, cardiovascular disease, and Type II diabetes. Moreover, obesity affects a child's academic performance; obese children perform more poorly in school, are absent more often, and experience frequent teasing, bullying, and social isolation when compared to non-overweight children.³ Research also suggests that childhood obesity is the greatest predictor of obesity during adulthood; approximately 80 percent of children who are overweight at age 10 will be obese adults at age 25.⁴ Furthermore, obese adults have a high mortality rate. Nearly 10 percent of deaths in Georgia each year are attributable to obesity.⁵ In other words, around 6,700 Georgians die each year due to being obese.

¹ Testimony given by Ms. Mary Ann Phillips, Georgia Health Policy Center, and Ms. Martha Katz, Healthcare Georgia Foundation, on December 6, 2007.

² See www.health.state.ga.us/nutandpa/data.asp. Children who have a BMI greater than the 95th percentile for height and weight are considered obese.

³ Testimony given by Dr. Quentin Van Meter, American Academy of Pediatrics, on August 23, 2007.

⁴ See *Annals of Internal Medicine*, 18 June 2002, Vol. 136, Issue 12: 923-925.

⁵ See www.health.state.ga.us/nutandpa/data.asp.

B. Diabetes

Diabetes is a group of diseases characterized by high blood glucose levels due to defects in insulin production. There are three distinguishable types of the diabetes: Type I, Type II, and gestational diabetes.⁶ Type I diabetes, often referred to as “juvenile diabetes,” results from the body’s failure to produce insulin, the hormone that “unlocks” the cells of the body and allows glucose to enter and fuel them.⁷ People with Type I diabetes must receive insulin either by injection or a pump. Approximately 5 to 10 percent of people diagnosed with diabetes have the Type I version, which is usually diagnosed during childhood and is not related to obesity.

Type II diabetes, on the other hand, results from insulin resistance (i.e., the body fails to properly use insulin), combined with a relative insulin deficiency.⁸ Type II diabetes is the most common form of the disease, accounting for 90 to 95 percent of all diagnosed cases of diabetes. In the past, Type II diabetes was rarely seen in children and was often referred to as “adult onset” diabetes. However, along with poor nutrition and decreased physical activity, Type II diabetes is now being diagnosed in children and adolescents at an alarming rate. The dramatic rise of Type II diabetes among children is directly linked to the obesity epidemic.

Finally, gestational diabetes is a form of glucose intolerance that occurs during pregnancy. Gestational diabetes affects about 4 percent of all pregnant women (about 135,000 pregnancies) in the U.S. and 2 percent of live births in Georgia each year.⁹ Numerous studies indicate that there is a direct correlation between gestational diabetes and childhood obesity. If left untreated, gestational diabetes causes an unborn child’s pancreas to produce extra insulin, which is often stored as fat. Babies with excess insulin become children who are at risk for obesity and Type II diabetes. In fact, children born to mothers who had gestational diabetes during pregnancy are more likely to be obese children.

Diabetes is a very common disease in Georgia, affecting 715,000 Georgians.¹⁰ Furthermore, according to DHR, there are approximately 304,000 additional adults in our state who are undiagnosed with the disease, and thousands more are at risk because of obesity, unhealthy eating, and lack of physical activity. Diabetes leads to a number of health complications, including blindness, kidney failure, heart disease, stroke, hypertension, nerve damage, impotence, skin disorders, periodontal disease, pregnancy complications, and premature death. In fact, diabetes is the 5th leading cause of death in the country, and the 7th leading cause of death in Georgia, killing 1,717 Georgians in 2006—equivalent to five deaths every day.¹¹

C. Economic Consequences of Obesity and Diabetes

The economic consequences of obesity and diabetes are astounding. Approximately 9 percent of total health care expenditures are due to obesity-related illnesses, costing the U.S. an estimated \$80 billion annually.¹² Taxpayers fund almost half of this through Medicaid and Medicare. Obesity also accounts for \$22 billion of the annual cost of heart disease and about \$1.9 billion of the total cost of breast and colon cancers. Furthermore, the total cost of diabetes in the U.S. is \$57 billion, including \$23 billion in

⁶ See www.diabetes.org.

⁷ Testimony given by Dr. Quentin Van Meter, American Academy of Pediatrics, on August 23, 2007.

⁸ Id.

⁹ Testimony given by Ms. Randi Greene Chapman, American Diabetes Association, on October 11, 2007.

¹⁰ Id.

¹¹ Testimony given by Mr. Tom Boyer, Diabetes Care Coalition, on December 6, 2007.

¹² See *Childhood Obesity Update*, National Conference of State Legislatures, June 2007.

health care expenses. Finally, nearly \$33 billion is spent every year in this country on weight loss products and services.¹³

With regard to obese children, the national cost is estimated at \$3 billion for those covered by Medicaid, as children with Medicaid are six times more likely to be treated for obesity than are those with private insurance.¹⁴ Hospital costs for obese children also increased from \$35 million in 1981 to nearly \$130 million in 2005 nationwide.

Obesity and diabetes are costly to Georgia, as well. The CDC estimates that Georgia spends nearly \$2.1 billion per year in costs associated with obesity from childhood through adulthood. Approximately \$385 million of this amount is paid for by Medicaid, which represents 10 percent of the total Medicaid budget. Moreover, the total cost of diabetes in Georgia is over \$4 billion per year due to medical care, lost productivity, and premature death.¹⁵ The health care costs for one person with diabetes are approximately \$13,200 per year, compared with \$2,600 per year for a person of comparable age without diabetes.¹⁶

D. Nutrition and Physical Activity

Healthy eating and increased physical activity are essential in reducing the childhood obesity epidemic and lowering the number of obesity-related illnesses, including Type II diabetes. According to one study by the CDC, a healthy diet and physical activity resulted in a 58 percent reduction in the progression of Type II diabetes. However, only 20 percent of teenagers in Georgia consume the recommended five servings of fruit and vegetables per day.¹⁷ The typical diet of a school-aged child consists of fast food, sugary snacks, and soft drinks, which are high in fat and calories, but low in nutrients. Dr. Martin Michaels of the American Academy of Pediatrics demonstrated to the Committee that one 12-ounce can of soda contains eight teaspoons of pure sugar—consuming just one can every day will lead to a weight gain of ten pounds in one year.

During its meetings, the Committee heard testimony and discussed the availability of unhealthy snacks and soda in school vending machines, which are often unregulated. Mr. Kevin Perry from the Georgia Beverage Association testified that the beverage industry is committed to supplying school vending machines with water and healthier drinks. However, fattening foods, candy, and soft drinks are easily accessible in nearly all middle and high schools, and few schools in Georgia have implemented any nutritional guidelines that require students to be offered fruits and vegetables at lunchtime. Moreover, children are also eating unhealthy foods outside of school, as parents often turn to fast food to save time and money. The CDC estimates that as much as half of the average American family's food budget is spent on food consumed outside of the home.

Research confirms that proper nutrition enhances academic performance, while poor nutrition impedes it. School-based nutrition policies and physical education are vital to improving children's eating habits and physical activity. The Child Nutrition and WIC Reauthorization Act of 2004 requires each local school district receiving federal funding for free or reduced-cost meals (nearly every school in the country) to establish a wellness policy beginning with the 2006-2007 school year. The law specified that, at a minimum, the policies must include goals for physical activity, nutrition education, and nutrition guidelines, and must set forth a plan for implementation. In July of 2007, the Georgia Action for Healthy Kids Program, along with the Department of Education (DOE), conducted a survey

¹³ See *Childhood Obesity Update*, National Conference of State Legislatures, June 2007.

¹⁴ *Id.*

¹⁵ Testimony given by Dr. Quentin Van Meter, American Academy of Pediatrics, August 23, 2007.

¹⁶ See *Economic Costs of Diabetes in the U.S. in 2003*, *Diabetes Care*, 26:927.

¹⁷ Testimony given by Dr. Martin Michaels, American Academy of Pediatrics, on October 11, 2007. See also www.health.state.ga.us/nutandpa/data.asp.

of School Nutrition Directors in Georgia, and found that, while most schools in our state have developed policies pursuant to this law, many policies have not been implemented. The survey revealed that schools face multiple barriers to the implementation of wellness policies, including funding and time constraints.¹⁸ Successful implementation of school wellness policies will require clear planning and adequate resources, as well as involvement from parents, students, school administrators, and the public.

Similarly, budget shortfalls and increased pressure on academic performance have contributed to the steady decline of physical education classes in schools. According to Mr. Bill Burns of the American Heart Association (AHA), the childhood obesity epidemic directly correlates with the decline of physical activity. Research shows that physical education not only improves a child's physical health, but also strengthens mental well-being and academic performance. However, fewer than 35 percent of middle and high school students in our state attend daily physical education classes, although most spend more than three hours watching television every day.¹⁹ Notably, according to DHR, providing every kindergartener and first grader in Georgia with 5 hours per week of physical education could potentially reduce the number of obese girls in those grades by 43 percent, and those at risk for being obese by nearly 60 percent.

Current regulations by the DOE require 90 contact hours per year of physical education in grades K-5, and that schools with grades 6-12 "shall make available instruction in health and physical education."²⁰ According to Mr. Burns, the 90 contact hours roughly translate to 30 minutes per day, but these requirements are often not met by elementary schools.²¹ Existing requirements for high schools in Georgia specify that students must have one-half credit of physical education and one-half credit of health education to graduate. However, the AHA recommends mandated physical education of 150 minutes per week in elementary and middle schools, and that the high school requirements are doubled.

IV. LEGISLATIVE ACTIVITY IN OTHER STATES

School-based physical activity and nutrition programs are key strategies for addressing the childhood obesity epidemic. In 2006, 47 states considered or enacted legislation aimed at preventing childhood obesity through improved nutritional standards in schools, mandatory physical education, and measurement of Body Mass Index (BMI).²² Georgia is one of the few states that has not passed any significant legislation regarding childhood obesity.

A. Improved Nutritional Standards

Legislation related to the nutritional quality of school foods and beverages has been enacted in many states, based on evidence confirming that adequate nutrition enhances academic achievement and improves concentration levels.²³ Policy approaches include prohibiting the sale of certain high-fat foods on campus, limiting access to vending machines, and providing the nutritional content of school foods to both parents and students. For example, in 2006, Arizona, California, Colorado, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, New Mexico, North Carolina, Oklahoma, Rhode Island, South Carolina, Tennessee, Texas, and West Virginia implemented legislation requiring nutrition standards for schools. Other states, such as Pennsylvania and Vermont, have focused on creating school wellness programs to teach nutritional education and promote physical well-being.

¹⁸ Testimony given by Ms. Martha Katz, Healthcare Georgia Foundation, on December 6, 2007.

¹⁹ See GA DOE Reg. 160-4-2-.12. See also www.health.state.ga.us/nutandpa/data.asp.

²⁰ Testimony given by Mr. Bill Burns, American Heart Association, on October 11, 2007.

²¹ Id.

²² See *Childhood Obesity Update*, National Conference of State Legislatures, June 2007.

²³ Id.

B. Mandatory Physical Education

At least 20 states have enacted legislation to address the lack of exercise in schools; most focused on increasing and refining minimum activity requirements. The following southern states have enacted daily physical education requirements²⁴:

- **Alabama:** Every student in grades K-8 must have a minimum of 30 minutes of physical education daily, not including lunch or recess.
- **Arkansas:** Public schools must provide 30 minutes of daily physical activity in grades K-12. At least one instructor of each class must be a certified Physical Education Teacher.
- **Florida:** As of 2007, schools with grades K-5 must provide 150 minutes per week of structured physical education.
- **Texas:** As of 2007, students in grades K-5 must have 30 minutes of moderate or vigorous daily physical activity. Students in grades 6-8 must have at least 4 semesters that contain 30 minutes of daily physical activity. All students in grades 3-12 must complete mandatory physical fitness testing.
- **Mississippi:** As of 2007, all Mississippi schools must provide 150 minutes per week of physical activity-based instruction and 45 minutes per week of health education in grades K-8.
- **South Carolina:** All students must have at least 150 minutes per week of physical education and physical activity.
- **Tennessee:** Physical education is required in grades K-8.
- **Louisiana:** Physical education is mandated for all grade levels. Students in grades 9-12 must pass 270 classroom hours of Physical Education. (equivalent to 3 semesters) and 90 classroom hours (equivalent to 1 semester) of health education.

Legislation requiring schools to provide students with 150 minutes of physical education per week was introduced in Georgia in 2005, but was not enacted.

C. Body Mass Index

Body Mass Index (BMI) is a measure of body fat based on height and weight, as well as other factors such as age and gender. BMI is the most widely accepted method used to screen for obesity in children and adolescents because it is relatively easy to obtain the height and weight measurements needed to calculate BMI, it is non-invasive, and BMI correlates with body fat. Physicians often use BMI to determine the causes of and treatments for obesity-related disorders, including diabetes, heart disease, and asthma.²⁵ After BMI is calculated for children, the BMI number is plotted on the CDC BMI-for-age growth charts (for either girls or boys) to obtain a percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. The percentile indicates the relative position of the child's BMI number among children of the same sex and age. Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex. Data gathered by MCG indicates that, by age 5, a child's BMI becomes the best predictor of future obesity.

Arkansas became the first state to enact BMI legislation in 2003, requiring schools to measure students' BMI and report the findings to parents via U.S. mail as a health status indicator. Initially, the legislation generated significant controversy; however, a research study conducted by the University Of Arkansas concluded that, since implementation of the policy, school obesity rates have slightly decreased. Moreover, data shows that parents are limiting their children's intake of fast food, and more schools are offering healthy snacks in vending machines. Most importantly, parents appear to

²⁴ Testimony provided by Mr. Bill Burns, American Heart Association, on October 11, 2007.

²⁵ Testimony provided by Dr. Dafna Kanny, Georgia Department of Human Resources, Division of Public Health, on December 6, 2007.

be reacting positively to the reporting—57 percent of doctors in Arkansas reported that at least one parent brought in their child's BMI letter for advice.

As of March 2007, Arkansas, California, Florida, Missouri, Pennsylvania, South Carolina, Tennessee, and West Virginia have BMI reporting requirements in effect, while Delaware and Iowa have enacted pilot programs for BMI measurement. Several other states currently require schools to use BMI as a way to track student growth and development during scheduled health screenings.

V. COMMITTEE RECOMMENDATIONS

The Committee recognizes that childhood obesity is creating a serious health crisis in Georgia. The severity of childhood obesity in our state is over two times greater than the current national average, costing Georgia more than \$2.1 billion annually. The Committee also recognizes that obesity during youth is the greatest predictor of obesity during adulthood and can lead to a number of chronic diseases, including Type II diabetes. Type II diabetes is now being diagnosed in children and adolescents at an alarming rate and is directly linked to the obesity epidemic affecting today's youth. Therefore, the Committee encourages the General Assembly to address both childhood obesity and diabetes during the 2008 Legislative Session. The Committee recommends that increased physical activity and improved nutrition, particularly within our schools, be the primary focus of any legislation.

The Committee also recognizes that increased exercise and a healthy diet are essential to reducing the childhood obesity and diabetes epidemic in our state. School-based nutrition policies and physical education not only improve children's eating habits and physical activity, but strengthen academic performance, as well. Therefore, the Committee encourages the General Assembly and the Department of Education to promote the establishment of basic nutritional standards for foods provided in schools. The Committee further recommends that the Department of Education work to increase the availability of healthy snacks and beverages in school vending machines. Additionally, the Committee encourages the General Assembly and the Department of Education to increase mandatory daily physical education requirements for grades K-12.

Furthermore, the Committee recognizes that BMI measurement is a valuable tool in predicting childhood obesity and therefore encourages the General Assembly and the Department of Education to promote BMI measurement and reporting within the school system.

Finally, the Committee recommends that the General Assembly promote community awareness regarding the childhood obesity and diabetes epidemics affecting Georgia's children. The Committee also encourages the General Assembly to increase funding for community-based after-school programs that provide children with an opportunity for physical activity.