FINAL REPORT OF THE
VIRGINIA COMMISSION ON YOUTH

Childhood Obesity

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

COMMISSION ON YOUTH DOCUMENT

COMMONWEALTH OF VIRGINIA
RICHMOND
2003

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I. Authority for Study

Section 30-174 of the *Code of Virginia* establishes the Commission on Youth and directs it to "…study and provide recommendations addressing the needs of and services to the Commonwealth's youth and their families." This section also directs it to "…encourage the development of uniform policies and services to youth across the Commonwealth and provide a forum for continuing review and study of such services."

Under § 30-175 of the *Code of Virginia* the Virginia Commission on Youth has the power and duty to "undertake studies and to gather information and data in order to accomplish its purposes as set forth in § 30-174, and to formulate and present its recommendations to the Governor and the General Assembly." In addition, "at the direction or request of the legislature by concurrent resolution or of the Governor, or at the request of any department, board, bureau, commission, authority or other agency created by the Commonwealth or to which the Commonwealth is party, study the operations, management, jurisdiction or powers of any such department, board, bureau, commission, authority or other agency which has responsibility for services to youth."

II. Members

Members of the Commission on Youth are:

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III. Executive Summary

Childhood obesity is in danger of reaching epidemic proportions across the United States. Obesity among adolescents has tripled since 1980,[1] with much of this growth occurring in the last ten years.[2] The increase stems from the poor eating habits of youth in the U.S., combined with the increasing amount of time that young people spend in sedentary activities such as television and video games.[3]

This problem has severe implications for the health and well-being of children and youth living in Virginia. Obesity and overweight create an enhanced risk for serious health problems that manifest themselves both in childhood and later in life.[4] In addition, the social stigma

associated with overweight can be particularly debilitating for adolescents. They are more likely to face discrimination and teasing from peers and consequently have greater vulnerability for psychological problems stemming from low self-esteem and depression.[5]

This report addresses the problem of obesity among children and adolescents in Virginia. It discusses research both at the state and national levels regarding the prevalence, causes, and consequences of childhood obesity. It provides information about the role of parents and schools in improving the eating habits and physical activity of children in Virginia and suggests ways that these parties can take action to improve the health and nutrition of Virginia's youth.

Of the initiatives identified in the Commonwealth, one of the most promising is the Virginia Action for Healthy Kids, which works to improve the health and educational performance of children through better nutrition and physical activity in schools. This statewide initiative, operating under the aegis of the Virginia Cooperative Extension, involves numerous state agencies and private organizations, including the Virginia Department of Health, the Virginia Department of Education, the American Heart Association, the American Cancer Society, the U.S. Department of Agriculture (USDA), the Virginia School Food Service Association, and the Virginia Dietetic Association.

Recommendation

Virginia Action for Healthy Kids, at the direction of Virginia Cooperative Extension, Virginia Tech, be requested to report to the Commission on Youth on the most effective and cost-efficient ways to prevent greater proliferation of overweight and obesity among the youth in Virginia by November 17, 2003.

IV. Background

Obesity is on the rise at both the national and state levels. An estimated 61% of U.S. adults were overweight in 1999.[6] In Virginia, the Department of Health reports that 57% of Virginia residents were overweight or obese in 2001, up 17% in the past ten years.[7]

Children and adolescents have not escaped this crisis. The proportion of children and adolescents in the U.S. who are obese has tripled in the last two decades, up from 5% in 1980 to 15% in 2000.[8] Much of this growth has occurred in the last 10 years. Between 1994 and 2000 the percentage of overweight children in the U.S. ages 6 to 11 grew from 11% to 15%, and the percentage of overweight adolescents ages 12 to 19 grew from 10.5 to 15.5%.[9]

A two-part study conducted by the Virginia Department of Health in 2000 identified a similar percentage of overweight children in the Commonwealth.[10] The agency surveyed 853 fourth grade students in 15 different schools throughout Virginia at two different times—once in 1997, and again in 2000. The purpose of the survey was to develop baseline data regarding the nutritional status of Virginia's children before attempting any interventions. These surveys found that over one-third (37%) of the children surveyed were overweight for their height, given their age and gender. Data from the 2000 survey indicated that 19.6% had

Body Mass Index (BMI) scores** in the 85th to 95th percentile range, suggesting that they were overweight. In addition, 17.4% were found to have BMI scores above the 95th percentile range, suggesting that they were obese. It should also be noted that these numbers grew at least one percentage point during the period between the first and second surveys.

Data collected by the Women, Infants, and Children (WIC) Program of the Virginia Department of Health shows an even more alarming occurrence of obesity among its young program participants. Overall, 22.2% of the children enrolled in the WIC Program are classified as obese—3.3% of infants and 18.7% of children.[11] This data suggests that problems with weight and poor nutrition may be even more prevalent among children of lower socioeconomic status.

V. Causes of Childhood Obesity

The causes of weight gain are essentially the same for both children and adults: excessive calorie intake and lack of physical activity. When combined, these behaviors can have dramatic health consequences for both children and adults.

A. NUTRITIONAL HABITS

U.S. Trends

Recent decades have seen an alarming trend in the eating patterns of young people in the United States. A continuing survey conducted by the U.S. Department of Agriculture (USDA) between 1994 and 1996 found that only 2% of school-aged children meet the Food Guide Pyramid serving recommendations for all five food groups.[12]

Table 1

Percentage of Children Eating the Recommended Number of Daily Food Group Servings

Food Group	Children Satisfying Goal
Fruit	14%
Meat	17%
Vegetables	20%
Grains	23%
Milk	30%

Source: U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. 2001.

** Body Mass Index is a calculation of a person's weight in kilograms divided by the square of their height in meters. In children and adolescents, overweight is defined as a sex and age-specific BMI at or above the 95 percentile, based on revised growth charts by the Centers for Disease Cotrol and Prevention. There is generally no accepted definition for obesity in children and adolescents.

Of additional concern is the fact that the diets of young people are high in sugar. Added sugars, both those that are used as ingredients in processed foods and those added to foods as they are consumed, contribute an average of 20% of total food energy in children.[13] Much of this added sugar is consumed through soda. Nationwide, adolescent boys consume twice the recommended amount of sugar each day, with almost half coming from soft drinks.[14] Similarly, teenage girls consume more than three times the recommended amount of sugar, with 40% coming from soft drinks.[15] Overall, 56 to 85% of children (depending on age and gender) consume soda on any given day, with over a third of teenage males consuming more than three servings per day.[16] Moreover, as soda consumption has increased, milk consumption has decreased—children now drink twice as much soda as milk.[17] This deprives youth of calcium, a nutrient that is especially important for growth and development.

Children also consume far too much fat. Snacks, sweets, and side dishes have become the staples of adolescent diets. The Centers for Disease Control and Prevention and the USDA have found that more than 84% of children and adolescents eat too much fat, and more than 91% eat too much saturated fat.[18]

Many of these unhealthy eating habits are manifested through the over-consumption of fast food, which is high in calories but of limited nutritional value.[19] Restaurants promote over-consumption by heavily promoting extra large ("super size") portions.[20] Daily consumption of these nutritionally deficient foods makes it impossible for children to balance out their excesses, creating under-nutrition that can cause lasting health effects and can affect academic performance.[21]

Virginia Trends

The WIC Program of the Virginia Department of Health reported that as, of March 30, 2002, approximately 61% (85,055) of the children enrolled in the program had poor eating habits. This statistic appears to be representative of the diets of children across the Commonwealth. The Health Department study found that the typical fourth grade child reported eating the healthier of two food items less than 50% of the time.[22] However, these children recognized the healthier of the two options 71% of the time, suggesting that the selection of the unhealthy alternative was often a conscious choice.[23] Given the fact that these children reported being highly involved in selecting the foods that they eat, particularly snacks (selecting their own 71% of the time), it is not surprising that their diets are filled with unhealthy foods.[24]

B. PHYSICAL ACTIVITY

Children and adolescents today encounter many distractions that discourage them from participating in physical activities. Watching television, playing video games, and surfing the Internet have replaced sports, dance, bicycling, and other forms of physical activity as the favorite pastimes of youth. And while children are still more active than adults, their level of activity decreases through adolescence.[25]

There are two factors that appear to have significant impact on the level of activity of children and adolescents: the amount of time spent in sedentary activities, and the decline of physical education programs in schools.

Increased Time Spent in Sedentary Activities

Americans have grown increasingly sedentary in recent decades, and our children are no exception. Activities such as television-watching now consume much of the free time of our youth. Nationally, 43% of adolescents watch more than two hours of television per day.[26] Similarly, 89% of Virginia fourth graders in the Health Department study reported having watched television, videos, or movies the day before for an average of 110 minutes.[27] In addition, 58% of the students reported playing video or computer games the day before for an average of 68 minutes.[28] When taken together, it would appear that a majority of these students spent more than two hours of their day in sedentary activities.

A study by the Cool Kids Program, an initiative launched by the WIC Program of the Virginia Department of Health, had similar findings. The survey measured the amount of time overweight two to four-year-olds spent in sedentary activities. The findings suggested that on average, participating children spent 2.9 hours per day in sedentary activities such as television viewing, reading, and playing video games.[29]

Decline of Physical Education Programs in Schools

The lack of physical activity in young people is further compounded by the declining importance of physical education in the schools. Due to the increased emphasis on academic performance standards, physical education programs are losing significance as a component of the school curriculum:

- From 1991 to 1999, the percentage of students who attended daily physical education classes fell from 42% to 29%.[30]
- In 1995, less than 25% of high school students participated in daily school physical education, with this number rising slightly to 27% in 1997.[31]
- The majority of high school students take physical education for only one year between ninth and twelfth grades.[32]

Nationally, only 28 states have statutes regulating physical activity in the schools.[33] Virginia is one of these states. Virginia Code section 22.1-207 requires physical and health education to be emphasized throughout the public school curriculum by lessons, drills, and physical exercises, and also mandates that all students in the public elementary, middle, and high schools are to receive health instruction and physical training as part of the educational program. The Virginia Board of Education has followed this mandate by requiring elementary schools to provide instruction in health and physical education and to offer a daily recess during the regular school year, as determined to be appropriate by the individual schools.[34] However, once children reach the eighth grade, physical education becomes an elective, rather than a required course.[35] Moreover, once students reach high school, they are required to receive only two units of physical education/health in order to qualify for a diploma, and classroom driver's education may count for 36 class periods of the required health instruction.[36]

It is unlikely that these requirements go far enough to facilitate a healthy level of physical activity during the school day for Virginia's students. The U.S. Surgeon General recommends that children accumulate at least 60 minutes of moderate physical activity most days of the week.[37] Yet only 58 to 60% of the fourth grade students surveyed in the Health Department study reported participating in a physical education class and/or recess on the day before the

survey.[38] Of those who did participate in such a class, the average duration of the period was 27 minutes.[39] This data suggests that many of Virginia's children are accumulating less than half of the recommended amount of time for physical activity while at school, the place where they spend the greatest portion of their day.

VI. Consequences of Childhood Obesity

Overweight children now face numerous health problems that once manifested themselves much later in life. Youth now comprise a large percentage of diagnoses of diseases that were traditionally considered "adult onset." For example, early signs of cardiovascular disease among young people are increasing, such as blocked coronary arteries, high blood pressure, and hypertension.[40] In addition, Type II diabetes, a disease caused by gradual resistance to the body's insulin (often attributed to chronic bad health habits), has tripled in children in the last five years.[41] These consequences appear to stem at least partially from the high fat diets, excessive weight, and the sedentary lifestyles of today's youth.

Of additional concern is the fact that an adolescent's struggle with excess weight typically carries over to adulthood. Once an adolescent becomes overweight, there is a high probability that he or she faces a lifetime struggle with weight management and related health issues. Overweight adolescents have a 70% chance of becoming overweight adults, which increases to 80% if one or both parents are obese.[42] Adults who have early weight problems have a higher risk of serious health problems such as coronary heart disease, stroke, osteoarthritis, and colon and breast cancers.[43]

Overweight children also encounter psychosocial difficulties such as increased risk for discrimination, low self-esteem, and poor body image.[44] This can cause these children to feel stigmatized and to withdraw from peers, and places them at significant risk for developing psychological disorders.[45] These psychological effects are particularly acute for those children who remain obese as they enter adulthood, as they may be deprived of the social successes enjoyed by those with normal body weight. For example, studies have found that obese adults are less likely to marry or receive a higher education, and are likely to earn less money than other adults.[46]

As this research suggests, obesity has significant consequences for our society at large. The total direct and indirect costs attributed to overweight and obesity amounted to $117 billion in 2000.[47] Direct costs include expenditures for health care and pharmaceuticals, while indirect costs are tabulated based on figures such as loss of productivity, costs associated with workdays, and lifetime earnings lost.[48] Moreover, $33 billion is spent annually on weight reduction products and services by individuals trying to lose weight.[49] As many as 40% of women and 24% of men use such products.[50]

It should also be noted that insurance coverage for obesity treatments is generally unavailable.[51] While insurance companies are willing to cover expenditures related to the complications of overweight, most plans do not provide coverage for preventive actions such as weight loss and management.[52] This general approach is displayed both in federal programs and private sector plans. At the federal level, Medicare, Medicaid, and the Child

Health Insurance Program (CHIP) exclude the costs of obesity-related treatments.[53] In the private sector, some managed care companies and health management organizations (HMOs) provide supports such as corporate wellness programs that provide assistance with weight management, prescription drugs, reimbursement for membership in weight loss programs, and surgery.[54] However, most of these programs require that there be some form of comorbid condition, such as Type II diabetes, before they cover these treatments.[55]

This absent and/or conditional coverage exists primarily because, as a rule, insurance companies do not recognize obesity as a disease. Obesity is perceived as an issue of personal responsibility and self-discipline, rather than a medical condition. Furthermore, there is a common conception that weight loss treatments are "fads" and are generally ineffective.[56]

However, there has been a recent trend in recognizing the legitimacy of obesity treatments. For example, the Internal Revenue Service has recently changed its regulations to allow expenses for weight loss to be taken as medical expense deductions. The instructions for preparing tax returns now read

> [y]ou can include in medical expense the cost of weight loss program undertaken at a physician's direction to treat an existing disease (such as heart disease). But you cannot include the cost of a weight-loss program if the purpose of the weight control is to maintain your good health.[57]

Thus, it would appear that policymakers are beginning to recognize the legitimacy of weight loss programs as forms of medical intervention, but it appears that there is still a long way to go before insurance companies recognize obesity, standing alone, as a serious and debilitating disease that requires prevention and specialized treatment.

VII. Significant Influences on Child Nutrition

A. PARENTS

Parents hold the ultimate responsibility for instilling good nutritional habits in children. They serve as both role models and regulators of proper eating behaviors. Virginia children report that parents hold the greatest sway over their eating habits, surpassing both teachers and peers.[58]

A study by the WIC Cool Kids Program further supports the impact of parents on the nutritional choices of children. The program conducted a pre-initiative assessment of the parents of overweight 2 to 4-year-old children enrolled in the WIC Program in nine districts across the Commonwealth.[59] The study found that children were following in the nutritional footsteps of their parents, who were predominately overweight and obese (31% overweight, 58% obese).[60] Moreover, both parents and children were regular consumers of high fat fare, eating an average of 10.6 and 11.3 of these foods per week, respectively.[61] Fifty-four percent of children's snacks were found to be high in fat and sugar.[62]

Rather than condemning parents, however, it is important to note that they face an uphill battle in modern society. Time for meal selection and preparation has become increasingly limited in most households, and parents report that, due to time constraints, they seek fast, convenient foods that require little preparation.[63]

Parents also tend to incorporate their children's preferences during meal planning, within reason.[64] This has become an increasing area of concern, as children are steadily bombarded with advertisements for fast food, candy, and unhealthy snacks. For example, television advertising during the peak viewing periods for young people (after school and Saturday mornings) is filled with fast food and candy commercials.[65] Research has found that 44% of the commercials shown on Saturday mornings are for foods that lack nutritional value, such as McDonald's, Burger King, and Pizza Hut.[66] Once a clever advertisement convinces children that these foods are desirable, they subject parents to great pressure to purchase these foods for them. In order to avoid making mealtime a "battleground," parents often give in to children's less healthy food preferences in order to keep the peace.[67]

Public agencies and organizations can assist parents in confronting these challenges to good nutrition. A statewide campaign, perhaps resembling the smoking cessation campaigns, may be the most effective way to educate parents regarding strategies to incorporate proper nutrition and physical activity into their family routines.

In addition, the Virginia Department of Health can take certain preventative and remedial actions to address the problem. For example, the WIC Program could make changes to its food packages to include more fresh fruits and vegetables and less high fat cheese and juice, and appropriate state funds for a WIC farmer's market program. The department could also, in conjunction with other state agencies, create an at-risk register for child obesity, providing motivated families with access to health professionals and psychological support. These system level changes may be the catalyst necessary to inspire parents to place greater emphasis on health and nutrition in their families.

B. SCHOOLS

The greatest portion of a child's day is spent in the school environment. Consequently, schools are in a strong position to impact children's nutritional habits by encouraging healthy choices and motivating them to eat well and to be physically active. Furthermore, schools contribute significantly to children's nutritional consumption. Over 619,000 school lunches and 162,000 school breakfasts are served every day to Virginia students, which amount to 112 million lunches and 30 million breakfasts annually.[68]

Studies show that school meals are meeting the nutritional demands of our children remarkably well. Research conducted by the U.S. Department of Agriculture found that participants in the National School Lunch Program, through which the federal government provides reimbursable meals to schools, were more likely to consume vegetables, milk and milk products, meat and other protein rich foods than non-participants.[69] These students were also found to have substantially lower intakes of added sugars and to consume less soda and fruit drinks.[70] Moreover, students who participate in the National School Breakfast Program have been found to have higher intakes of food energy, calcium, phosphorus, and Vitamin C.[71]

However, schools face numerous challenges that can inhibit their ability to promote high nutritional standards. These are discussed in greater detail in the following paragraphs.

1. Foods Sold in Competition with School Meals

The USDA has found that the greatest challenge to proper nutrition in schools is the sale of foods in competition with meals.[72] There are two classifications for this type of fare. The first, foods of minimal nutritional value (FMNVs), are foods which provide less than 5% of the Recommended Daily Intake (RDI) per serving for each of eight specified nutrients (protein, Vitamin A, Vitamin C, niacin, riboflavin, thiamine, calcium, and iron).[73] The second classification encompasses all other foods, which may include second servings of reimbursable school meals and foods that students purchase in addition to or in place of a reimbursable school meal.[74]

These competitive foods present diet-related health risks. Students prefer fast foods, sweetened beverages, and salty snacks when they are available. When children replace school meals with less nutritious foods and beverages, there is the risk that their daily dietary intake will be inadequate in key nutrients necessary for growth and learning.[75] Furthermore, when competitive foods are purchased in addition to school meals or in large quantities, there is likelihood of overconsumption and the risk of unhealthy weight gain.[76] Of additional concern is the fact that competitive foods may stigmatize participation in school meal programs. The sale of competitive foods can create the perception that school meals are only for poor children, rather than nutritional programs for all children.[77]

Due to these concerns, the USDA has taken steps to limit the consumption of FMNVs in schools. Under USDA regulations, a food or beverage sold *a la carte* must either be a recognized component of the food based meal pattern or contain a minimum of 5% of the RDI, per serving or per 100 calories, of one of the eight essential nutrients listed above.[78] The regulations prohibit the sale of the following ten foods of minimal nutritional value by school nutrition programs:

1. soda water;
2. water ices, except those containing fruit or fruit juices;
3. chewing gum;
4. hard candy;
5. jellies and gums;
6. marshmallow candies;
7. fondant;
8. licorice;
9. spun candy; and
10. candy coated popcorn.[79]

In addition, iced or hot coffee or tea may not be sold to students.[80] School food authorities are also required under the USDA regulations to establish rules as necessary to control the sale of FMNVs in food service areas during meal periods, in competition with reimbursable school meals.[81] State and school food authorities also have the option to impose other restrictions on all foods sold at anytime throughout their schools.[82]

The Virginia Board of Education has used this discretion to create stronger regulations on sales of competitive foods. Current standards prohibit the sale of FMNVs anywhere in a Virginia public school from 6:00 a.m. until the end of the scheduled breakfast period, and from the beginning of the first scheduled lunch period to the end of the last scheduled lunch

period.[83] Furthermore, the revenue from the sale of all foods and beverages during the protected periods must be credited to the school nutrition program account.[84]

It should be noted, however, that Virginia has not gone as far as some states in restricting the sale of competitive foods in schools. For example, the California Education Code includes a list of nutritious foods and requires that half of all foods offered for sale each day during regular school hours by any organization on school grounds must come from the list.[85] Limits have been set on the number of times student organizations can sell food items on campus and on the number of different types of food items they can sell.[86]

The West Virginia Board of Education has also taken more restrictive measures, creating regulations that prohibit the sale of the following foods at school *at all times*: chewing gum, flavored ice bars, candy bars, food or drinks containing 40% or more, by weight, of sugar or other sweeteners, juice or juice products containing less than 20% of real fruit or vegetable juice, and foods with more than eight grams of fat per ounce serving.[87] In addition, soft drinks are prohibited at all times in elementary and middle schools, and during breakfast and lunch periods in high schools.[88] It should be noted that states like West Virginia with more restrictive competitive food policies maintain rates of participation in school meal programs that are higher than the national average.[89]

Many school systems balk at the idea of completely eliminating the sale of competitive foods. The demand on the resources of schools is frequently overwhelming, and nutrition can be overlooked when schools seek additional revenue. Research has found that 69% of schools obtain additional funds through business partnerships with food and beverage companies.[90] These "pouring rights" contracts often have provisions to increase the percentage of profits schools receive when sales volume increases.[91] This creates incentive to promote soft drink consumption and to increase the times these products are available.[92] The prevalence of these contracts suggests that schools will be reluctant to support more rigorous nutritional standards unless substitute sources of revenue are available for underfunded programs.

2. Inadequate Dining Facilities and Short Meal Periods

The sale of competitive foods is not the only challenge to good nutrition in schools. Schools also face a number of systemic difficulties that can prevent students from consuming balanced nutritional meals. For example, the amount of space available for the preparation and serving of food is often inadequate.[93] In some schools limited seating capacity requires lunch periods to begin as early as 11:00 a.m. and end as late as 1:30 p.m.[94] Furthermore, the length of the lunch period is often too short to allow for waiting in lines and eating a complete meal.[95] This is particularly true in high schools, which often reduce the length of meal periods in an attempt to increase classroom time, and also frequently allow organizations to schedule activities during the lunch period.[96] With inadequate dining facilities and insufficient time to eat, many students turn to less nutritious foods that are readily accessible in vending machines and snack bars. Thus, the nutritional benefits of the reimbursable school lunches are lost for these children.

VIII. Potential Methods for Addressing Childhood Obesity in Virginia

In order to curtail the childhood obesity epidemic, it may be necessary for schools to take a fresh look at their facilities and curricula to ensure that health and nutrition are given adequate attention. Possible ways to promote health and nutrition within the school curriculum are discussed in the following paragraphs.

A. INSTRUCTION ON NUTRITION AND HEALTH IN THE CLASSROOM

One possible strategy is to integrate nutrition and physical activity into the regular curriculum. Schools adopting this approach would devote a portion of the curriculum to topics such as healthy eating, physical education, and nutrition and cooking skills. Such a strategy does not require schools to cut back on other forms of substantive instruction. For example, Louisiana Team Nutrition schools have created the Nutrition Across the Curriculum program, which provides lesson plans for grades Pre-K-12 that are designed to provide comprehensive delivery of nutrition information as well as educational content. Content areas include science, math, English, and social studies.[97]

B. NUTRITIONAL CODE OF CONDUCT WITHIN AND AROUND SCHOOLS

Under this strategy, schools would provide more healthy food options on school campuses and at school events and would place greater restrictions on the sale of foods of minimal nutritional value, including in vending machines. This would require school systems to evaluate the budgetary necessity of vending machines and to work with vendors to stock more healthy choices. Schools could also pursue this goal creatively, sponsoring events such as “taste-test fairs” of nutritious foods to promote nutrition in students.

C. WAYS FOR STUDENTS TO EAT A GOOD BREAKFAST

Breakfast has been found to be particularly important to school performance and has also been found to reduce absenteeism and tardiness.[98] Thus, it is particularly important to schools to ensure that students have a good, nutritional meal to start the day. The National School Breakfast Program has been successful in promoting breakfast consumption. However, some schools have gone further to ensure that students eat well in the morning. For example, the Maryland Meals for Achievement Classroom Breakfast Program, which began in 1998, offers school breakfast in the classroom each morning to all students, regardless of income.[99] All Maryland schools are eligible so long as they currently participate in the federal School Breakfast Program and have at least 40% of their enrollment approved for free and reduced-priced meals, provided that there is adequate state funding. For the 2002-2003 school year, the Maryland state budget allotted $1.9 million for the program, which will provide funding for approximately 100 schools across the state.

Researchers from Harvard University conducting a formal evaluation of the Maryland program found it to have a significant positive impact on student achievement.[100] The study also found that the program was associated with a number of beneficial effects, including an increase in student scores and grades, improved school attendance by about two days per school year, decreased tardiness and behavior problems, and increases in attention spans.[101]

D. PHYSICAL EDUCATION PROGRAMMING

Lack of activity during the school day can have a significant impact on student performance. Studies have shown that providing more opportunity for physical activity, even at the expense of class time, consistently leads to higher mathematics test scores.[102] Furthermore, intense physical activity programs have other positive effects such as increased concentration and reduced disruptive behavior.[103] Thus, it would be in the best interests of schools to incorporate sufficient time for physical education in every school day.

There are a number of avenues that school systems can pursue to accomplish this goal. First, they can require physical education at all school grades, rather than allowing the physical education requirement to taper off once students reach high school. In addition, they can ensure that all physical education classes have an appropriate student/teacher ratio—for example, no more than 25 to 1. Currently, the Virginia Board of Education regulations allow physical education teachers in the middle and secondary schools to instruct up to 1,000 students per week, while teachers of other subjects are limited to providing instruction for no more than 750 students per week.[104]

Schools can also actively promote student involvement in after-school physical activities. One method of doing this could be to offer "open gym nights" in local schools for all community residents, thus promoting greater physical activity for local residents of all ages.

E. OTHER SYSTEMIC CHANGES

There are a number of other systemic changes that schools can undertake to improve the nutritional habits of students. First, they can extend the lengths for meal periods and prohibit activities from being scheduled during the lunch period, to ensure that students have adequate time to eat a full meal. They can also give district food service directors control over all foods sold on school campuses.

Schools can also take action to specifically address the needs of those students with existing weight problems. For example, they can create "exercise on prescription" schemes for obese children through the school system to ensure that the heightened activity needs of children with weight issues are being met during the school day. In conjunction, they can also create a school referral system for obese children to go to local sports and activity groups. Additionally, they can distribute teacher information packets on tackling obesity and provide teacher training in nutrition and reducing the obesity stigma.

F. INITIATIVES TO ADDRESS CHILDHOOD OBESITY IN VIRGINIA

There are several initiatives sponsored by a number of different agencies and groups that are currently underway to address childhood obesity in Virginia. These are discussed further in the following paragraphs.

1. Virginia Action for Healthy Kids

Virginia's Action for Healthy Kids is one of 51 state teams (in each state and the District of Columbia) spawned by the national Action for Healthy Kids (AFHK) initiative. In 2002, the National Healthy Schools Summit brought together educators, legislators and other professionals in order to develop an action plan for promoting healthy schools. AFHK is a 501(c)(3) organization and represents an integrated national-state grassroots movement to

improve the health and educational performance of children through better nutrition and physical activity in schools.[†] In addition to the state teams, the AFHK has a national coordinating and resource group.

In Virginia, the AFHK Initiative is directed by the Virginia Cooperative Extension in collaboration with the Dairy Council (via the Southeast United Dairy Industry Association, Inc. and the Mid Atlantic Dairy Association) and is facilitated by a statewide task force of over 50 professionals, including representatives of:

American Cancer Society;
American Diabetes Association;
American Heart Association
Center for Health and Health Care in Schools;
Dairy associations,
Family, Career and Community Leaders of America., Inc.;
Hospitals;
International Food Information Council;
Local health departments;
Local departments of social services;
Physician and medical groups;
Schools;
U.S. Department of Agriculture;
University of Virginia;
Virginia Association for Health, Physical Education, Recreation and Dance (VAPHERD);
Virginia Center for Diabetes Professional Education;
Virginia Commonwealth University
Virginia Department of Education;
Virginia Department of Health;
Virginia Dietetic Association;
Virginia Parent Teacher Association;
Virginia Polytechnic Institute and State University;
Virginia School Food Service Association ; and
Women's Health Virginia.[105]

The three main goals of the task force are to:

1. Ensure that healthy snacks and foods are provided in vending machines, school stores, and other venues within the school control;
2. Provide age appropriate and culturally sensitive instruction in health and physical education; and
3. Encourage the use of school facilities for physical activity programs offered by the school and/or community-based organizations outside of school hours.[106]

2. Charlottesville Childhood Obesity Task Force (COTF)

The COTF was one of the earliest statewide initiatives to directly address childhood obesity, and was one of the models for the Virginia Action for Healthy Kids program. Several members of the COTF are now members of the Virginia Action for Healthy Kids program. The task force was established through the collaboration of numerous agencies in the Charlottesville area. It has a diverse membership, including public schools (Health Advisory

[†] For more information, see their website at http://www.ActionForHealthyKids.org.

Board, physical education teachers, food service), sports/recreation organizations, a community and a university hospital, pediatricians, dietitians, a legislative aide to a state delegate, the Virginia Extension Service, the Rural Health Outreach Program, and University of Virginia faculty.

Since established, the task force has actively pursued its goal of promoting nutrition and physical activity among local youth. It began by collecting and analyzing the height and weight data of fifteen rural grade schools (approximately 900 children/year) and seven city grade schools (approximately 300 children/year) for three years (1996-1998). It then conducted a survey of parents of children from kindergarten to eighth grade to help identify factors affecting eating habits and physical activity. Based upon returned surveys from 270 parents and further task force discussion, the COTF developed and presented a series of recommendations to the local school board.

The COTF followed these actions by conducting a half-day school/community summit on March 29, 2001. Since then, it has also awarded small grants provided by the local community hospital, Martha Jefferson Hospital, to six schools for pilot programs to reduce obesity. It also provides ongoing technical assistance to schools regarding child health and obesity issues.

3. Virginia Department of Health: Women, Infants, Children (WIC) Program Initiatives

The WIC Program has sponsored a number of initiatives aimed at combating the problem of childhood obesity. These initiatives focus on two different age groups: pre-school children and school-aged children.

Cool Kids Program

This program was targeted towards the parents of overweight 2 to 4-year-olds, and was designed to provide education on improving diet and physical activity patterns within the family.[107] Overweight children were identified through measured weights and heights when their age and gender specific BMI exceeded the 85th percentile.

Nine districts across the Commonwealth participated in the intervention. Parents of these children were invited to participate in an educational series on improving dietary and physical activity patterns to maintain body weight in a growing child. The intervention took place over a three-month period, and four contacts were made with each family. The instruction targeted both parents and children through interactive media, written brochures, staff-taught seminars and group discussions.

A pre-test and post-test assessment of participants was completed to examine the effectiveness of the intervention. The assessment found that there was a decrease in the percentage of children who were both at risk of overweight and overweight after the intervention (down from 37% to 33%).[108] However, there was no statistically significant change in the parents' body mass index or body mass index category after the intervention.[109]

Smart Move! Program

This initiative is currently being conducted by the Alexandria WIC Program.[110] The goal is to motivate both the staff and the program participants to become more physically active and to make more educated nutritional choices. The initiative has consisted of four phases: assessment, program development, staff motivation, and program implementation. During the assessment phase, 143 WIC participants were surveyed to measure their attitudes toward physical activity, their knowledge of the benefits of exercise, and their present level of physical activity. This was followed by the program development phase, in which an exercise physiologist and a WIC nutritionist developed protocols for including physical activity promotion, staff training materials, and patient education materials. Next, the staff physical activity initiative began, in which employees formed teams and competed to get at least 30 minutes of exercise on most days, with prizes awarded to the most successful teams. The initiative is now in the program implementation phase, in which employees give participants nutrition education materials promoting increased physical activity, including pamphlets, coloring books for children, and handouts on local resources. These materials are readily transferable to other programs and many are either free or can be copied.

FitWIC Program

In 1999, the USDA offered a three-year grant to five states, including Virginia. The goals of the grant program were to improve physical activity and nutritional habits among families enrolled in WIC, to implement client-based goal setting, and to promote and reinforce these principles in associated community organizations. There were several behaviors that were specifically promoted: active play of parents with children, limited TV watching, fun family meals, increased consumption of water, and increased consumption of fruits and vegetables. The underlying principle guiding this effort was the creation of strong parental role models for health and nutritional behaviors. The program used counseling and group education to promote these efforts.

The program was piloted in Fairfax County, with one intervention and one control group. Once the intervention was complete, the University of Virginia conducted a formal evaluation using these two comparison groups. This evaluation found that there were significant increases in parents' active play with children and in water consumption in the intervention group. Changes in other targeted behaviors were also found; however, they were not statistically significant. Due to the success of the initiative, the Virginia Department of Health is hoping to implement the program in all of the health districts.

4. Family Fitness Mini-grants

Family Fitness Mini-grants are offered through a partnership of the Virginia PTA/PTSA and the Virginia Association for Health, Physical Education, Recreation, and Dance. These $300 grants are available to local units, councils, and districts of the PTA/PTSA.[111] Each grant provides funds to plan family fitness programs and implement them. There are currently ten districts serving as grantees throughout the Commonwealth.

5. Virginia School Food Service Association (VSFSA)

The Virginia School Food Service Association is a certified branch of the American School Food Service Association (ASFSA).[112] Its membership consists of food service employees, managers, directors, nutritionists, and industry members who wish to promote and ensure good nutrition in Virginia's children. Certification through VSFSA has minimum education and

work experience requirements. There are numerous local chapters throughout the state that provide training, networking, and professional growth opportunities for food service workers.

6. Team Nutrition

Team Nutrition is a program sponsored by the USDA to assist schools in promoting nutrition and good health.[113] Participating schools receive USDA resources to plan and implement educational activities. The programming centers on three principles: the important role of nutritious school meals, the need for education on good nutrition, and the creation of a health-promoting school environment. The goal is to help students learn to eat healthy. The program also offers training grants that can be used to finance trainings for school food service personnel, the creation of informational materials for students, the creation of training curricula for teachers, and more.

IX. Recommendation

Childhood obesity is a serious health issue that substantially impacts the health and well-being of the Commonwealth's youth. It is crucial that policymakers determine the best tactics for promoting good health and nutrition in Virginia's youth to prevent greater spread of this frightening epidemic. As indicated, numerous agencies and programs throughout Virginia are responding to the threat that it poses at the community level. However, concerted statewide action may be the most effective method for addressing the problem.

Recommendation

Virginia Action for Healthy Kids, at the direction of Virginia Cooperative Extension, Virginia Tech, be requested to report to the Commission on Youth on the most effective and cost-efficient ways to prevent greater proliferation of overweight and obesity among the youth in Virginia by November 17, 2003.

X. Acknowledgments

Virginia Department of Health
Linda Foster, Office of Family Health Services
Peggy Paviour Brown, Thomas Jefferson Regional Health District and Task Force
Carol Pollock, School Age and Adolescent Health Nurse Consultant, Division of Child and Adolescent Health
Barbara Yager, Thomas Jefferson Regional Health District and Task Force

Virginia Department of Education
Catherine Diglio Grimes, Director, School Nutrition Programs

Southeast Dairy Association
Janet Grubbs, SFNS, Program Coordinator

[1] National Center for Health Statistics. (2000). *Prevalence of Overweight Among Children and Adolescents: United States. 1999-2000.* Centers for Disease Control and Prevention and National Center for Health Statistics. (2003). *National Health and Nutrition Examination Survey Data.* [Online]. Available: http://www.cdc.gov/nchs/data/hus/tables/2002/02hus071.pdf [January 2003].

[2] Troiano, Richard P. and Katherine Flegal. (1998). *Overweight and Adolescents: Description, Epidemiology, and Demographics.* Pediatrics. March 1998.

[3] U.S. Department of Health and Human Services. (2001). *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. [Online]. Available: http://www.surgeongeneral.gov/topics/obesity/calltoaction/toc.htm. [May 2003].

[4] Ibid.

[5] Strauss, Richard S. (2000). *Childhood Obesity and Self-Esteem.* Pediatrics. January 2000.

[6] U.S. Department of Health and Human Services. (December 13, 2001). *Press Release: Overweight and Obesity Threaten U.S. Health Gains; Communities Can Help Address the Problem, Surgeon General Says.* [Online]. Available: http://www.surgeongeneral.gov/news/pressreleases/pr_obesity.htm. [May 2003].

[7] Virginia Department of Health. (April 1, 2003). *Press Release: The Virginia Department of Health Says Overweight and Obesity Have Reached Epidemic Proportions in Virginia and the Nation.* [Online]. Available: http://www.vdh.state.va.us/news/PressReleases/2003/040103obesity.asp. [May 2003].

[8] U.S. Department of Health and Human Services. (October 8, 2002). *Press Release: Obesity Still on the Rise, New Data Show.* [Online]. Available: http://www.cdc.gov/nchs/releases/02news/obesityonrise.htm. [May 2003].

[9] Centers for Disease Control and Prevention and National Center for Health Statistics. *National Health and Nutrition Examination Survey Data*.

[10] Virginia Department of Health. (2000). *Follow-Up Study of the Nutritional Status of Fourth-Grade Children.* [Online]. Available: http://www.vahealth.org/nutrition/sac/report_study_2000.pdf. [May 2003].

[11] Virginia Department of Health. (2002). *WIC System: Nutritional Risk Report.* [Online]. Available: http://www.vahealth.org/wic/state_risk.doc. [March 2002].

[12] U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. (2001). *Foods Sold in Competition with USDA School Meal Programs: A Report to Congress*. Washington, D.C.

[13] Ibid.

[14] Jacobsen, M.F. (1999). *Liquid Candy: How Soft Drinks Are Harming America's Health.* Washington, D.C.: Center for Science in the Public Interest.

[15] Ibid.

[16] U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. Foods Sold in Competition with USDA School Meal Programs: A Report to Congress.

[17] Satcher, D. and M.T. Bradford. (2003). *Proper Diet and Exercise Are Keys to Improving Student Achievement.* American School Board Journal. March 2003.

[18] National Conference of State Legislatures. (2001). *Junk Food in Schools.* [Online]. Available: http://www.ncsl.org/programs/health/junkfood.htm. [May 2003].

[19] Cohen, Joel. (2000). *Overweight Kids: Why Should We Care?* Sacramento, CA: California Research Bureau. California State Library.

[20] Ibid.

[21] California Center for Public Health Advocacy. (2002). *National Consensus Panel on School Nutrition: Recommendations for Competitive Food Standards in California Schools*, Sacramento, CA; Action for Healthy Kids. (2002). *Fact Sheet: Nutrition, Physical Activity and Achievement.* [Online]. Available: http://www.ActionForHealthyKids.org. [May 2003].

[22] Virginia Department of Health. *Follow-Up Study of the Nutritional Status of Fourth-Grade Children*.

[23] Ibid.

[24] Ibid.

[25] Kendall, Nicole. (June 6, 2000). *Health Policy Tracking Service Issue Brief: State Activity; Physical Education.* [Online]. Available: http://stateserv.hpts.org. [May 2003].

[26] U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*.

[27] Virginia Department of Health. *Follow-Up Study of the Nutritional Status of Fourth-Grade Children*.

[28] Ibid.

[29] Virginia Department of Health, Office of Family Health Services. *Cool Kids Program.* [Online]. Available: http://www.vahealth.org/nutrition/execsumm.htm. [May 2003].
[30] Centers for Disease Control and Prevention. (2002). *Physical Activity and Good Nutrition: Essential Elements to Prevent Chronic Diseases and Obesity.* At a Glance.
[31] Kendall, Nicole. *Health Policy Tracking Service Issue Brief: State Activity; Physical Education*.
[32] Action for Healthy Kids. *Fact Sheet: Nutrition, Physical Activity and Achievement*.
[33] Ibid.
[34] 8 VAC § 20-131-80 (2003).
[35] 8 VAC § 20-131-90 (2003).
[36] 8 VAC §§ 20-131-50, 20-131-100 (2003).
[37] U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*.
[38] Virginia Department of Health. *Follow-Up Study of the Nutritional Status of Fourth-Grade Children*.
[39] Ibid.
[40] California Research Bureau. *Overweight Kids: Why Should We Care?*
[41] Ibid.
[42] Virginia Department of Health. *Follow-Up Study of the Nutritional Status of Fourth-Grade Children*.
[43] Moran, Rebecca. (1999). *Evaluation and Treatment of Childhood Obesity*. American Family Physician. February 15, 1999.
[44] Strauss, Richard S. *Childhood Obesity and Self-Esteem*.
[45] California Research Bureau. *Overweight Kids: Why Should We Care?*.
[46] *See, e.g.*, Gortmaker, Steven L., et al. (1993). *Social Economic Consequences of Overweight in Adolescence and Young Adulthood.* New England Journal of Medicine. 329. (p. 1008-12).
[47] U.S. Department of Health and Human Services. *Press Release: Overweight and Obesity Threaten U.S. Health Gains: Communities Can Help Address the Problem, Surgeon General Says*.
[48] See California Research Bureau. *Overweight Kids: Why Should We Care?*.
[49] Centers for Disease Control and Prevention. (1998). *Chronic Diseases and Their Risk Factors*.
[50] Ibid.
[51] Downey, Morgan, J.D. (2002). *Insurance Coverage for Obesity Treatments.* Bessesen, Daniel H., M.D. & Robert Kushner, M.D. (eds.), Evaluation and Management of Obesity. Philadelphia, PA: Hanley and Belfus, Inc. [Online]. Available: http://www.obesity.org/treatment/insurance2.shtml. [May 2003].
[52] Ibid.
[53] Ibid.
[54] Ibid.
[55] Ibid.
[56] Ibid.
[57] Internal Revenue Service Publication No. 502 (2000).
[58] Virginia Department of Health. *Follow-Up Study of the Nutritional Status of Fourth-Grade Children*.
[59] Virginia Department of Health. Office of Family Health Services. *Cool Kids Program*.
[60] Ibid.
[61] Ibid.
[62] Ibid.
[63] California Research Bureau. *Overweight Kids: Why Should We Care?*.
[64] Ibid.
[65] Gamble, Margaret. (1999). *A Quarter Century of Food Advertising Targeted at Children.* American Journal of Health Behavior. July 1999, (p. 261-267). Taras, Howard. (1995). *Advertised Foods on Children's Television.* Archives of Pediatric Adolescent Medicine. June 1995. (p.649-652).
[66] Ibid.
[67] Ibid.
[68] Virginia Department of Education, Office of Nutrition. *Frequently Asked Questions*. [Online]. Available: http://www.pen.k12.va.us/VDOE/Finance/Nutrition/faq.html. [May 2003].
[69] U.S. Department of Agriculture. (2001). *School Nutrition Dietary Assessment Study-II*. Washington, D.C.: U.S. Department of Agriculture. [Online]. Available: http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/SNDAIIfindsum.htm. [May 2003].
[70] Ibid.
[71] Ibid.

[72] National Conference of State Legislatures. *Junk Food in Schools*.
[73] Ibid.
[74] Ibid.
[75] U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. *Foods Sold in Competition with USDA School Meal Programs*.
[76] Ibid.
[77] Ibid.
[78] 7 CFR 210.11 (2001).
[79] 7 CFR 210 App. B (2001).
[80] Ibid.
[81] 7 CFR 210.11(b) (2001).
[82] Ibid.
[83] 8 VAC §§ 20-290-10, 20-580-60 (2003).
[84] Ibid.
[85] California Education Code, ch. 9, art. 2.5, § 49431. [Online]. Available: http://caselaw.lp.findlaw.com/cacodes/edc/49430-49436.html. [May 2003].
[86] Ibid.
[87] West Virginia Legislative Code § 126-86-4 (2003). [Online]. Available: http://wvde.state.wv.us/policies/p4321.1.html. [May 2003].
[88] Ibid.
[89] U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. *Foods Sold in Competition with USDA School Meal Programs*.
[90] Ibid.
[91] National Conference of State Legislatures. *Junk Food in Schools*.
[92] Ibid.
[93] U.S. Department of Agriculture; Food, Nutrition, and Consumer Services. *Foods Sold in Competition with USDA School Meal Programs*.
[94] Ibid.
[95] Ibid.
[96] Ibid.
[97] Louisiana Department of Education. *Nutrition Across the Curriculum: Lesson Plans for Grades PreK-12*. [Online]. Available: http://www.doe.state.la.us/DOE/dna/AcrossTheCurriculum/23webtableofcontents.asp.
[98] Action for Healthy Kids. *Fact Sheet: Nutrition, Physical Activity and Achievement*.
[99] Maryland State Department of Education. *Maryland Meals for Achievement Classroom Breakfast Program*. [Online]. Available: http://www.msde.state.md.us/programs/foodandnutrition/MMACBPP.htm. [May 2003].
[100] Ibid.
[101] Ibid.
[102] Shephard, R.J., Volle, M., Lavalee,, M., LaBarre, R., Jequier, J.C., Rajic, M. (1984). *Required Physical Activity and Academic Grades: A Controlled Longitudinal Study.* Limarinen and Valimaki, (eds.). Children and Sport. Berlin: Springer Verlag.
[103] Symons, C.W., Cinelli, B., James, T.C., and Groff, P. (1997). *Bridging Student Health Risks and Academic Achievement Through Comprehensive School Program.* Journal of School Health. 67(6). (p. 220-227).
[104] 8 VAC § 20-131-240 (2003).
[105] Virginia Action for Healthy Kids Website. [Online]. Available: http://ext.vt.edu/actionforhealthykids/.[August 2003].
[106] Ibid.
[107] Virginia Department of Health, Office of Family Health Services. *Executive Summaries.* [Online]. Available: http://www.vahealth.org/nutrition/execsumm.htm#coolkids. [May 2003].
[108] Ibid.
[109] Ibid.
[110] Virginia Department of Health, Office of Family Health Services. (2001). *Executive Summaries.* [Online]. Available: http://www.vahealth.org/nutrition/execsumm.htm#smartmove. [May 2003].
[111] Virginia Parent Teacher Association. *Health Mini-Grants.* [Online]. Available: http://vapta.org./Committees/Health/minigrants.htm. [May 2003].
[112] Virginia School Food Service Association Website. [Online]. Available: http://www.vsfsa.org. [May 2003].
[113] Team Nutrition Website. [Online]. Available: http://www.fns.usda.gov/tn/. [May 2003].