The Impact of Childhood Obesity and Overweight

Childhood obesity is a growing epidemic and is linked with a variety of poor physical, social, and emotional outcomes. Over the past three decades the childhood obesity rate has more than doubled for preschool children ages 2-5 and tripled for children ages 6-11. Therefore, more children are being diagnosed with weight-related diseases such as diabetes and hypertension. These health problems are likely to continue into adulthood. Some estimates show that the obesity epidemic will shorten our lifespan and suggest that, without some intervention, today’s children will have shorter and less healthy lives than their parents for the first time in modern history. 1 Beyond the health consequence of childhood obesity, research has shown that children who are overweight are often victimized by their peers and are more vulnerable to depression, anxiety and low self-esteem. They are also more likely to perform poorly in school. 2

According to a recent survey of Northern Virginia parents, approximately 15% of Fairfax County children ages 2-18 are overweight. The study showed many startling inequities by race, ethnicity, and income, as illustrated by the figure below. 3

An obesity epidemic has long-term financial consequences for our society. If we do not address the issue of childhood overweight and obesity now, we will be faced with an overwhelming combination of aging and adult obesity which can have repercussions for our workforce, health care and social services systems, and the overall well-being of our community.

It is important to note that some well-intentioned weight management efforts, when paired with media images and social norms, have inadvertently supported eating disorders such as bulimia, anorexia, and over-eating. It is crucial that our efforts focus on building and supporting good habits among young people, rather than solely placing emphasis on losing weight. While our overall intent is to ensure that all Fairfax County residents achieve a healthy weight, our goal is to encourage healthy habits in our children and their families and to ensure that All Children are Physically Fit with Good Nutritional Habits.

Selected Indicators: How Are We Doing?

In selecting indicators to measure our success, the Goal Group was careful not to focus solely on children’s weight. Children who are physically fit with good nutritional habits are likely to be at a healthy weight and have adopted healthy behaviors. At this time, little data has been collected about healthy weight and habit indicators. However, we have local baseline data from the Professional Research Consultants (PRC) Report, commissioned by Inova Health Systems 2 which offers parent-reported data on children ages 2-18 in Fairfax County. Additional baseline data for nutrition and physical activity will be collected from the 2008 Fairfax County Youth Survey (FCYS). This self-reported data will be gathered, anonymously, from middle and high school youth.

Healthy People 2010 is a set of health objectives for the Nation and is considered the cornerstone for prevention, intended to increase quality of life and eliminate health disparities. Where possible, the Healthy People 2010 Target is identified with the indicators below.
The following indicators were selected to measure our progress in ensuring that *Children and Youth are Physically Fit with Good Nutritional Habits*.

**Indicator 1:** Percent of youth consuming 5 or more fruits and vegetables per day

**Indicator Description:** Children and families are encouraged to eat their greens, reds, yellows and purples for vision and heart health, a healthy immune system, strong bones and teeth, memory function and lower risk of some cancers. In Fairfax County, 28% of children aged 2-18 consume five or more servings of fruits and/or vegetables per day. This percentage is even lower among African-Americans and among children living in poverty.  

a. Percent of children and youth consuming 2 or more servings of fruit per day (Ages 2-18, PRC )  
   **Baseline (Overall): 61%**

![Percent of Fairfax County Children (ages 2-18) Consuming 2 or more Fruits Per Day](chart1)

b. Percent of children and youth consuming 2 or more servings of vegetables per day (Ages 2-18, PRC )  
   **Baseline (Overall): 27%**

![Percent of Fairfax county Children (2-18) Consuming 3 or more Vegetables Per Day](chart2)
c. Percent of children and youth consuming 5 or more fruits and vegetables per day (by race/ethnicity and poverty status)

![Percent of Fairfax County Children (ages 2-8) Consuming 5 or more servings of fruits and vegetables per day](image)

(Middle and High School Students, FCYS)

**Baseline available summer 2008**

**Indicator 2: Percent of children and youth participating in vigorous physical activity 3 or more times a week:**

**Indicator Description:** Moderate to vigorous physical activity is vital to maintaining a healthy weight and overall good health. While many school-aged children are active, physical activity declines sharply in adolescence. Children who are raised in active families tend to stay active as adults. A total of 84.7% of school-aged children/adolescents, aged six to eighteen, in Fairfax County participate in vigorous physical activities three or more times per week for at least 20 minutes at a time (vigorous activity refers to participation in activities that cause heavy sweating or large increases in breathing or heart rate at least 3 times a week for 20 minutes at a time). Activity levels are notably lower in girls, among African Americans, and in children living in poverty.

(Ages 6-18, PRC)

**Baseline:** 85%

![Percent of Fairfax County Children (ages 6-18) Participating in Vigorous Physical Activity at Least 3 Times Per Week](image)

(Middle and High School Students, FCYS)

**Baseline available summer 2008**
Indicator 3: Body Mass Index (BMI)-for-age-Percentile: BMI > 95th percentile

Indicator Description: The recommended method of tracking BMI in children is different from that of adults (a height/weight ratio). The Center for Disease Control and Prevention (CDC) and American Academy of Pediatrics (AAP) recommend using the BMI-for-age percentile for children. It is described as: “In the same way that people’s height and weight change as they grow, the normal and healthy BMI changes in terms of percentiles as kids grow and the ratio of bone to muscle changes.”[1] The Healthy People 2010 objective is to reduce the number of children and adolescents who are overweight or obese to 5% (as defined by the gender- and age-specific 95th percentile of BMI). The data is not currently collected in Fairfax County.

However it is the recommendation of this group that a process and resources be identified to begin collecting BMI-for-age-Percentile. This will be addressed further in the Recommendation Section below.

Ages: TBD
Baseline: Not Yet Available

Indicator 4: Percent of children meeting Wellness Zone criteria for Aerobic Capacity

Indicator Description: Acceptable levels of aerobic capacity are associated with reduced risk of high blood pressure, coronary heart disease, obesity, diabetes, and other health problems in adults. Aerobic capacity, perhaps the most important area of fitness, is a measurement of the amount of oxygen delivered to the working muscle per unit of time (e.g. liters of oxygen/minute). A laboratory measurement of maximal oxygen uptake is considered the best measure of aerobic capacity. However, the three tests used in the Virginia Wellness fitness testing program (pacer, one-mile run and mile walk) have proven to be valid and reliable indicators of VO2 max. Fairfax County Public schools administers this battery of tests several times each school year for students in grades 4 through 10. Results are available on a district level and by individual school. Wellness zone criteria for males and females by grade level has been determined by the research of the Cooper Institute led by Kenneth Cooper4.

Ages: 9-16

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Root Cause Analysis

Body weight is influenced by multiple factors including genetics, age, gender, health/disability status, environment, and lifestyle. While some of these factors are beyond an individual’s control, lifestyle can be controlled. Individual choice can play a major role and the environment can have a broad impact on lifestyle choices. The following analysis looks at several factors that can influence a healthy or non-healthy lifestyle, including physical activity and nutrition.

Limited Skills and Knowledge

A lack of knowledge and understanding of the benefit of physical activity and nutrition, as well as the skills to make healthy choices is a major factor contributing to both adult and childhood obesity. For example, knowledge of the nutritional value, caloric content, appropriate serving sizes, and the skills to apply that knowledge to one’s choices could have a significant impact on health and healthy weight. An understanding of other factors including the role of adequate sleep or the impact of sedentary “screen time” (i.e. TV, computers, video games) can support a person’s ability to change behaviors. Individuals must have sufficient knowledge and skills in order to make healthy food and exercise choices. Any effort to change individual behaviors will need to address those gaps in skills and knowledge.

Cultural Norms and Role Models

Recent research has shown that social networks have a significant influence on weight gain. Both healthy and unhealthy behaviors can spread over a range of social ties. This research supports the idea that families and other role models can have an impact on one’s behaviors, values, and perspectives. Behavior change must take into account family and peer social norms and support adults in understanding and modeling healthy behavior.

Additionally, cultural norms and perspectives on food and physical activity can have repercussions for children and their families, as can the challenges sometimes faced with acculturation. Given the cross-cultural disparities seen in both weight and healthy behaviors, it is vital that programs and strategies understand and address cultural beliefs, standards, and practices. Incorporating culturally-based food preferences in programs and messages, as well as recognizing and acknowledging varying perspectives on physical activity will ensure broader participation, but also lead to increased behavior change and improved health.

Impact of the Media and Screen Time

Research has shown that 11-14 year-olds spend up to seven hours a day using media, including television, computers, and video games (commonly referred to as “Screen Time”). Forty-one percent of Fairfax County parents report that their children watch at least two hours of TV on a typical school day. Twenty-nine percent report at least two additional of entertainment-related screen time on a typical school day. During this time children are confronted with marketing and advertising messages that promote candy, sugary cereals, and fast food. They spend much of their time using these media while not being physically active. Media messages can be powerful and confusing for children and adults. Media is designed to send both subtle and overt messages about body image and social norms. Additionally, screen time is physically passive entertainment that replaced opportunities for children and families to be physically active. One study suggested that for each hour of television children watch, the probability that they will become obese increases by two percent. Additionally, the American Academy for Pediatrics recommends that children’s total media time should be limited to no more than 1 - 2 hours per day and that children under age two should be discouraged from any television viewing.
Convenience and Affordability of Nutritious Foods

Access to healthy food is not only determined by individual choice, but also by what is available to buy and what people can afford to purchase. Multiple barriers including physical, economical, and time constraints can influence an individual’s access to healthy foods. While physical access to supermarkets may be limited in some areas, an abundance of inexpensive, fast-food options may be readily accessible. Healthy diets which include lean meats, fish, and fresh meats are also more expensive than high-fat, energy-dense diets. In some families, the demands of working parents, long commutes, and busy lives can lead to poor dietary choices.

Access to Physical Activity and Recreation

Limited access to physical activity and recreation, whether real or perceived, can have a marked impact on an individual’s ability to improve their own physical fitness. In some cases, individuals are simply unaware of the physical activity and recreation opportunities available to them. But in other cases, issues of safety or the physical space of neighborhoods can impact healthy options and physical activity levels. Physical space might include the distances between home and work, the look and feel of a streetscape, and the presence or lack of parks, open space, or other community settings where people spend their leisure time or congregate socially. In many areas, pedestrian safety is of vital concern and can be a limiting factor. Parents may have concerns for their child’s physical safety, limiting their options for outdoor activities when parents are working or away from home. Research has shown that communities with lower incomes, higher poverty rates, and higher proportions of racial and ethnic minorities are most at risk for being sedentary and overweight. Effective strategies must address both the real and perceived access issues. Additionally, a national trend that de-emphasizes physical education in schools may be linked to the obesity epidemic.

How Can We Make a Difference?

Addressing healthy habits in individuals requires a multi-faceted approach. Individual skills and knowledge, social influences, and cultural norms interact with external factors, such as structural and economic constraints, to contribute to poor habits and unhealthy weight. The role of family cannot be underestimated in ensuring healthy habits in children. Family members not only serve as role models for behavior, but can also have a profound impact on values, beliefs, and behaviors. These recommendations recognize individual choice and lifestyle, but also recognize that external forces must also be addressed to facilitate behavior change and offer a combination of approaches to environmental changes and education on lifestyle choices.

Recommendation 1: Convene a multi-disciplinary Coordinating Council. Identify financial resources to support a coordinator to staff the Council, leverage resources, and coordinate countywide healthy-weight efforts and activities associated with this initiative. The Council will:

- coordinate and oversee countywide efforts
- monitor population results and program effectiveness
- develop partnerships between public and private sectors to leverage resources and educate the community
- coordinate with regional and state initiatives
- create and identify opportunities for training, capacity building, and workforce development
- examine environmental policies and practices that allow children to receive positive messages, nutritious healthy food choices, and healthy physical activity opportunities
- address the remaining recommendations in this report
Recommendation 2: Develop a comprehensive plan for countywide implementation of programs, communication, incentives, and initiatives that create healthy lifestyles and environments. This plan should include:

- information on existing programs and best practices
- strategies to maximize the Prevention Fund to build capacity in the community
- effective programs with clear outcomes that focus on physical activity and nutrition
- consistent messages and provide practical supports for healthy lifestyles
- training and capacity-building for direct-services staff
- coordination with the County employee wellness efforts and incentives
- coordination with the school wellness policy
- neighborhood and geographically-targeted strategies that emphasize community participation
- parent/family education opportunities
- incentives that encourage physical activity and good nutrition in the general population
- additional consideration on how to collect fitness data on children in grades K-3 (perhaps using the 6 minutes walk test, which is available and standardized for use)

Recommendation 3: Develop and implement a social marketing campaign designed to change behaviors and social norms. Social marketing campaigns apply commercial marketing strategies to influence voluntary behavior. Campaigns aimed at changing health related habits including increased physical activity, improved nutritional habits, and decreasing screen time have been shown to be effective in other jurisdictions.

Recommendation 4: Work with Fairfax County Public Schools (FCPS), the health department, and other community providers to develop a strategy for collecting BMI-for-age percentiles in a cost effective, sensitive, and accurate manner. While there is general support for the concept of collecting BMI-for-age-percentiles for Fairfax County children, concerns regarding the accuracy and feasibility of collecting this data have been raised. There are also concerns regarding the negative consequences of labeling children as overweight or obese and around parent notification. These issues must be addressed in a way that takes into account the needs of the children, ethical considerations around notification and opt-out, as well as workload issues and cost.

In Summary

In order to be successful, all of these efforts must be look beyond the individual and engage our communities, families, schools, local government, faith communities, community organizations, and private businesses. A comprehensive and multidisciplinary approach will have a better chance for success and sustainability and will be more likely to support long-term and healthy lifestyle choices.


