

Reform Composition:
**Fighting America's Health Crisis by Reaffirming the Role of Physical Education in
Modern Public Education**

Brett J. Gallagher

Seminar in Educational Studies, Fall 2004

In the United States today, children's poor physical health has become a national concern. Much of the recent literature pertaining to the status of children's health today is written in shocking language, as in: "Obesity in kids is now epidemic in the United States."¹ However, such alarming wording seems to be justified. According to Carol Torgan, Ph.D., "The number of children who are overweight [in the U.S.] has doubled in the last two to three decades; currently one child in five is overweight. The increase is in both children and adolescents, and in all age, race and gender groups." Such data is certainly indicative of a widespread decline in children's health in the United States, especially in the areas of nutrition and physical activity. It is important to note that the rise in overweight and obesity is occurring in all sectors of society. This problem is not limited to particular groups, and therefore one can hypothesize that the causes are prevalent throughout American society, rather than specific geographic regions, cultural groups or other social divisions.

Issue Assessment:

The Obesity Crisis in the United States and the Role of Physical Activity

¹ Torgan, Carol (June 2002). Childhood Obesity on the Rise. *Word on Health – National Institutes of Health*. Retrieved November 8, 2004 from <http://www.nih.gov/news/WordonHealth/jun2002/childhoodobesity.htm>.

What's The Problem?

Obesity and overweight are rising in the United States at extremely high rates. Figure 1 (attached), from a 2004 report by the Centers for Disease Control, clearly demonstrates how the percentages of adults who are obese in the US have risen over from 1991 to 2002. For example, in 1991, no state reported an adult obesity rate of more than 19%, and 9 (Colorado, Georgia, Massachusetts, Montana, New Jersey, New Mexico, Rhode Island, Utah, and Washington) reported rates of less than 10%. In 2002, on the other hand, no state reported a rate of less than 15%, and 3 (Alabama, Mississippi, and West Virginia) had adult obesity rates of more than 25%. According to the Office of the Surgeon General, “an estimated 61 percent of U.S. adults were overweight or obese” in 1999, and the increases in recent years “cut across all ages, racial and ethnic groups, and both genders.”² These increases have extended to children as well. The CDC reports “[o]f children and adolescents aged 6-19 years, 15% - about 9 million young people – are considered overweight.”³ That percentage of overweight children has more than doubled over the past 20 years.⁴ Today, more and more Americans from all demographic groups are living with unhealthy amounts of excess weight.

There is a large body of research detailing the many health risks associated with obesity and overweight. According to the Surgeon General:

Morbidity from obesity may be as great as from poverty, smoking, or problem

² U.S. Department of Health and Human Services: Office of the Surgeon General. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Washington: GPO, 2001. pp. XIII, 10. Retrieved November 10, 2004 from <http://www.surgeongeneral.gov/topics/obesity>.

³ U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. *Physical Activity and Good Nutrition: Essential Elements to Prevent Chronic Diseases and Obesity*. 2004. 2. Retrieved November 10, 2004 from http://www.cdc.gov/nccdphp/aag/aag_dnpa.htm.

⁴ Centers for Disease Control and Prevention, 2.

drinking. Overweight and obesity are associated with an increased risk for coronary heart disease; type 2 diabetes; endometrial, colon, postmenopausal breast, and other cancers; and certain musculoskeletal disorders, such as knee osteoarthritis.⁵

These diseases have a significant impact on one's life expectancy: "Individuals who are obese... have a 50 to 100 percent increased risk of premature death from all causes compared to individuals [with a healthy weight.] An estimated 300,000 deaths a year may be attributable to obesity."⁶ Additionally, obese children are at increased risk of sleep apnea, which has been linked to problems with learning and memory.⁷ Excessive weight contributes to many deadly diseases and conditions, and statistics show that more Americans are placing themselves at risk every year. The potentially fatal effects of these conditions make unhealthy weight a national crisis that is too widespread and too dangerous for educators and communities to ignore.

Unhealthy weight can also have dramatic effects on individuals' self-esteem and socialization. "Overweight and obese individuals... may suffer from social stigmatization, discrimination, and poor body image."⁸ Overweight children, through this social discrimination from their peers, "can develop low self-esteem and depression."⁹ Unhealthy lifestyles affect the whole child. Through social isolation, low self-esteem and poor self-image, overweight can easily lead to poor psychological health as much as it can lead to poor physical health. Also, poor physical and psychological health can work together against the individual. That is, depression caused by social isolation can weaken

⁵ Office of the Surgeon General, 8.

⁶ Office of the Surgeon General, 8.

⁷ Torgan.

⁸ Office of the Surgeon General, 8.

⁹ Torgan.

a child's motivation to improve his or her physical fitness, worsening the child's physical condition and creating a downward spiraling effect.

Additionally, childhood weight control problems (and their accompanying health risks), more often than not, persist into adulthood. In general, "teens' positive and negative behaviors in adolescence tend to carry over into adulthood;"¹⁰ this includes not only behaviors such as smoking and alcohol consumption, but also eating habits and physical activity. "Overweight adolescents have a 70 percent chance of becoming overweight or obese adults."¹¹ Thus, it is critically important to combat overweight at a young age. Children with weight problems are likely to carry those problems into adulthood unless they are addressed and eliminated in childhood. Childhood issues of overweight and obesity that can (and often do) easily develop long-term dangers that have been proven to have drastic impacts on physical and mental health.

How Do Weight Problems Arise in Children?

The causes of overweight are essentially twofold: poor dietary habits and insufficient physical exercise. "Research shows that good nutrition lowers people's risk for many chronic diseases, including heart disease, stroke, some types of cancer, diabetes, and osteoporosis." However, "[o]nly 21% of young people eat the recommended five or more servings of fruits and vegetables each day."¹² Our bodies are composed of what we eat; when we eat poorly, our bodies suffer. However, nutrition is only part of the problem.

¹⁰ Hatcher, Juliet L. and Juliet Scarpa (June 2002). *Child Trends Research Brief: Encouraging Teens to Adopt a Safe, Healthy Lifestyle: A Foundation for Improving Future Adult Behaviors*. Retrieved November 8, 2004 from http://www.childtrends.org/_catdisp_page.cfm?LID=141.

¹¹ Torgan.

¹² Centers for Disease Control and Prevention, 2.

Children also need to live physically active lives to burn off excess calories and keep their bodies physically fit. Many children are not leading such lives. For example, “More than a third of young people in grades 9-12 do not regularly engage in vigorous physical activity.”¹³ The Surgeon General recommends “at least 60 minutes of moderate physical activity most days of the week,” and while there is no national data to assess how well this standard is being met, in 1997, only “65% of adolescents reported participating in vigorous activity for 20 minutes or more 3 [days a week.]”¹⁴ Although it is difficult to interpret this data in relation to the Surgeon General’s guidelines, one can safely acknowledge that a full 35% of American adolescents are not even getting 20 minutes of vigorous exercise 3 days a week. Such a number represents a huge number of children. Additionally, “[r]esearch has demonstrated that virtually all individuals can benefit from regular physical activity.”¹⁵ That is, very few children are at risk of serious physical harm by exercising regularly. Rather, the greater harm comes from ignoring government guidelines and succumbing to sedentary lifestyles.

How Does Physical Education Fit Into This Situation?

As stated earlier, regular physical activity has profound effects on personal health and fitness. It reduces the risk of developing many life-threatening conditions and generally improves life expectancy.¹⁶ Among children, physical education classes are a great way to meet these exercise needs. The Surgeon General recommends that schools

¹³ Centers for Disease Control and Prevention, 2.

¹⁴ Office of the Surgeon General, 2.

¹⁵ U.S. Department of Health and Human Services (June 2002). *Physical Activity Fundamental to Preventing Disease*. Retrieved November 2 from aspe.hhs.gov/health/reports/physicalactivity.

¹⁶ *Physical Activity Fundamental to Preventing Disease*.

“[p]rovide all children, from kindergarten through grade 12, with quality daily physical education that helps develop the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active for life.”¹⁷ Such a commitment to physical education would ensure that all children in our schools get the physical activity they need as part of a healthy lifestyle. Furthermore, it would instill a long-term commitment to physical activity in those children, such that those children would maintain their healthy lifestyles well into adulthood. Additionally, “[w]eight-bearing physical activity is essential for normal skeletal development during childhood and adolescence and for achieving and maintaining peak bone mass in young adults.”¹⁸ All children need regular exercise for proper body development as well as weight control and disease prevention; it is part of our natural growth to need physical activity, and without it our bodies are at risk for severe physical problems.

Physical education has other great benefits as well. For example, “[s]tudies have found participation in physical activity increases adolescents’ self-esteem and reduces anxiety and stress. Through its effects on mental health, physical activity may help increase students’ capacity for learning.”¹⁹ Additionally, “[r]egular physical activity reduces morbidity and mortality from mental health disorders... In adults with affective disorders, [it] has a beneficial effect on symptoms of depression and anxiety.”²⁰ Thus, exercise not only improves one’s physical health, but one’s mental health as well. As overweight often leads to low self-esteem and depression, it is important to note that exercising regularly can cure both the condition (overweight) and one of its symptoms

¹⁷ Office of the Surgeon General, 20.

¹⁸ *Physical Activity Fundamental to Preventing Disease.*

¹⁹ *Physical Activity Fundamental to Preventing Disease.*

²⁰ *Physical Activity Fundamental to Preventing Disease.*

(depression).

Unfortunately, as school budgets tighten and schools struggle to meet the demands of standards-based reforms, many physical education programs have been drastically weakened. For example, under budgetary pressure, some Hamilton County (TN) schools “have cut P.E. instruction from 45 minutes a week to 30 minutes.”²¹ In Wisconsin, “[a]s school budgets suffer under revenue controls and increasing pressure from the [No Child Left Behind Act,] physical education classes, athletic programs, and extracurricular sports are becoming targets for school boards.”²² Programs aimed at promoting healthy living are often the first to be cut or reduced by school boards worried about adequately covering the so-called “core subjects” (i.e. Mathematics, Science, Reading). However, considering how eating and exercise behaviors learned in childhood persist into adulthood, it would seem that appropriate health education should be promoted as a primary area of learning for the long-term health of our students.

Ironically, as educators cut health and fitness programs to slash budgets, it has been documented that poor health resulting from obesity and overweight has considerable financial costs. According to a study by the National Institutes of Health, “[I]n 2000, the total cost of overweight and obesity was estimated to be \$117 billion... The [Federal] Medicare and Medicaid programs currently spend \$84 billion annually on five major chronic conditions that could be significantly improved by increased physical activity...”²³ With school districts across the country struggling to find funds and cut

²¹ Carroll, Beverly A. “School exercise cuts spur obesity worries.” *The Chattanooga Times Free Press* 14 October 2004. Retrieved November 10, 2004 from www.msnbc.msn.com.

²² Hurley, Ryan. “Physical education, extracurricular sports suffer under budget strains.” *OnWEAC: Wisconsin Education Association Council* 1 June 2004. Retrieved November 10, 2004 from <http://www.weac.org/News/2003-04/jun04/phyed.htm>.

²³ *Physical Activity Fundamental to Preventing Disease*.

programs to balance budgets, it seems especially wasteful that the United States is forced to spend so much on health care costs for preventable diseases. If school districts across the country committed to effective physical education programs and made real progress in fighting obesity in children, it can be anticipated that these costs would decrease dramatically. Not only would those programs essentially “pay for themselves,” but America’s children would be healthier, both physically and psychologically, and more likely to carry that improved health into adulthood.

Reform Initiative

Physical Education Reform

Where Do We Go From Here?

Knowing the full extent of the nation's current health crisis and all of its ramifications, what can be done? Is physical education really a viable solution? Many (including this author) believe so. Some examples: "Physical exercise is an excellent means of controlling weight;"²⁴ "...randomized controlled trials have shown that weight loss (as modest as 5 to 15 percent of excess total body weight) reduces the risk factors for at least some diseases, particularly cardiovascular disease;"²⁵ "Regular physical activity along with a nutritious diet is key to maintaining a healthy weight... Because physical inactivity is a risk factor for many diseases and conditions, making physical activity an integral part of daily life is crucial."²⁶ As stated earlier, proper nutrition and regular exercise have been proven to be the primary elements of healthy living. Through health and physical education classes, schools can educate students on how to live a healthy lifestyle and give them the time and opportunity to engage in necessary physical exercise.

Schools Need to Educate!

According to some definitions, especially those used by many in positions of power in education today, the purpose of education is to prepare students for adult life. Such preparation should include health and fitness education. To begin with, we must make

²⁴ Greene, Leon and Matthew Adeyanju. "Exercise and Fitness Guidelines for Elementary and Middle School Children." *The Elementary School Journal* Vol. 1 No. 5, Special Issue: Sports and Physical Education (May, 1991): 439.

²⁵ Office of the Surgeon General, 14.

²⁶ *Physical Activity Fundamental to Preventing Disease.*

sure that our educators are well versed in what constitutes healthy living so that they can explain and model those behaviors to their students. Along that vein, the Surgeon General recommends that schools “[b]uild awareness among teachers, food service staff, coaches, nurses, and other school staff about the contribution of proper nutrition and physical activity to the maintenance of lifelong healthy weight.”²⁷ Everyone in the schools, not just those directly involved with health and physical education programs, should be educated about these issues such that they can model healthy choices for their students and advise those students, if necessary, on these matters. Obesity and overweight are problems that affect students all through the day, not just in certain classes. It is important to reinforce healthy behaviors whenever possible and reassure students that those behaviors can and do have positive impacts on one’s physical health, body image and self-esteem.

Furthermore, schools need to provide quality health education to teach students how to live healthy lives and what that entails. Students often do not know what a balanced diet is, what appropriate food portions are, or how much physical activity is truly necessary on a daily basis to maintain a healthy weight. Certainly, parents can and should play an important role in this education. The Centers for Disease Control and Prevention report, “Only about one-fourth of U.S. adults eat the recommended five or more servings of fruits and vegetables each day. In addition, in the last 30 years, calorie intake has increased for both men and women.” The report goes on to say, “Poor eating habits are often established during childhood.”²⁸ Children, especially younger children, model their habits and behaviors on their parents’ habits and behaviors. It is important to inform parents about healthy nutrition and exercise so that they can then educate their children

²⁷ Office of the Surgeon General, 19.

²⁸ *Physical Activity and Good Nutrition: Essential Elements*, 2.

about these behaviors (and hopefully model them as well).

However, we should not ignore the importance of health education in the schools by simply saying, “It’s the parents’ responsibility to teach that at home.” Health education can, at best, supplement messages from parents about appropriate nutrition and exercise, and at worst pick up the slack for parents who neglect to educate their children on these matters. The Surgeon General calls on schools to “[p]rovide age-appropriate and culturally sensitive instruction in health education that helps students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain, and enjoy healthy eating habits and a physically active lifestyle.”²⁹ That is, schools have an ethical responsibility to ensure that their students are well educated in proper nutrition and exercise, no matter how well parents do at teaching their children the basics of healthy living.

Schools Need to Provide Time and Space for Physical Activity!

Physical education should provide an opportunity for students to receive the regular physical activity their bodies need. The Surgeon General recommends “at least 60 minutes of moderate physical activity most days of the week,”³⁰ while the CDC writes, “Youth should strive for at least one hour of exercise a day.”³¹ Either way, based on the story of schools in Hamilton County, TN,³² many students are not receiving this level of activity. Again, it is up to public education to ensure that children our living healthy lives, and therefore schools need to use physical education as a vehicle for fostering and promoting physical activity. Such classes should occur on a daily basis to make sure

²⁹ Office of the Surgeon General, 20.

³⁰ Office of the Surgeon General, 2.

³¹ *Physical Activity Fundamental to Preventing Disease*.

³² Carroll, Beverly A.

every student is getting sufficient exercise.

Also, these classes need to be mandatory. The CDC reports, “Daily participation in high school physical education classes dropped from 42% in 1991 to 32% in 2001.”³³ Granted, a significant part of this drop can probably be attributed to school budget cuts that limited the amount of daily physical education offered (as in the Tennessee example). However, one can surmise that the rise in obesity levels may have had an impact as well. For many overweight students, physical education classes can be very stressful. They are environments in which the students’ low fitness levels can become strikingly noticeable. Although it is important to create atmospheres that do not socially alienate these students (more on this later), it is also important to make sure that those students are forced to exercise on a daily basis. Many of these children, because of social fears, will choose not to participate if given a choice. However, those students’ psychological and physical health will certainly improve a great deal over the long-term if they receive the daily exercise they (and all students) need.

Physical education classes should also be non-threatening to support all students, regardless of physical fitness or ability. Physical education programs should emphasize both physical fitness as well as encouraging higher self-esteem, greater confidence and greater knowledge about the value of exercise in daily living. With these goals in mind, competitive environments will only alienate some students. Additionally, competition can focus students’ attention on their peers, rather than themselves and their own personal growth.

Wellness programs can be easily applicable in physical education classrooms. “Simply put, the concept of wellness espouses self-responsibility for a healthy lifestyle...

³³ *Physical Activity and Good Nutrition: Essential Elements, 2.*

[It is] the constant and deliberate effort to stay healthy and achieve the highest potential for total well-being.”³⁴ Wellness stresses not only physical fitness but also mental health. It is important, in the context of overweight and obesity, to remember that these two factors can work together with negative consequences for the individual. That is, weight problems can lead to depression, which in turn can make the individual feel a sense of powerlessness, and so the problem escalates. Wellness programs focus on individual progress, helping students to see how they have improved themselves and how they can continue to do so, with the stress of competition from peers. In one wellness program in a Philadelphia-area elementary school, “Games are related to life. Skills are taught and children play hard without keeping score... [The teacher] emphasizes that individuals set their own priorities.”³⁵ Wellness is focused on educating children about how their actions and behaviors influence their bodies’ growth, and empowering them to improve themselves over the long-term in a non-competitive environment.

Physical education needs to recognize the myriad ways in which physical fitness is attained. “...[F]itness has become synonymous with aerobic or cardiorespiratory fitness... however... this approach ignores several other components of fitness that are relevant to health, particularly in pediatric populations. These include muscle strength, muscle endurance, flexibility, and body adiposity.”³⁶ Physical education programs need to be varied, both in the different activities they provide and in the muscle groups and biological systems they target. Growing children, especially, need exercises that challenge all of their body systems in order to develop naturally and successfully. Additionally, it

³⁴ Shillingford, Jenepher P. and Anne Shillingford Mackin. “Enhancing Self-Esteem Through Wellness Programs.” *The Elementary School Journal* Vol. 9, No. 5, Special Issue: Sports and Physical Education (May, 1991): 457-458.

³⁵ Shillingford and Mackin, 464.

³⁶ Greene and Adeyanju, 438.

warrants mention that children of all ages will soon grow disconnected from programs that lack variety. Without variety and spontaneity in daily physical education activities, many children will grow bored and disconnected from the messages teachers are trying to send. Gaining and maintaining interest in physical health are important steps in improving student health, and any programs that fail to interest students will likewise fail to have a significant long-term impact.

What Else Can Be Done?

Schools also need to support extracurricular activities that emphasize healthy physical activity. Extracurricular sports especially can have wonderful benefits for children. Because sports have competitive elements to them that could alienate some children, it is important to stress the values that sports espouse much more than the competition itself. That said, sports have proven to be very beneficial in many aspects of children's lives:

Participation in physical activity and sports can promote social well-being, as well as good physical and mental health, among young people. Research has shown that students who participate in interscholastic sports are less likely to be regular and heavy smokers or use drugs, and are more likely to stay in school and have good conduct and high academic achievement. Sports and physical activity programs can introduce young people to skills such as teamwork, self-discipline, sportsmanship, leadership, and socialization.³⁷

Through sports, children can learn important principles that are applicable in many areas of life as a whole, and they can get exercise in a social atmosphere. Sports give students a

³⁷ *Physical Activity Fundamental to Preventing Disease.*

reason to stay in school, do well academically, and avoid dangerous and illegal behaviors. In an era that emphasizes individual achievement, it is vitally important that our children learn how to work together to meet mutual goals, and team-based sports³⁸ are a great avenue to those goals. Sports, in general, can be very effective at reaching students that might otherwise be turned off by school, and can teach them important lessons and life skills that traditional classroom instruction may fail at.

Active participation is a critical element in these activities. The Surgeon General asks schools to “[p]rovide extracurricular physical activity programs, especially inclusive intramural programs and physical activity clubs.”³⁹ The most important word here is “inclusive.” There should be room in these programs and on these teams to accommodate any and all students who wish to participate. Additionally, there should be enough teams to give all students ample opportunity to play. There are few situations more discouraging for an aspiring athlete than having to spend large amounts of time on the bench, watching others play, because his or her team is too large to give sufficient playing time to everyone. Although this may be costly, the physical and psychological benefits for the child are great. An unhappy experience at an early age can seriously taint a student’s perception of the value of sports and physical activity. If we are to truly reach out to these students and give them opportunities for healthy living, we must ensure that they are amenable to the children.

³⁸ By “team-based,” I mean any sport in which a group of individuals trains and plays together. This includes traditionally defined “individual” sports like track & field, tennis, and swimming (among others). While athletes may compete individually in these sports, they often (and, in the case of these recommendations for children, should) practice together and participate in the same competitions.

³⁹ Office of the Surgeon General, 20.

Dissemination Plan

To begin with, it is vitally important that the information presented in the Issue Assessment be made available to educators. Many in the academic community fail to realize how dangerous the obesity epidemic really is, and how physical education truly can make a significant positive impact. If school boards and administrators fully understood the financial and social ramifications of this epidemic, I believe that they would view physical education with a great deal more respect than it is currently viewed. Educating the public about the inherent dangers of unhealthy lifestyles is an important step that must not be overlooked, for it is on this education that the proposals included in the reform initiative are based. The most important step in this process of reaffirming the value of physical education in our schools is getting information out to those who need it to enact change.

To that end, dialogue is needed between the various players in this process. We need to bring together teachers (in both general and physical education), administrators, community members, school board members, and parents to talk about these problems and discuss ideas. The proposals in the attached reform composition are foundational, seeking solutions to the obesity epidemic through proven programs. It is up to specific schools (and those individuals involved in them) to tailor those proposals to the specific needs of the local schools. By bring various people together to talk about these issues, we can raise awareness about the importance of physical education and generate new ideas about how to solve long-running financial and logistical difficulties. Again, it is important to publicize ideas and integrate them into the public consciousness for dialogue, debate, and action.

Annotated Bibliography

Carroll, Beverly A. "School exercise cuts spur obesity worries." *The Chattanooga Times Free Press* 14 October 2004. Retrieved November 10, 2004 from www.msnbc.msn.com.

This newspaper article (reprinted online) illustrates the growing problem of school budget cuts and their effects physical education and athletic departments. The author interviews teachers, parents, administrators, and health experts (including a pediatrician and a dietician) for their thoughts on the causes of these cuts and their likely implications.

Greene, Leon and Matthew Adeyanju. "Exercise and Fitness Guidelines for Elementary and Middle School Children." *The Elementary School Journal* Vol. 1 No. 5, Special Issue: Sports and Physical Education (May, 1991): 437-444.

This article from a 1991 issue of *The Elementary School Journal* lobbies for more rigorous physical education for elementary school children. The authors argue that children can handle vigorous exercises with little risk of long-term harm. They also provide detailed recommendations for elementary level teachers and administrators to implement in physical education classes.

Hatcher, Juliet L. and Juliet Scarpa (June 2002). *Child Trends Research Brief: Encouraging Teens to Adopt a Safe, Healthy Lifestyle: A Foundation for Improving Future Adult Behaviors*. Retrieved November 8, 2004 from http://www.childtrends.org/catdisp_page.cfm?LID=141.

The authors discuss several health issues affecting American teenagers today, ranging from exercise and nutrition to smoking. In relation to exercise and nutrition, the authors stress the importance of establishing healthy behaviors at a young age to promote long-term healthy lifestyles. Additionally, they point out some of the diseases that can develop through sedentary behavior and poor nutrition.

Hurley, Ryan. "Physical education, extracurricular sports suffer under budget strains." *OnWEAC: Wisconsin Education Association Council* 1 June 2004. Retrieved November 10, 2004 from <http://www.weac.org/News/2003-04/jun04/phyed.htm>.

The author, writing for the Wisconsin Education Association Council's website, highlights the dangers of cuts to school physical education and athletic programs in Wisconsin. The article blames some blame on the No Child Left Behind Act, as some educators argue that NCLB forces schools to pull funding away from these programs into other areas to meet criteria mandated by state standards. Some interviewees also note that the loss of athletic programs may undermine some students' academic motivations, and that many children will be excluded from programs because of the necessity of newly imposed fees.

Shillingford, Jenepher P. and Anne Shillingford Mackin. *The Elementary School Journal* Vol. 9, No. 5, Special Issue: Sports and Physical Education (May, 1991): 457-466.

The authors explain wellness programs in an historical context and detail the programs in place at Bryn Mawr College and at 3 Philadelphia-area elementary schools.

Through descriptions of the programs' goals, implementation, and interviews with educators, the authors make a strong argument for the value of these programs at all levels of education.

Torgan, Carol (June 2002). Childhood Obesity on the Rise. *Word on Health – National Institutes of Health*. Retrieved November 8, 2004 from <http://www.nih.gov/news/WordonHealth/jun2002/childhoodobesity.htm>.

Dr. Torgan addresses the growth of obesity and overweight amongst Americans (children especially). She describes some of the negative health effects (physical and mental) that can arise from these conditions and some of the root causes (particularly inactivity) that lead to unhealthy weight gain. Finally, the author calls on parents to encourage their children to be more active and provides some helpful resources.

U.S. Department of Health and Human Services (June 2002). *Physical Activity Fundamental to Preventing Disease*. Retrieved November 2 from aspe.hhs.gov/health/reports/physicalactivity.

This article, from the U.S. Department of Health and Human Service website, presents a strong argument for the importance of physical activity to prevent many different diseases, such as heart disease, high blood pressure and some cancers. The report is filled with important statistics related to physical inactivity among children and the dangers of various diseases that can result from obesity. The article also details the effectiveness of exercise in avoiding these diseases, and explains other health benefits of exercise, such as academic performance and mental health.

U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to*

Prevent and Decrease Overweight and Obesity. Washington: GPO, 2001. Retrieved November 10, 2004 from <http://www.surgeongeneral.gov/topics/obesity>.

This 2001 report is a comprehensive analysis of the modern obesity crisis in the United States. The Surgeon General examines the causes and impacts of the rise in obesity levels nationwide, as describes the health risks associated with overweight. The report also includes detailed recommendations for families, communities, health care providers, media outlets, and worksites to address these problems and enact positive change.

U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. *Physical Activity and Good Nutrition: Essential Elements to Prevent Chronic Diseases and Obesity*. 2004. Retrieved November 10, 2004 from http://www.cdc.gov/nccdphp/aag/aag_dnpa.htm.

This report, from the CDC's website, briefly examines the current obesity epidemic in the United States. It also targets nutrition and physical activity as key components of healthy weight balance, and provides some statistics detailing Americans' unhealthy behaviors. The report also includes a map (attached) showing the rise in obesity levels by state across the U.S.