

American Medical Association

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Proceedings

Educational Forum on Adolescent Health
**Adolescent Obesity,
Nutrition, and
Physical Activity**

November 14, 2002

May 16, 2003

Washington, DC

The American Medical Association's (AMA) Educational Forum on Adolescent Health is funded in part through a cooperative agreement (2 U93 MC 00104) with the Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), Office of Adolescent Health. We wish to acknowledge MCHB's generous support and the direction provided by our Partners in Program Planning for Adolescent Health (PIPPAH) Project Officer Audrey Yowell, PhD and Chief, HRSA Adolescent Health Branch Trina M. Anglin, MD, PhD.

The AMA PIPPAH project is addressing *Healthy People 2010's* 21 critical adolescent objectives through its Educational Forum meetings. Each session considers a single issue that is directly related to the 21 critical adolescent objectives.

The second Educational Forum on November 14, 2002 and the third Forum on May 16, 2003 featured a discussion of adolescent obesity which is related to the following *Healthy People 2010* objectives:

Objective 19-03 Reduce the proportion of children and adolescents who are overweight or obese

Objective 22-07 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion

The first Educational Forum on May 3, 2002 featured a discussion of bullying which is related to the reduction of physical fighting (Objective 15-38).

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Citation:

Fleming M. and Towey K., eds. Educational Forum on Adolescent Health: Adolescent Obesity, Nutrition, and Physical Activity. 2003. Chicago: American Medical Association.

Copies of the Proceedings are available by January 2004 at www.ama-assn.org/go/adolescenthealth

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Educational Forum on Adolescent Health

Nutrition and Physical Activity—Research and Programming May 16, 2003

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Adolescent Obesity, Nutrition, and Physical Activity

An Overview

The news nationally and globally is startling. Overweight is increasing, dramatically and quickly, in both adults and children. Many professionals are sounding the alarm about the cresting of obesity-related disability and death as well as the economic burden on health care systems. Agencies from the World Health Organization (WHO) to the US Institute of Medicine (IOM) and the General Accounting Office (GAO) are sending warnings and searching for explanations and interventions.

The problem of increasing overweight and obesity for children and adolescents in the US is a combination of many factors including decreased physical activity, increased portion sizes, and a growing amount of food consumed away from home, especially at school.

The solutions lie at home, in the schools, and in communities. Nutrition standards and education, individual behavior modification, social marketing to encourage exercise and healthy eating, parental advocacy in schools and role modeling, and changes in school vending and food services policies are all part of the solution.

As speakers at the American Medical Association (AMA) Educational Forum on Adolescent Health, we are an important part of the solution—as health professionals, as parents, as concerned citizens, and as adults.

References

A World Health Organization draft report on obesity is due Fall 2003. The report proposes to serve as a minimum standard for proper diet and exercise.

Institute of Medicine report on *Prevention of Obesity in Children and Youth*, expected June 2004
<http://www4.nas.edu/webcr.nsf/5c50571a75df494485256a95007a091e/0a0d23e7131c1eb585256cb1007113e6?OpenDocument>

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www.gao.gov/cgi-bin/getrpt?GAO-03-506

Introduction

American Medical Association
Educational Forum on Adolescent Health
Adolescent Obesity, Nutrition, and Physical Activity

November 14, 2002

May 16, 2002

Missy Fleming, PhD

I would like to recognize our sponsor, the Health Resources and Services Administration's Maternal and Child Health Bureau (MCHB), Office of Adolescent Health. The program is sponsored, in part, by our MCHB Partners in Program Planning for Adolescent Health (PIPPAH) project.

Our first session on the topic of bullying was held in May 2002 in Washington DC.

Our topics for the November 2002 and May 2003 Educational Forum sessions were adolescent obesity, nutrition, and physical activity.

Our fourth adolescent Educational Forum session will be held on November 6, 2003. During that session we will discuss alcohol, specifically alcohol advertising to young people and binge drinking.

Adolescent Obesity, Nutrition and Physical Activity

At the November 2002 and May 2003 Educational Forum sessions, speakers addressed clinical and non-clinical aspects of adolescent obesity, from nutrition to physical activity to community planning and

school financing. They addressed the risks to health and the co-morbid conditions related to obesity, the obesity-related expense incurred by the health care system, and its impact on quality of life.

Nutrition, obesity, and physical activity are concerns for every person at every age. The speakers noted that an individual's early nutrition, weight control, and exercise patterns have lifelong implications. Obesity and overweight, in both adolescents and adults, have an extensive impact on personal health with repercussions for life health, life span, and personal and societal economic expenditures and burden. Some studies suggest that the personal repercussions of obesity influence psychosocial development linked to self-esteem, body image, educational attainment, marriage, and the likelihood of poverty.

The solutions lie in a continuum from personal responsibility to changing the environment of schools, school funding and curricula, physical education, advertising, media, and public norms and awareness in this country.

Among the important messages emphasized by our speakers:

Obesity—morbidity and mortality Genetics plays a role in the risk of obesity—what happens next is environment. Both are likely to play a role in overweight and obesity.

Environment is a huge influence on children's eating and activity patterns. The influence of factors including school food services and parents' physical activity and fitness levels cannot be overestimated.

Understanding and publicizing the co-morbidities of obesity in youth are critical to addressing this health problem. Some health effects are immediate; some are long term.

Interventions Interventions must be culturally sensitive. Similarly, adolescent obesity is different from adult obesity. Successful interventions account for and address those differences.

Campaigns similar to Centers for Disease Control and Prevention’s (CDC) VERB have carefully incorporated cultural sensitivity to issues related to gender, disability, cultural, and traditional values and languages.

Successful interventions have several components that really determine which programs are effective: a dietary intervention, a physical activity intervention, a behavioral component, and parental involvement.

To create a positive environment, intervention studies should look not only at changing the foods children eat but also changing the environment to which they are exposed. There have been several successful studies of changing the school food environment to offer healthier options for children.

Successful intervention programs exist—and should be publicized and shared. Dr. Spear’s compilation of programs and contacts (see Appendix C, *A General Overview of Physical Activity and Nutrition Intervention Programs*) can be a useful resource.

Dr. Graham emphasized that school-based physical education can set the stage for a lifetime of physical activity. The challenge is introducing young people to as many options as possible so they can find an activity that “fits” and keeping activity alive in youngsters as they age. Physical education in schools, with its emphasis on inclusion and personalization and its certified teachers, can provide these opportunities.

Public Health Similar to many public health challenges including smoking or substance and/or alcohol abuse, the solution lies in prevention rather than in treatment. The public is increasingly aware of the risks and economic and productivity costs of obesity and overweight. Public health campaigns related to substance abuse, drinking and tobacco use may provide some useful models and lessons in tackling adolescent obesity.

The CDC campaign, VERB, is an excellent example of design and social marketing because of its reliance on research and evaluation from the campaign’s inception, its innovative public-private partnerships, and its emphasis on marketing and branding for its tween target audience.

Policy Panelist Russell Henke emphasized that as taxpayers, we can affect what happens in schools regarding vending machines and funding for education. However, making time in the curriculum for nutrition and physical education is challenging—the current emphasis in schools is on academics, not health education. Other speakers also stressed the need for parental and community involvement to influence the school food environment.

Dr. Lytle noted several studies which have used incentives like price elasticity to positively influence youth vending and a la carte choices in school food services. Her message is that there are proven healthier options for revenue-producing vending sales in schools.

The slow and sometimes frustrating pace of change needs to be acknowledged and accepted. Stakeholders must determine what can be changed by personal responsibility and parental example and what must be changed by legislation or litigation and proceed accordingly.

As panelist Dr. Sheehan put it, “We need an invested group effort from the national level down to the individual (physician/patient and personal) level to reverse the obesity epidemic.”

These two Educational Forum sessions highlight the problem of adolescent obesity and its environmental contributors. Our speakers and audience members

have outlined some successful intervention programs and areas for further research.

It remains for us to bring our voice to the issue— as physicians and other health care professionals, as parents, and as concerned citizens.

Jamie Stang, PhD, MPH, RD

Project Director

Maternal and Child Nutrition Leadership Education and Training Program

School of Public Health

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Dr. Jamie Stang is a registered dietitian. She has a masters degree in Public Health from the University of North Carolina at Chapel Hill and her PhD in Nutritional Epidemiology from the University of Minnesota. She completed an adolescent health fellowship program at the University of Minnesota and she is currently the Project Director for the Maternal and Child Nutrition Leadership Education and Training Program at the University of Minnesota.

Adolescent Obesity

Educational Forum on Adolescent Health
November 14, 2002

I am going to be presenting information on the topic of adolescent overweight and obesity with some basic information that could be a review for many of you. Then I will describe what I see as needs and strategies that we as health professionals and as leaders in health care need to consider.

Obesity and overweight

Many people simplify adolescent obesity and overweight. They say, “Well, it’s a simple equation. You take in more calories than you expend.” Unfortunately, it is really not that simple; if it were, I think we would have had a remedy a long time ago. Many factors are associated with eating (Maffeis, 1999). Eating is an essential part of what we do to sustain life and that is what sets obesity apart from some of the other issues that adolescents encounter during their development. People can’t stop eating; or if they do, they can’t stop for long.

Many factors must be considered when trying to understand adolescent obesity. Expert guidelines on the detection and treatment of overweight among children and adolescents recommend that body mass index (BMI) be used as a screening tool for determining risk of overweight among children and adolescents (Himes & Dietz, 1994; Barlow & Dietz, 1998). BMI growth charts make it very easy for practitioners to plot the BMI without having to get out the calculator and do all the metric conversions (eg, CDC BMI: Body Mass Index Calculator for Children and Adults, www.cdc.gov/nccdphp/dnpa/bmi/index.htm).

Looking at BMI as a screening tool, the recommendations indicate that a BMI of greater than or equal to 85, or the 85th percentile, but less than the 95th percentile, should classify individuals as being at risk for overweight. And then, anything at the 95th percentile or above should identify an individual as overweight. I stress the term overweight. Many people talk about obesity and there have been many cut points that have been used in the last 20-25 years, but again, BMI is just weight for height.

There is no assessment of body composition inherent in BMI. Consequently, BMI identifies people who are at risk for having high levels of excessive body fat but it does not actually determine body fat. Anthropometric measurements, such as subscapular and triceps skinfolds and bioelectrical impedance are commonly used to assess body fatness in clinical settings (Himes, 1999; Goran, 1998). So any individual who has been deemed at risk for overweight or is actually overweight really needs to have a body composition assessment done using skin folds or DXA or Bod-Pod or whatever method that you want to use. This should precede the diagnosis of obesity.

The growth charts (www.cdc.gov/growthcharts), which should be familiar to clinicians, include the charts for children 2-20 years of age with charts for both boys and for girls. A growth chart for BMI allows clinicians to follow BMI from infancy or early childhood through the end of adolescence.

The National Health and Nutrition Evaluation Survey, NHANES, data are some of the better data available in terms of what is going on nationally. The latest NHANES cycle, which analyzes 1999-2000 data, shows that about 30 percent of adolescents have a BMI that falls at or above the 85th percentile and

about 15% of adolescents have a BMI that falls above the 95th percentile (Troiano & Flegal, 1998; NCHS 2002; Odgen et al., 2002).

Compared to the NHANES III data, collected from 1988 to 1994, close to a 5% increase in about a five-to-six-year period is evident. The data sets are not completely equivalent because what we are seeing is that it is increasing a bit more in females with a slightly smaller increase in males. But when both genders are combined, it's about a 5% increase; females seem to have a little bit steeper slope than males.

Age differences are another issue to consider. References to the current “epidemic of childhood obesity” include the last 25-35 years with special reference to the data from 1963 to 1970 and the latest NHANES data. Following this data shows some very significant trends in terms of the prevalence of overweight. These would be above the 95th percentile. In the mid-1960s to early 1970s about 4-5% of our youth were considered above the 95th percentile. Contrasting that to 1999, 15% rates, both in children and adolescents, are evident.

When I look at these data, what really strikes me is the big change from the mid-1970s to the late 1980s and early 1990s. I think that if anybody could figure

out exactly what it was that caused that big change we would be well on our way to figuring out how to combat this.

But there have definitely been some changes and a steeper slope in the last 15 years in terms of increases in the prevalence of obesity than we saw in the 1960s and early 1970s.

Data from the 1999-2000 NHANES notes that “at risk for overweight” is above the 85th percentile. When considering all of the races or ethnicities combined, slightly more than 30% of males and females fall above the 85th percentile. However, there are some considerable racial and ethnic disparities in the data. White males and females tend to fall a little bit below the national average, African-American males are second highest, and Mexican-American males have the highest rates. Looking at females, African-American women are at the highest risk but not much more than the Mexican-American females; this has been a big change. The increase in rates among Hispanic and Mexican-American individuals in particular has been very pronounced with the same pattern for the overweight.

Minnesota includes numerous American Indian nations in its population. Some of the American Indian data gathered in the Aberdeen area health

Figure 1. Racial and ethnic disparities in at-risk for overweight				
	All races	White	Black	Mexican American
Males	30.5	27.4	35.7	44.2
Females	30.2	25.4	45.5	43.5

Source: CDC NHANES 1999-2000

Sampling used in NHANES data does not include good data on Asian Americans, American Indians, or other groups. Three groups -White, Black, Mexican American- are used to determine the trends.

Racial and ethnic disparities in rates of adolescent overweight are apparent.

Figure 2. Unadjusted prevalence rates of adolescents exceeding the 95th percentile for BMI for age and gender, based on revised NCHS/CDC growth charts		
	Males 12-17 years of age	Females 12-17 years of age
Non-Hispanic White	11.1	8.5
Non-Hispanic Black	10.7	15.7
Mexican American	17.4	13.7

Source: Troiano & Flegal, 1999

service, mostly Sioux, Lakota and Oglala, identifies the rate at risk for overweight and overweight among American Indians. For the males, they're second only to Mexican-American individuals in terms of prevalence and for females they fall somewhere between the white females and the African American and Mexican American females. This was just one group of Indian nations (Zephier et al., 1999).

National data are now being collected on American Indian youth. Many of these young people are outside the Plains Indians who have somewhat higher levels; they probably fall closer to the top of the pack.

The degree of obesity is increasing. Not only are more individuals falling within those at risk for overweight and overweight categories, but also the children and adolescents there are heavier. It has been estimated that more than 75% of overweight adolescents will remain overweight into adulthood (Gortmaker et al., 1993; Guo et al., 1994; Whitaker et al., 1962). Persistence of overweight among youth increases with age, degree of obesity, and parental obesity (Gortmaker et al., 1993; Guo et al., 1994; Whitaker et al., 1962; Borjeson, 1962).

When Troiano and Flegal (1998) looked at NHANES III data and plotted the mean differences, they found that the means were significantly more right skewed in NHANES III than they were in earlier cycles of data. They determined that there is this fringe, this upper part of the group of overweight adolescents that are significantly more overweight than they were a decade or two ago. Clinical experience tells us that these young people are harder to treat and their overweight is more likely to persist. Consequently, professionals have to be concerned about not only primary prevention but also secondary prevention within this group.

NHANES II data which are a little bit older shows increases in terms of the skin fold data for individuals who fall above the 95th percentile. Among the younger children it doubled and among the adolescents it almost doubled. Again, this is a little bit older data; this is before NHANES III, but certainly we are seeing an increase in the overall percentage of body fat on many of the overweight or at-risk-for-overweight individuals.

Figure 3. Increase in prevalence of skinfolds >95th percentile 1963–1965 compared to 1976–1980

	Ages 6-11 yrs % increase	Ages 12-17 yrs % increase
White males	62	17
Black males	105	69
White females	40	54
Black females	120	96

Source: Gortmaker et al., 1987

Persistent obesity is a topic receiving a great deal of attention and many people engage in very heated arguments about it. It appears that roughly 15% of overweight infants will have persistent obesity through adulthood. Although many factors may account for this, for preschool children, three to four years of age, about a quarter of them will have persistent obesity. When considering early childhood about 50% will have persistent obesity and by the time that these children go through puberty about 75-80% will have persistent obesity which is very high.

Although some people worry that “There isn’t much we can do about it,” we need to consider the factors that increase the persistence rate. One factor is age. The older the child is, the more likely they are to remain overweight. A second factor is the degree of adiposity; the higher their percent of body fat or the more overweight they are, the more likely they are to persist in being overweight. A third factor is whether these young people have one or more overweight parents. The correlations between parent obesity and child obesity are actually highest around age 10 and they go down after that, partially, I think, because as adolescents become more autonomous, their food choices are often made outside of the home. Family modeling and the family environment are critical aspects of food choices.

One of the things that professionals really need to stress with parents is the co-morbidities and the morbidities associated with obesity in youth. Some of these are immediate and others are long term; they include cardiovascular, high lipid levels, hyper-

tension, syndrome x, or what some people call metabolic syndrome. There are respiratory co-morbidities, there are orthopedic co-morbidities. Especially with the orthopedic problems, the earlier children experience the onset of obesity the more likely they are to be very, very significant. There are endocrine co-morbidities of obesity, not just insulin resistance but also dysmenorrhea or early puberty. There is a lot of interest in the area of early puberty, particularly in females, and how that relates to the occurrence and the persistence of obesity.

There is also a clustering of cardiovascular risk factors. Data from the Bogalusa Heart Study showed that of the participants, the children and adolescents, about a quarter in the general study population had at least one cardiovascular risk factor. But when they separated out those who were above the 95th percentile it increased from about 27% to about 61% with at least one cardiovascular risk factor. When looking at how many people had two cardiovascular risk factors, it increased from about 7% in the general population up to about 27%. When separating the children and adolescents who had three risk factors, it was about 11% of the population. Again, the more obese they are, the more likely they are to have this clustering of cardiovascular risk factors (Freedman et al.,1999).

Other data from the study on the odds ratios of having some of the cardiovascular effects related to obesity showed that having high cholesterol, with high total cholesterol levels and high triglycerides, places people at about seven times higher risk for having high triglycerides if they are above the 95th percentile in that study, compared to the children and adolescents who are below the 85th percentile or the so-called normal weight.

According to these data, the LDL and HDL cholesterol level risks with blood pressure are somewhere between 2 1/2 and 4 1/2 times the risk for elevated blood pressure. The issue of insulin resistance and elevated insulin levels are very important to consider. In the Bogalusa data it was about 12 1/2 times the risk to have elevated insulin levels or early signs of insulin resistance if those children or youth were above the 95th percentile.

Figure 4. Relation of overweight to adverse CVD risk factors in children ages 5-17

Factor	Odds ratio*
Cholesterol >200 mg/dl	2.4
Triglycerides > 130 mg/dl	7.1
LDL-C >130 mg/dl	3.0
HDL-C <35 mg/dl	3.4
Elevated SBP	4.5
Elevated BP	2.4
Elevated Insulin	12.6

Source: Freedman et al., 1999

* Prevalence for overweight children (>95th percentile for Quetelet Index) versus prevalence for children who are not overweight or at risk of overweight (<85th percentile)

Type 2 diabetes in youth is receiving a lot of press because it is something that has really taken the medical community and the public by surprise. When considering the 1988 to 1994 NHANES III data, it is clear that about 30,000 adolescents were diagnosed just within that study group as having Type 2 diabetes. Depending upon the source of the clinical data or studies considered, adolescent Type 2 diabetics accounts for anywhere from 8 to 46% of all the new cases of diabetes among adolescents in pediatric clinics (Styne, 2001; Sinha et al., 2002).

At a recent Canadian Diabetes Association conference, participants stated that, “This is supposed to be adult-onset diabetes. All our materials and all our clinic protocols and everything we used were developed with the 35-50 year old patients in mind.” These clinicians have to make a real switch. There is a lot to be learned about how to deal with this issue, given the psychosocial development of adolescents and children.

Cincinnati, Ohio clinics have had some of the early and best data related to Type 2 diabetes in children and adolescents. In their clinics, there has been about a 10-fold increase in about a 12-year period in rates of Type 2 diabetes among adolescents. This is very significant. Increased detection may account for some of it; however, Type 2 diabetes had to be present for it to be detected (Pinhas-Hamiel et al., 1996).

Clinicians need to consider that adolescent obesity is likely to persist. Gortmaker and colleagues looked at the long-term psychosocial consequences of obesity and found that there were lower levels of educational attainment, lower marriage rates, lower income generated by overweight women who were overweight as adolescents (Gortmaker et al., 1993). Interestingly, they did not find the same trend in males. So it seems that females in particular who are overweight during adolescence endure some of the psychosocial consequences to a greater extent than males. It is important to remember that males are subject to the psychosocial consequences of obesity persistence but to a less significant degree than females.

Disordered eating is a concern of many professionals who address obesity prevention or treatment. Diane Neumark-Sztainer demonstrated that overweight females were twice as likely to engage in what we might call high-risk dieting behaviors that border on or are actually considered disordered eating. This includes using laxatives and diuretics or vomiting to lose weight (Neumark-Sztainer et al., 1999). Obesity increases the risk for these types of behaviors. Investigations of school-aged children and adolescents in Great Britain found that they were at about eight times the risk of developing an eating disorder if they were dieting. Although not all of these children were overweight, many adolescents who are not overweight diet, but certainly the overweight individuals were very well represented in the study. Hypertension, diabetes mellitus, sleep apnea, orthopedic abnormalities, pseudotumor cerebri, and severe psychosocial stress are conditions for which we may recommend very quick or rapid weight loss because they can have such severe consequences.

Wang and colleagues looked at the National Hospital Discharge Survey data. They considered cases in which obesity was listed either as a primary or a secondary diagnosis for treatment. These data represent a twenty-year span, 1979 to 1999, and included significant increases in primary and secondary diagnoses of obesity. When looking at length of hospital stays, they found that the hospital stays were longer if obesity was a primary diagnosis; cost for treating child and adolescent or pediatric obesity increased four-fold

during the study period (Wang & Dietz, 2002). This finding probably underrepresents what is actually happening because records had to have obesity listed as a primary or secondary diagnosis which is not always the diagnosis.

Costs associated with medical complications of obesity

Primary and secondary obesity diagnoses: 1979-1999.

- 65% increase in diabetes
- 197% increase in obesity
- 228% increase in gallbladder disease
- 436% increase in sleep apnea

Hospital stays

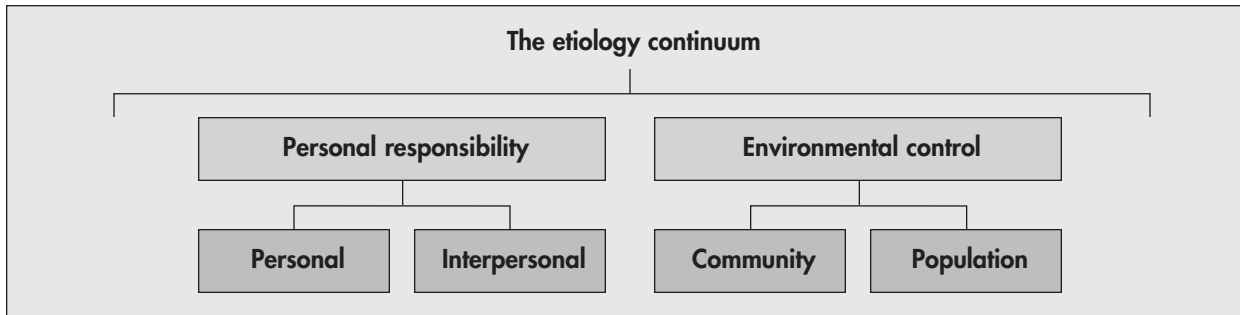
- 13 day increase for primary diagnosis
- 7 day increase for secondary diagnosis

Annual treatment costs increased to \$127 million from \$35 million

Source: Wang et al., *Pediatrics*, 2002

Factors contributing to obesity

Why is this happening? Most of the data show that both genetics and environment contribute to this situation and it is very difficult to separate the two. People are born into a family and are raised in that family, so the environmental and genetic pieces are so intertwined that it is very difficult to separate them. Most data point to an interaction between genetic and environmental factors. Genetics determine which adolescents are at risk for overweight and obesity but the environment determines to what extent this risk is expressed. The degree to which obesity increases certainly points to the strong influence of environment.



My colleague Leslie Lytle and I think about obesity as falling along a continuum. The continuum includes personal factors on the far left end; actually are about as personal as you can get. The factors continue through population-based aspects of life.

Obesity takes place along a continuum and any interventions, whether in a clinic or a school or a community, really need to address each of the factors along the continuum if they are going to have a lasting impact.

When considering the types of activities that fall within personal responsibility, knowledge, attitudes and behaviors are familiar; but the motivation to change and individual incentives are a little more complicated. The other end of the continuum includes activities that take place on a state or a national level. These activities are related to regulation of the food industry or media, and taxation which is of interest to some public health professionals.

The etiology continuum

Personal responsibility

- Knowledge, attitudes, beliefs
- Motivation to change
- Individual incentives

Environmental control

- Regulation of industry and media
- Taxation
- Policy
- Organization and population incentives

Twin studies Investigations of identical twins who were raised in separate environments found that genetics accounts for about 20-65% of obesity (Bouchard et al.,1990). With a mid-point of 40-45%, this means that 55-60% of variations in body fat and body weight are likely due to environment.

Metabolic pathways: melanocortin pathway and the leptin obesity gene pathway Many metabolic pathways are being investigated. The two most prominent include the melanocortin pathway and the leptin obesity gene pathway (Warden & Warden, 2001). There are at least seven genes involved in the development of obesity in humans and animals and there are at least 200 mutations that can occur that have been identified as related to obesity. In studies of Afghani siblings or east Indian siblings in which investigators looked at individuals to determine who seemed to have these mutations, researchers found that they were easy to identify.

The clinical traits that seem to occur most often include having a BMI greater than the 97th percentile which occurs very early in life. It does not occur when people are 10 or 12 years of age, it occurs at 2 years of age or younger. Abnormal leptin levels can be very high because when people have leptin resistance; they can be very low if they have insufficient leptin or leptin deficiency. Some people have adrenal insufficiency and concordant red hair coloration (Warden & Warden, 2001). The Afghani siblings who received leptin lost 80 or 90 pounds. That is not the typical response because not everyone is leptin deficient. The general population is left with many unanswered questions.

Fetal origins hypothesis Fetal origins hypothesis, sometimes called the Barker's hypothesis, looks at what happens with the environment that the fetus is

exposed to in utero and how that determines its risk of disease later in life. Research findings in cardiovascular disease, diabetes and hypertension, less so in obesity, point to both overnutrition and undernutrition during those early parts of pregnancy. Looking at the data closely, a lot of studies will say first and second trimester, but the first trimester, in particular, seems to have very pronounced effects, particularly for the women who are underweight; they are malnourished early in pregnancy and for some reason it appears that the neuroendocrine endocrine pathways of these infants become—the term “reprogrammed” is used—very efficient at obtaining and utilizing whatever energy is available. This programming sticks with them in such a way that it means that they’re metabolically very determined or very likely to develop obesity (Ravelli et al., 1976). This is a hypothesis that not everyone supports. There has been some data by Dietz and others looking at overnutrition but the undernutrition or the malnutrition data seem to distinguish themselves across all of the areas of chronic disease (Whitaker & Deitz, 1998).

Knowledge and culture Investigations of personal factors related to obesity have considered knowledge and culture. Knowledge does not seem to be a good predictor of who does and does not become obese. Researchers who studied adolescent nutrition knowledge levels found similarities between overweight and non-overweight individuals. Culture also has an impact on obesity and probably contributes to some of the racial and ethnic disparities that we see. In studies of immigrant families who move to the US, rates of obesity skyrocket within two to three generations. The more acculturated individuals become to the American culture, the more likely they are to become overweight. Because of the limited changes in the genetic pool over the past few generations, environmental and cultural influences appear to be dominant.

Interpersonal factors Families and parents assume major roles in both the development and the treatment and prevention of overweight. Families play a critical role, especially in early childhood, but even into adolescence, they exert a lot of influence. Health care professionals need to focus some attention on this fact of life for young people.

Leslie Lytle conducted a study that investigated where nutrition and physical activity are ranked on the parental energy index. Although in the top ten items, they are really low on the list. This is due in part to the fact that it is an area of big conflict in families because those mealtime battles, whether you are a four-year-old or a fourteen-year-old, are really draining on the parents and they really don’t want to deal with it. Physical activity had a similar pattern. With respect to prevention, we need to get it a little bit higher on this list by making parents aware of the need and giving them some skills for dealing with these issues.

Parental energy index

Ranking of topics that parents discussed with children

1. School work
2. Chores
3. Getting along with the family
4. Safety-helmets, seatbelts
5. Avoiding cigarettes
6. Avoiding alcohol, marijuana and other drugs
7. Avoiding violence
8. Friends they choose
9. Eating habits
10. Getting more physically active

Source: Lytle et al., 1999

Community and cultural factors

Unsafe neighborhoods Neighborhoods differ with respect to their relative safety; some are sparsely populated rural areas, others are dense urban areas, or suburban communities crowded with people who are trying to bypass the highways. Residents are increasingly concerned about crime-related violence, children being kidnapped while playing, and drivers who are distracted by traffic. Regardless of the cause, fewer children play baseball, basketball, or street hockey the way that they did generations ago.

Lack of after school activity options for adolescents

Typically, communities offer many more organized athletic programs for younger children than for adolescents. Although many people believe that adolescents refuse to participate, focus groups show that adolescents do not like the types of activities that are offered. If opportunities were altered to address adolescent interests, they would be more likely to participate.

Portion sizes Looking at the types of foods and the portion sizes are important factors to consider. Adolescents have figured out that economically, the big portions make sense. Even though adolescents don't have a lot of money they know how to spend it wisely. They're learning their lessons about savings related to big portions which are everywhere. Advertising data show the extensive marketing of foods that exclude fruits and vegetables. Also, normative reference for large portions and larger individuals has changed in the past decade. This was clear when our family entertained eight people from Mainland China for three weeks. Included in our trips throughout Minnesota was the Minnesota State Fair which provided a true cross section of the state population. Our Chinese guests were astonished by the prevalence of overweight Americans although we didn't consider these fellow Minnesotans any different from the people we see at the grocery store, school, or anywhere else. However, the reactions of people from other cultures reinforce how normative we consider overweight and obesity. Population trends are probably responsible for altering our considerations of what constitutes overweight today compared to overweight in the 1960s.

Population factors

Fewer opportunities to be physically active Our culture offers fewer opportunities to be physically active. Physical activity programs stress achievement over having fun and that's particularly true as adolescents age. That's one of the reasons adolescents don't participate in physical activity programs. Also, those

who do not feel particularly athletic decline to participate because they don't feel that there are options for them.

Foods that are available through schools Foods that are available through schools, unless they're reimbursable meals by the USDA, do not have to meet nutritional standards. Also, there are a tremendous number of food reinforcements. Battle and Brownell discussed the "toxic environment" (Battle & Brownell, 1996). Their article addressed both obesity and eating disorders, and the continuum. They said it is hard to envision an environment more effective than the American environment for producing nearly universal body dissatisfaction and preoccupation with eating, weight, and obesity. It hits people at both ends of the spectrum, both the eating disorder piece and the obesity piece.

Environmental factors Environmental factors can assume prominence in young people's lives in relations' to their diet. Unfortunately, we do not know the source of nutritional difficulty for adolescents. We have to ask ourselves about high protein, high carbohydrates, and high fat. Institutional review boards will not allow humans to participate in research studies that are strictly carbohydrate-only or fat-only diets. So we have to rely on animal-based studies to understand the situation.

The literature offers some excellent meta-analyses of data for consideration. According to this research, it really appears that the macronutrient contents aren't as important as the energy density (Rolls et al., 1999; Cox et al., 1999). Although a calorie is a calorie, energy density is a real issue. Apples and apple juice are an interesting example. They both come from the same fruit but apple juice is denser in terms of calories. According to NHANES data, fat intake has gone down about 5-6% in the last few years and rates of obesity have increased. It seems likely that energy density more so than fat per se really made that difference.

Energy density should not be confused with glycemic index. Glycemic index concerns how high your blood sugar goes up. It's true that many energy dense foods are also high glycemic index foods. For instance, a baked potato has a fairly high glycemic index but

it is not very energy dense. So they are not always the same, and I think that needs to be differentiated. There's only one study that's really looked at glycemic index in adolescents. Researchers found that people who ate low glycemic index foods ate less later in the day; if they ate higher glycemic index foods they ate more later in the day. Because this was a very small study, it is too early to train all our adolescents on glycemic index.

Nutritional Intakes of Teens On a national level, 40% of the calories in adolescents' diets right now come from added fats and sugars (Munoz et al., 1997). That's the top of the pyramid, which is huge actually if you look at the reality of things. Intakes of fruits, vegetables, dairy products, and whole grains are really low and in some cases are decreasing while the intakes of the high energy dense foods have gone up.

Figure 5. Percent of Adolescents Meeting National Recommendations for Food Groups

Recommended servings	Grain 6-11	Veg 3-5	Fruit 2-4	Dairy 2-3	Meat 5-7
Females	21%	46%	19%	22%	32%
Males	43%	50%	17%	48%	45%

Source: *Pediatrics*, September 1997

Soft Drinks Soft drinks deserve our attention because they represent the sixth single highest contributor of energy to the diets of adolescents. Between 12-16% of the daily caloric intake comes from soft drinks alone (Subar, 1998). Data from Ludwig at Harvard has shown that as the number of servings of soft drinks increased, so did the risk of obesity (Ludwig et al., 2001). So, one 12 ounce serving represents about a 60% increase; two 12 ounce servings triples the risk of obesity, and people who drink three or more have a five-times increase in their risk of developing obesity, according to their data (Harnack et al., 1999). National beverage intake data suggest that soft drink consumption is higher among overweight children and adolescents than among their non-overweight peers (Troiano et al., 2000). Fortunately, the human body is programmed to offset some of that but certainly just the one item alone has the

potential to make a big difference especially in those who are genetically predisposed to obesity. Soft drinks are everywhere in the environment of adolescents.

Where Food Comes From Home is still where adolescents obtain their biggest contribution of energy. But school, fast food, and other sources certainly play a role. Again, they eat a little more at home on the weekends than the weekdays but not much more. When considering family dinners, as children get older family dinners decrease in frequency and this situation has an impact on young people's dietary intake. Adolescents who eat with their parents more often, at least at the dinner meal, eat more fruits and vegetables. Interestingly, the intake of fried foods and soft drinks really does not change. So what they are eating in the home, even though they are getting more fruits and vegetables, is not necessarily that

much better than food consumed elsewhere.

Surveys of parents that looked at who makes the food decisions found that half to three quarters of all the decisions of restaurants or eating away

from home are made by children or adolescents. Fifty percent of the decisions of what is served in the home are made by children and adolescents. When parents were asked what influences what kinds of snacks they buy or where they go to eat, three times more parents said their children or their adolescents are more influential than their own thoughts or their own beliefs. But in this day and age where we want to make our families happy by reducing conflict, we really want to try to keep things as peaceful as possible because we are stressed out everywhere else. This is one area in which parents can make a difference.

Adolescents are making decisions about school food venues, as well. Prior to building a new cafeteria, architects interviewed adolescents. Interested adolescents responded that they wanted a sports bar atmosphere with big screen televisions, pit seating, and fast food. This is another example of young people exerting tremendous influence on how they

obtain food and under what circumstances they eat. There has been a real shift in how parents and educators are undertaking their responsibilities and setting examples related to dietary habits.

Teens and snacking Snacks provide about a quarter to a third of the calories that teenagers consume each day (Jahns et al., 2001; Dausch et al., 1995). They purchase a lot of food at convenience stores. Most of this food is bought during the week. Adolescents spend about \$13 billion a year on fast food. They average about two visits per week to fast food establishments. Also, fast food restaurants are one of the biggest, if not the biggest, employer of adolescents. Adolescents go there because their friends work there, they like the food, and it's mostly adolescents who are there during certain hours of the day. Although fast food restaurants are integral to adolescent culture, we need to modify what goes on there.

One Minneapolis suburban school has a fast food restaurant directly across the street. Members of the TACOS (Trying Alternative Cafeteria Options in Schools) intervention program are asking the school to adopt a closed campus policy. TACOS members want to try to keep the teenagers on campus. Owners of the restaurant are sponsoring efforts to keep the school from adopting the closed campus policy. Whether it's a convenience store or fast food outlet, owners know how to position their stores where teenagers can get their food products and get them quickly.

Portion size School food service portions have changed a lot just as restaurant portions have changed. Fast food hamburgers have increased from one ounce to six ounces, this is not the triple patty with three slices of cheese and bacon, it is just the hamburger. In some data from 1964, a 24-ounce soft drink bottle was considered a family-sized bottle because it would give four individuals a six-ounce serving. Now a 20-ounce bottle is a small serving for an adolescent who goes into a convenience store to purchase it.

Americans have become very accustomed to large portions. This was obvious when our foreign visitors were served their entrees in our restaurants. When the entrees arrived they placed them in the middle of the table because they assumed that it was meant to

serve the family, not one individual. They did not understand that each individual was served a portion that size.

Schools Schools represent the second largest venue where students eat meals. School Health Policies and Programs Study (SHPPS, 2000) data from the Centers for Disease Control and Prevention showed that about 20% of schools required fruits and vegetables on their a la carte lines (Wechsler et al., 2001). Fifty-four percent of schools contracted with soft drink companies, almost 80% received a percentage of the sales so they may not be actively trying to decrease consumption (Wechsler et al., 2001).

Salad bars or bagels can provide choices in the school cafeteria a la carte line. Although these items make money because adolescents eat them, when there are other options, these foods are not a first-choice.

Survey results note that about three-quarters of the high schools, about two-thirds of the middle schools, and about half of the elementary schools offer hamburgers, pizza, or other types of a la carte items daily. These items are typically fried, but they could be baked, grilled, or roasted to serve them in a healthier way.

Thirteen percent of the schools offer name brand fast foods and as a reminder, a la carte foods do not have to meet the same standards that the reimbursable meals have to meet (Wechsler et al., 2001). In case you haven't been in a high school cafeteria recently, think about having access to Papa John's pizza, Colombo Frozen Yogurt, and ice cream in addition to tacos and submarine sandwiches. Brand-name fast foods are available in 13% of public schools (US Government Accounting Office, 1996). Many school cafeterias have a huge display of chips right where the children check out. Although two tiny little baskets of apples are available along with other fruits and vegetables, more profitable items are placed more strategically. This is a description of a real high school cafeteria.

In the cafeteria in that same school there is one wall lined with vending machines of soft drinks. Their Honors Board is sponsored by Burger King. There's a lot of very subtle advertising that goes on in schools.

Food companies know that they need to establish brand loyalty at young ages. Young people are very familiar with the food cues in school cafeterias.

Vending machines More than a quarter of elementary schools, about two-thirds of middle schools and almost all high schools allow students to have access to vending machines (Wechsler et al., 2001). Very few of the schools have regulations regarding items that can be included. Minimal standards could be set to regulate access to them.

Studies conducted at the University of Minnesota investigated food pricing changes. Researchers have put items in vending machines that were five grams or less of fat. Adolescents purchase these items when that's what is available. If priced appropriately, they will buy it. Also, they buy it more often than they buy the higher fat stuff when the price is right.

Physical activity declines with age Physical activity peaks around 6-7-8 years of age and declines through the remainder of life. Sallis and colleagues asked adolescents what makes them athletic or what is it that makes them want to participate (Sallis et al., 2000). Perceived athletic ability comes out really high on the list. Overweight adolescents don't exactly perceive themselves as athletic, and so they are not as likely to be physically active. Parental support is a big piece. Swedish data on parental modeling found a very strong correlation between parental inactivity and child inactivity. But when you look at the correlation between activity in parents and children it's not very strong. One of the reasons relates to where are parents active. Parents use health clubs, gyms, they might go for a walk at work. Their kids are not seeing them physically active because they are doing it when they are away from the children. It is not a family activity. And, what do the kids see? Parents come home, sit down, watch television, and work at the computer; so the parental modeling piece is very important.

An issue all across the country is the number of schools that require physical education. It drops tremendously with age, from about half the schools requiring it down to about 5% by the 12th grade. These are data

from the National Child and Youth Fitness Study (NCYFS) and the Youth Risk Behavior Survey, YRBS (Kann et al., 2000).

Daily participation in physical education has decreased by about 50% from 1991 to 1997 which is significant. Less than a quarter of adolescents participate in daily physical education class. According to the Centers for Disease Control and Prevention's School Health Policies and Programs Study (SHPPS, 2000) data, most schools offer interscholastic sports; many offer intramural sports, but less than half of the females and about half of the males participate. No data are really available to address whether they're physically active all year long and there is little information on how many students are actually playing or participating versus how many of them are on a team but sit on the sidelines.

These decreases pertain not just to structured physical activity but also to daily, every day, physical activity. Walking trips from home decreased by about 50% from 1977 to 1995. Again, safety is one of the main reasons that people cite for not walking. Our culture is very sedentary. Recent data investigating daily media time suggest that young people ages 8 to 18 year spend about 6 1/2 hours per day using media (Roberts et al., 1999). Television, videotapes, computer games, and video games contribute to a significant amount of time spent on sedentary activities.

In surveys that asked children about their homes, 58% of them responded that they usually have a television turned on during meals, 49% of them had no house rules regarding television viewing, and 42% said that the television is turned on most or all of the time in their house (Roberts et al, 1999). This represents another area that demonstrates a need for an intervention related to rule and limit setting in families. Increasing numbers of children have televisions in their bedrooms; almost 40% of children age 5 to 7 years have a television in their bedroom and in the 8 to 18 year-old category two-thirds have a television in their bedrooms (Roberts et al., 1999). These statistics reflect huge changes from the 1970s.

Television may partially explain some of the differences in obesity rates among different racial and ethnic groups. Data comparing the period 1967 to 1970 and 1990 show a doubling in the percentage of children who watch five hours or more of television per day (Roberts et al, 1999). Both sedentary behavior related to television watching and the advertising content are causes for concern. Analysis of prime time network shows viewed by children and adolescents found that 40% of ads were for fast foods,

Percent of youth who have a television in their bedroom	
2-4 years	26%
5-7 years	39%
8-18 years	65%
2-18 years	53%

Source: Roberts et al., 1999

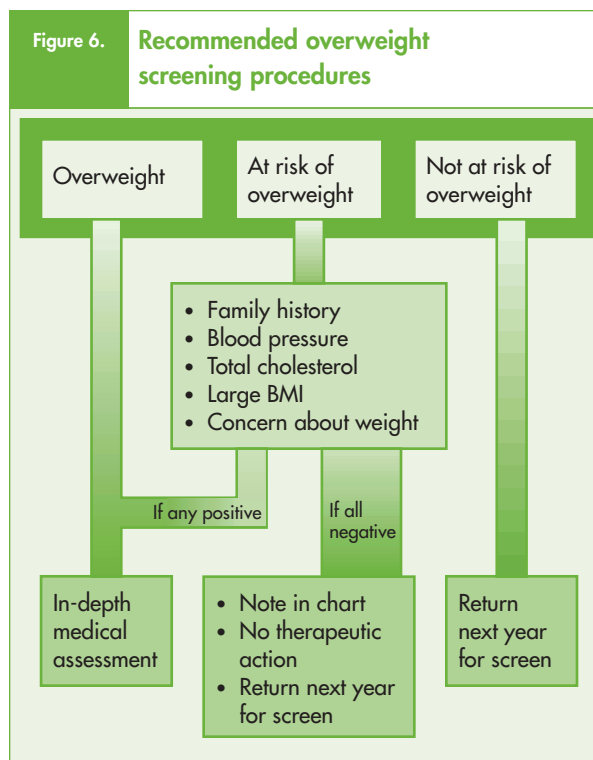
with French fries representing 80% of all vegetables advertised (Bryd-Bredbenner & Grasso, 1995; Bryd-Bredbenner & Grasso, 1999). Data from 1998 show that \$549 million was spent on advertising soft drinks, \$330 million was spent on advertising snack foods and more than \$3 billion was spent to advertise fast foods (Gall, 1999). Food advertisements account for 53% of programming commercials with only about 6-7% devoted to public service announcements for nutrition and non-nutrition related health.

In 2000 the food industry spent \$1.3 billion to advertise fast food (*Advertising Age*, 2000). These advertising dollars appear well invested when compared to the \$13 billion that young people spend purchasing their products. The \$67 million that M&M candy spends each year advertising its products stands in stark comparison to grant awards that are used to investigate adolescent nutritional concerns (*Advertising Age*, 1999).

The USDA's 1997 Nutrition Education budget was about \$350 million. Compare that to the \$2.1 billion spent on snacks, soft drinks, candy, gum, and fast foods. Making an impact in adolescent eating habits for researchers and educators who are dealing with pocket change compared to corporate advertising budgets, underscores not only the difference in resources but also the challenge of getting young people's attention.

Treatment

Expert committee guidelines for detecting and treating overweight and associated medical complications recommend using BMI percentages to assess risk of obesity and to determine the type of medical evaluation required (Himes & Deitz, 1994; Barlow & Dietz, 1998). Researchers have developed a flow chart for treating overweight adolescents (Himes & Dietz, 1994). According to the chart, people with a BMI that is less than the 85th percentile should be screened annually. However, health promotion information should be definitely offered to adolescents with a BMI at the 85th percentile or above, because they need some intervention. In-depth medical assessment is indicated for adolescents who have one of the risk factors or have a BMI above the 95th percentile.



Source: This chart includes a combination of data described in Barlow and Dietz's article (1998) and Himes and Dietz article (1994) that outlines the Expert Committee recommendations.

Figure 7. In-depth medical examination components

Family history	Personal history	Physical examination
Obesity	Weight history	Sexual maturation rating
Type 2 diabetes mellitus	Growth history	Height, weight, BMI
Hypertension	Use of tobacco, drugs, alcohol	Anthropometric measurements (triceps, subscapular skinfolds)
Dyslipidemia	Depression	Blood pressure, lipid profile
Cardiovascular disease	Disordered eating	Screen for:
Gallbladder disease	Amenorrhea/oligomenorrhea	• Genetic disorders
Eating disorder	Developmental delay	• Hyperthyroidism
	Dietary intake assessment	• Cushing's syndrome
	Physical activity assessment	• Prader-Willi syndrome
		• Pseudotumor cerebri
		• Sleep apnea
		• Obesity hypoventilation disorders
		• Gallbladder disease
		• Slipped capital femoral epiphysis
		• Blount's disease
		• Type 2 diabetes mellitus
		• Insulin resistance
		• Polycystic ovary syndrome

Source: Adapted from Himes & Deitz, 1994; Barlow & Deitz, 1998

An in-depth medical examination should include an assessment of family history related to cardiovascular issues, obesity, and eating disorders. The examination should include weight and growth history in addition to looking at signs of disordered eating, depression, dysmenorrhea, and substance use. Physical examinations should include a sexual maturation rating or Tanner staging and assessment of body fat levels. Determinations should be made regarding any problems with adiposity and lean body mass. Blood pressure, blood lipids, screening for complications, orthopedic disorders, hyperventilation disorders, and endocrine disorders should all be assessed.

Treatment recommendations should be based on age, developmental stage, and the presence of medical complications. For instance, the Barlow and Dietz recommendations include expert panel suggestions about weight maintenance as the first step in treatment. For young people who have a BMI value \geq 85th percentile but $<$ 95th percentile for age and gender should be referred to a medical provider for assessment of the presence of excess body fat, family history of obesity, indications of hypertension or dyslipidemia, sexual maturation rating, and monitoring of changes in BMI (Himes & Deitz, 1994; Barlow & Dietz, 1998). Adolescents with a BMI \geq 95th percentile for age and gender, or those who are at risk for overweight and screen positive for any

medical complications listed above, should be referred for an in-depth medical assessment to determine the presence and extent of medical and psychological complications. Weight loss is probably recommended after they demonstrate that they can maintain their weight. If the BMI is above the 95th percentile, weight loss is recommended.

The primary goals should be related to eating and physical activity behaviors in addition to resolving the co-morbidities. Interventions should not be focused on weight.

Components of successful treatment programs

Reviews of child and adolescent obesity treatment programs describe essential components for successful interventions, focusing both on treatment components of programs as well as organizational factors. Adolescent obesity interventions in clinical settings generally offer assessment and counseling related to diet and physical activity as well as behavior strategies such as problem solving, stimulus control, or behavior modification (Epstein et al., 2001; Epstein & Goldfield, 1999; Story, 1999; Robinson, 1999; Jelalian & Saelens, 1999). Programs in schools have offered combinations of nutrition education, physical education, modifications of school meals, dietary assessment and counseling, and instruction on behavior modification strategies. Effective programs for adolescents all feature a number of similar elements. These elements include a dietary intervention component, physical activity, a behavioral aspect, and parental involvement.

Dietary counseling Dietary counseling should include explicit instructions and concrete examples for adolescents to attain success. For example, food exchanges can be difficult for adolescents to understand completely. Effective programs feature instructions related to reading food labels with special emphasis on eating five grams of fat or less. Adolescents want to participate in determining the changes that they will make. Materials for pregnant adolescents should be designed to help them compare their food intake with specific recommendations.

Adolescents need to have some ownership in their situations and most want to be involved in determining where they fall. Young people appreciate goal

setting and feedback in addition to some kind of reward. This provides an opportunity to identify non-food rewards. Because fast food is part of their lives, adolescents need options, creative ideas, and concrete things they can do when they go to fast food restaurants with friends.

Some people have used very low calorie diets and protein-sparing modified fasts to lose weight. These approaches help people achieve results but the long-term data finds that most of the weight is regained within one to five years. People cannot stay on these diets for extended periods of time because of metabolic and physical complications. Children and adolescents should be discouraged from remaining on these diets for longer than 12 weeks. If they participate in these diets, they need very close medical monitoring.

Outcome data from treatment programs suggest that the specific macronutrient contents of program dietary restrictions may matter less than the behavioral components of nutrition counseling (Robinson, 1999; Jelalian & Saelens, 1999). The limited data available on outcomes of very low calorie diets or protein sparing modified fasts (PSMF) suggest that while these dietary modifications may provide significant weight loss in a short period of time, most individuals will regain some or all of the lost weight after cessation of the intensive dietary regimen (Figueroa-Colon et al., 1996; Stallings et al., 1988; Suskind et al., 1993; Sothorn et al., 1999). Medical risks associated with the use of PSMF diets can include orthostatic hypotension, diarrhea, hyperuricemia, cholelithiasis, electrolyte imbalance, and decreased serum proteins (Mathew & Lifshitz, 1974; Merritt et al., 1981). Therefore, the use of PSMF diets generally requires intensive medical supervision during the program, and should not exceed 12 weeks in duration (Yanovski, 2001).

Physical activity assessment and counseling Physical activity assessment and counseling is very similar to dietary counseling. Recommendations include involving adolescents in their treatment by identifying goals and determining a reward of interest to them. Successful programs focus on adolescent's lifestyle activity and not some type of a structured

activity. Longitudinal research found patients who incorporated lifestyle physical activity were much more likely to retain weight loss because exercise became part of their everyday life (Epstein & Goldfeld, 1999).

Sedentary behaviors Sedentary behaviors and physical activity are distinct; successful interventions treat them separately. Another study by Epstein included manipulation of children's and adolescent's sedentary activity (Epstein et al., 2002). An interesting aspect of this study was the finding that when sedentary activity was increased, not only did young people's calorie expenditure decrease but also their calories increased by almost 300 calories. These researchers identified that young people were more likely to snack when they were sedentary; so they were not only inactive but also they were eating and drinking high-energy dense foods and beverages at the same time. Sedentary activity should be treated as a separate aspect of behavior change.

Parental involvement Parental involvement is a critical aspect of many successful programs. Epstein's research included recognition of the parental piece with respect to who was more likely to maintain weight loss (Epstein et al., 1994). Other recent research that investigated group versus individual family interventions found that the groups were just as effective as the single family interventions and much less expensive. According to these data, small group interventions for weight loss can be very effective (Goldfield et al., 2001).

Obesity data from adolescent programs that excluded overweight parents showed compromised weight loss and maintenance for young people who participated. Programs that offer a child/adolescent component as well as a parent component appear to decrease the likelihood that lost weight will be regained within 1-10 years compared to programs that offer intervention only for youth (Epstein et al., 2001; Epstein & Goldfield, 1999; Epstein et al., 1994). According to five- and ten-year follow up data, more than a third of participants whose programs included a parental activity component, decreased their percentage of body weight by at least 20% or more, and more than a third were not obese by the end of the program

(Epstein et al., 1994). Treating children without including parents resulted in some weight loss maintenance but not a lot. When parents participated, big changes in adolescent weight loss were evident.

Pharmacological agents/bariatric surgery Most pharmacological agents either reduce fat absorption or reduce appetite. Unfortunately, they have a number of side effects. Very few five- and ten-year follow-up studies are available on the effects of these medications with adolescents (Yanovski, 2001).

Bariatric surgery includes numerous complications. In at least one study there was a 5% death rate among the adolescents who were included. Obesity treatment specialists recommend bariatric surgery only for life-threatening co-morbid conditions (Strauss et al., 2001).

Barriers to effective treatment A survey of dietitians, pediatricians, and pediatric nurse practitioners, published in a *Pediatrics* supplement (July 2002), looked at barriers to effective treatment. Survey findings include the following:

- Lack of parental involvement was most frequently cited as a barrier by all of the groups combined
- Lack of reimbursement was an issue for most people but particularly for dietitians when compared to nurse practitioners or physicians
- Lack of patient motivation
- Lack of support services, including access to mental health professionals, nutrition professionals or exercise physiologists, was identified by more than half of all the practitioners interviewed
- Treatment futility
- Lack of time was of particular concern to physicians
- Eating disorders were identified by less than 20%

With respect to proficiency in patient management skills, addressing family conflict related to food issues was considered very challenging. Parents are uncomfortable dealing with food issues when children are young as well as during the teenage years.

Professionals identified that teaching parenting techniques and behavior management strategies with adolescents was a low proficiency area. When the health professionals were asked what kinds of skills they wanted training in, parenting skills were identified by more than half the professionals, addressing family conflicts by about half, and the use of behavioral management strategies by more than half.

According to this study, not many professionals were using BMI as their initial screening; the majority of professionals relied on clinical assessment, their clinical subjective measurement.

School-based treatment and intervention programs

Most school-based programs include a school food service component, a classroom component, physical activity, and interventions. Evaluation of effectiveness identified that almost all of these components showed changes in knowledge. Although more than half of them identified changes in behavior, very few actually showed changes in BMI or percent of overweight.

The Planet Health Curriculum is an exception to these findings. Evaluation of the Planet Health Curricula demonstrated a reduction in the prevalence of obesity among girls. Obesity prevalence in boys decreased slightly too, but the decrease did not appear related to the intervention per se.

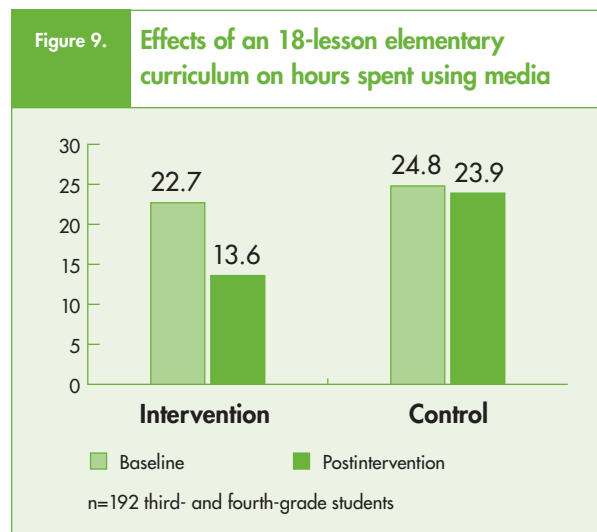
School		Baseline	Follow-up
Girls	Control	21.5%	23.7%
	Intervention	23.6%	20.3%**
Boys	Control	34.7%	31.8%
	Intervention	29.3%	27.8%

* BMI and TSF \geq 85th percentile
 ** $p \leq 0.05$

Source: Gortmaker et al. Arch Pediatr Adolesc Med 1999

Robinson (1999) has investigated media use and overweight. Using an 18-lesson elementary school curriculum, his research showed that participants in the intervention group reduced hours spent using media. This intervention also found smaller increases

in BMI. Among the controls BMI increased by about .7 BMI units, whereas participants in the intervention group increased by about .3.



Source: Gortmaker et al. Arch Pediatr Adolesc Med 1999

Looking beyond schools Schools provide an intriguing research site because adolescents spend a great deal of time there. However, venues to research young people and increase understanding of eating patterns, sedentary behaviors, and physical activity must include a broader scope of where young people spend time. Other venues include locations where adolescents congregate, especially shopping centers and malls. Other places where adolescents spend time include fast food outlets, convenience stores, work sites, and spiritual organizations whether they are attending religious services or participating in volunteer activities (Story et al., 2000).

A few obesity prevention programs have been implemented in public housing developments and they have shown changes in eating behavior. These programs have shown some successes with African American pre-adolescent and adolescent girls because of the mother-daughter family component (Fitzgibbon et al., 1995; Stolley & Fitzgibbon, 1997; Resnicow et al., 1999).

Adapting public health programs Traditional nutrition models could be expanded to consider other areas of adolescent health and the success of other programs. For instance, tobacco and alcohol prevention programs, pregnancy prevention programs, drug abuse preven-

tion programs, chronic disease, and other programs that consider adolescent's environment, their parents, and the adolescents themselves have demonstrated success that could be adapted to address obesity (Wagenaar & Perry, 1994; Perry et al., 1996; Wechsler & Weitzman, 1996; Schooler et al., 1997; Forster et al., 1998).

Potential models for prevention and other areas of adolescent health

- Tobacco and alcohol access and use prevention programs
- Drug abuse prevention programs
- Chronic disease prevention programs
- Pregnancy prevention programs

The CANFit Program in California (www.canfit.org) features teams that are actively involved in working with community leaders by identifying a problem in their environment and working with the community leaders to find solutions for that problem. Problems are generally related to nutrition and physical activity (Hinkle, 1997). This appears to be a very promising program whose evaluation will be an important contribution to our understanding of adolescent overweight and obesity.

Strategies Obesity is a complex health issue. Health professionals, parents, and community leaders should all consider areas of young people's lives where they can make a difference in nutrition and physical activity.

Professionals can support policy changes related to providing anticipatory guidance in health care encounters. Many parents are not familiar with the concepts of "normal growth" and "normal weight gain". Similarly, parents may not be familiar with normal eating and physical activity behaviors; unless anticipatory guidance is provided in their health care settings, parents may not seek it out or get it.

Reimbursement for obesity treatment and prevention services across the board is a key issue for professionals who treat adolescent patients. These professionals

include physicians, dieticians, physical therapists, physical activity professionals, mental health professionals, nurses, and nurse practitioners.

All professionals need access to training about adolescent overweight and obesity. In some minority communities para-professionals are the most knowledgeable about how to reach members of their communities. However, they need training and we need to include them in our efforts to reach young people.

Changes in nutritional policies need support. Although many policies are national or state-based, some are local and require close scrutiny. Local policies should be reviewed to ensure that they meet minimal standards for all schools and that all foods and beverages sold meet minimal standards, whether it's a la carte or USDA reimbursable meals. This helps limit the access to those energy dense foods in public places and gives economic or other incentives to communities for developing food venues that offer reasonable portions and provide healthy foods for adolescents.

As health care professionals, we need to provide education about how we can establish and reinforce boundaries related to food, sedentary behavior, and physical activity. Clearly, parents don't want to deal with it; they don't feel they have the skills. It came out as one of the big skill areas that health care professionals want training in, too. We need to offer problem-solving skills and conflict resolution skills to parents.

Professionals need to reinforce the role of parental modeling in adolescent overweight and obesity reduction. Some parents may not appreciate the importance of their participation. In February 2002 school districts in Pennsylvania and Florida sent letters home to parents regarding their children's weight. Although the parents who received these letters were irate, they may not have appreciated that overweight and obese children are at eight times the risk for hypertension and 12 times the risk for airflow resistance. Some parents consider overweight or obesity as a cosmetic issue only, and they are unaware of the co-morbidities. Professionals need to appreciate that parental knowledge is a key piece of getting treatment for their adolescents.

Supporting local and statewide efforts to develop communities that encourage physical activity is another critical strategy for addressing adolescent overweight and obesity. Professionals need to involve the urban planners who create parks and recreational facilities. Young people need safe streets and safe parks and this necessitates policy involvement to improve and maintain security.

Another important strategy is developing non-competitive physical activity options. Adolescent females like yoga, martial arts, and walking. They don't want to do things in which they have to be competitive against other individuals or in which they feel as if they might fail. They want to do things that make them feel good about themselves and are self-fulfilling.

Professionals can advocate for mass communication policies that are national, state, or local. Funding social marketing policies does not have to require millions of dollars; even 10% of some corporate marketing budgets would be adequate to begin to air public service announcements that feature the benefits of fruits and vegetables.

Advertising regulations could require equal advertising time for promotion of healthy physical activity and nutritional products compared to some of the current options that now flood the airwaves. In addition to television, radio, and the Internet, print and outdoor advertising could be similarly regulated. Billboards near schools are important locations for health promotion of food and physical activity. Food companies send home free samples with elementary school children to establish brand loyalty early in life.

Research participation is another important aspect of addressing adolescent overweight and obesity. Intervention programs need to be culturally and developmentally appropriate. Research conducted at the University of Minnesota with Native American, African American, and Hmong communities clearly demonstrated that one type of program is not going to meet the diverse needs of differing cultural groups. It is noteworthy that differences exist among various Native American tribes. In fact, each tribal nation requested its own program with its own logo, stories,

and cultural traditions. Formative assessment with these groups is required to determine the most appropriate programming to reach them and meet their needs.

Identifying best practices related to community-based prevention programs is another critical aspect of reaching young people. When something works, it's important that professionals have access to it. For instance, the Cincinnati program that is described in the March 2002 *Journal of the American Dietetic Association* supplement is an excellent treatment program, but more people need to know about it.

Obesity has a price tag and the economic costs of obesity require definition. Although some information is available, we have not even begun to evaluate the prevention services.

The factors that promote and maintain behavior change require definition. Marketing professionals are adept at defining these factors. They effectively segment the population; for instance, women in my age range are segmented into four groups and they are very clear about my group. Dieticians and other health professionals could learn a great deal about how marketing professionals conduct research and interest the public in their products.

Because numerous ways to reach young people are available, professionals need to explore alternative approaches to educating and counseling adolescents about healthy life styles. We know that we have to grab the attention of adolescents. They don't like pamphlets, so we need to use television and as many computer-based options as possible. Messages should be graphic with movement and sound; black and white pieces of paper just don't get their attention.

Recommendations for health care professionals

Rates of overweight and obesity among adolescents have increased dramatically in the US during the past three decades. Not only are greater numbers of adolescents overweight now compared to past generations, but the degree of obesity appears to be increasing as well. The medical and psychological complications associated with adolescent obesity affect both immediate and long-term health status. Costs associated with treating medical and psychological complications of obesity among teens have more than tripled in the past three decades, and these costs are likely to continue to climb in concert with increasing rates of obesity. Efforts to prevent obesity among children and adolescents are clearly needed.

- **Integrate** the practice of early detection and intervention of inappropriate weight gain or large changes in BMI among children and adolescents. Ideally, this would occur before an individual reaches the 85th percentile of BMI, and certainly it should occur before an adolescent reaches the 95th percentile of BMI.
- **Work** with community leaders, agencies, and organizations to develop safe, affordable opportunities for non-competitive physical activity within schools and neighborhoods.
- **Advocate** for the development of public policy that assures that all foods and beverages available to students in school settings meet minimal nutrition standards. Work with local school administrators to seek alternative funding sources outside of exclusive contracts with fast food and soft drink companies.
- **Support** the development of national standards to regulate the advertisement and promotion of energy dense foods and beverages to teenagers through schools and mass media.
- **Work** with third party reimbursement organizations to require reimbursement for preventive health care services. Reimbursement should cover all services of weight management programs including nutrition education, physical activity counseling, and behavioral interventions.
- **Educate** parents, teachers, and other individuals who interact with adolescents about potential medical and psychosocial consequences of adolescent obesity.

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Adolescent Obesity

Educational Forum on Adolescent Health
November 14, 2002

Panelist remarks

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Nancy Sheehan, MD, MPH

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University of Connecticut

American College of Preventive Medicine

Dr. Nancy Sheehan is trained in pediatrics and spent fellowship training years in preventive medicine and public health. She completed a preventive medicine residency at Stony Brook and received her MPH from Columbia University. Her public health project there focused on childhood obesity. Dr. Sheehan is currently a physician at the University of Connecticut Student Health Service where she has been for the past 12 years.

I want to preface my comments by giving you a sense of where I am. I've been at the University of Connecticut Student Health Service for 12 years now. I was hired as a staff physician. My role is considered to be a front line physician although they knew when I went there that I was preventive medicine trained and boarded and that was a strong interest of mine. They never really promised me much time to pursue that outside of working one-on-one with my patients, but that has been an effort that I have tried to continue in one way or another since I've been there.

At this point I can't say I have an exemplary program. I've had a lot of experience and a lot of road blocks and I still persist in trying to improve both the population's health and our approach to the population as well as working with individual patients.

I'm going to talk about a traditional or typical college population which includes late adolescents and young adults. The definitions I'm using are more the old definitions of BMI of more than or equal to 25 kilograms per meter squared ($\geq 25\text{kg/m}^2$) being considered overweight. Secondly, more than or equal to 30 kilograms per meter squared ($\geq 30\text{kg/m}^2$) is considered obese. We don't have routine fat composition measurements for a number of different reasons. Proficiency at using the calipers, doubts in some of the other measurements, and no water tank are reasons that we use BMI at this point.

The college population tends to be healthy but obesity is still a major problem. Obesity statistics are available from a number of sources. The specifics for college statistics are from the 1995 National College Health Risk Behavior Survey (NCHRBS). Since then the American College Health Association has tried to develop a version of that survey. Although it's gone through a number of different revisions, I think they have developed a final form so that we will be able to really look at the data. These data are a little old but according to the NCHRBS, in 1995, 35% of college students were considered overweight with 11.4% being obese. I'm sure it's more than that at this point. Consider that among the 18-24 year olds, 27% are considered overweight and that among the 25-39 year olds, 44% are considered obese so you see the increase with age.

Looking at the 2000 NHANES data, it's at 31% obesity in people older than 20 years of age.

More than 14 million people are enrolled in 2 and 4 year colleges. Approximately 25% of 18-24 year olds are currently enrolled at least part time in college.

More than 50% of 20-24 year olds have taken at least some college courses.

Although the college population tends to be healthier than the general population, overweight/obesity is still a significant health problem.

In 1995

- 35% of college students were overweight
- 18-24 year olds at 27%
- 25-39 year olds at 44%

Note the increased overweight compared to 18-24 years old percentage.

Source: National College Health Risk Behavior Survey (NCHRBS), 1995

In 2000

- 31% of the general population ≥ 20 years old were overweight
- high school age at 26%
- \geq college degree at 15%

Source: NHANES, 2000

The complications of overweight don't differ from what Dr. Stang noted, although we tend to see more of the complications, particularly in those who have been overweight for some time. The other concern I have is that we're only seeing a small fraction of those who are overweight or obese in the student health service. A great concern of mine is how to get those students who are at risk or are already obese into the loop so that we can give them appropriate services.

As far as factors associated with being overweight, the general categories don't differ from what Dr. Stang mentioned but some of the specific influences can differ. When adolescents come to college, it is often

their first time on their own, making their own lifestyle changes and choices. They have a sense of omnipotence and are very ready to experiment. Plus, they're in a new "toxic environment" where fast food, or any kind of food they want, is easily available.

With respect to dietary impact, even though the dietary services insist they offer healthy food choices, students usually select high energy content foods.

Other issues include the fact that fast foods are easily available, anywhere. It's often part of a social setting to order out. Students get a pizza or order chicken wings. A lot of students don't eat breakfast because they're not ready to get up in the morning. They sleep until the last minute so they're not eating breakfast on a regular basis.

Alcohol is another concern; it's a source of empty calories. According to NCHRBS, the fruit and vegetable intake is as dismal in college students as in the general population.

The frequency of exercise continues its downward trend throughout the college age group and beyond, as we know. The students are spending more time sitting in class, sitting at the computer studying, and working in the library. There's not much physical activity going on a lot of the time.

One of the things that University of Connecticut has done, against a lot of employees' and students' desires, was to make the University more of a pedestrian campus. All the parking was moved to the outside periphery. It has caused major battles, but I think one of the good things about it is that it is making people walk more. Unfortunately, students don't feel like they have any time to walk or do any other physical activity. They do have more resources available on campus with gyms, but it's only a certain fraction of the population that's going to use them. Those that are in the overweight category may shy away from even using any of those resources because of embarrassment and feeling inept.

Data from BRFSS 2000 and YRBSS 1995 I reviewed the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS) 2000 data. I looked at those who were trying to lose weight, what they did related to diet and

exercise. The younger group tends to use diet and exercise in close to equal amounts, although only 17.5% of everyone uses both. The older group of people age 50 years or older is much more focused on diet than exercise.

Another piece of information I found very interesting from the NCHRBS was that 60% of the females were trying to lose weight but only 30% were considered overweight. These are disordered eating and body image problems.

Disordered eating/Body image

Information from the Child Trends Data Bank (www.childtrendsdatabank.org/) showed me something that surprised me. This is looking at what we would consider bulimia. Although they use laxatives or vomiting to lose weight or avoid gaining weight and the vast majority of bulimics are either normal weight or overweight. Regarding grades 9 to 12, I was struck by looking at the female data at how many more Hispanic females were using laxatives or vomiting than white females.¹ I had always assumed that this was a white female problem. This data shocked me. Are we not identifying those girls because we have a set picture in our mind of what a bulimic looks like? Are we not asking the right questions to other people that might fall into the category?

We divide the group of overweight into two groups: those who come into school overweight and those who become overweight while they're in school. There is really no difference once they are overweight as far as the approach but the preventive efforts and where we need to start differ.

One of my future pet projects is to have a health risk appraisal done on all incoming freshman to identify risk factors for those who are already overweight and for those who clearly are not doing regular exercise or their nutrition is less than desirable. I want to look at plugging them into resources on campus. One of the beautiful things about a university setting is that we have an immense amount of resources. You've got nutrition school, you've got trainers, you've got everything as well as the gyms and usually the campus which you can use to increase the physical activity.

¹ Source: www.childtrendsdatabank.org/figures/18-Figure-2.gif and www.childtrendsdatabank.org/tables/18_Table_1.htm

But one of the problems is trying to get all of those pieces together. With a health risk appraisal, we would know where our population is at entry. At this point, the only people we do know are the roughly 50% of the students who walk into the health service. It may be more than that, but it's just for one brief visit. Then, we lose them and we don't have a lot of the information we would need to plug them into the appropriate preventive services to have an impact. But the other part of that is organizing the campus resources, dining services, school nutrition, physical therapy, and trying to integrate them and working toward a program where we can plug students in so that they can get the appropriate services—this is a challenge. In the process we would try to change the social norm of campus by having one picture of “this is where we want to be.”

Other issues include the proliferation of vending machines. You go to the student union, you've got Pizza Hut. Although these are higher-level administrative decisions, it's a very complicated problem, and I think it's important to address all different aspects of the problem. Unfortunately, doing that to start with is almost impossible.

The important thing is identifying as many of the components as possible. That requires ongoing identification because it is going to become clear as time goes on what other components are playing a role. Try to address as many of them as you can and keep in the back in the mind, “What are the other things we need to do?” It does take building a coalition in whatever population you're working with.

Change is a process. Often it is slow and frustrating and very easy to say, “This just isn't working.” One of the things we need to address is our general sense of wanting quick results. We need to make sure that we have a mindset of, “It's not going to change tomorrow, it may only be a tiny, little change the next day; but, if we persist and continue to plan and reassess and move forward, eventually we will see that change become much larger.” If we say, “Okay, we've got to change all of this,” it's too much.

Even with an individual patient, if I say to him, “Okay, you've got to work on your cholesterol, you've got to stop smoking, you've got to exercise”, he is overwhelmed. I really try to focus in, “Okay, these are the issues that we need to address.” Now let's talk about one to start with and keep the other ones in the back of your mind. Get that well established. What skills do you need to do this? What information do you need to do this? Who else can you involve to help you along in this process? And, then we move from there.

I almost never focus on weight. I don't even like weighing people other than to get an initial assessment. I think the minute I focus on the weight and not the health behaviors, it often becomes a judgmental thing in the person's head and the self esteem kicks in. “Oh, I can't do this, you know.”

Think about environmental components. You have to address the environment in the smaller and larger scale. The University of Connecticut is going to a pedestrian campus, although I don't think the reason they did it was to increase physical activity. They wanted more room for more buildings. Consider working in the different levels of your organizations. There can be things that can happen that can have multiple good results; look for those opportunities. Really work on the perceived norm. Is there a Burger King sign on every door? Or is there a huge Coke machine at both ends of each hall versus having maybe one Coke machine?

Environmental components need to be addressed not only on the community level of whatever community you're talking about, whether it's a college campus, whether it's a school, whether it's a work environment, whether it's just a town, but also on the national and state levels because there is no way you can stop the barrage of advertising and unhealthy resources if you don't address it there as well. But you may just have to start at the community level and do what you can. You have to start somewhere. One of the things that is the most difficult in health promotion/disease prevention is people's frustration about change. You don't get quick change but you can get into the mindset that you can have little changes that add up to big changes, stay with that and try not to get frustrated.

Think about screening. As I said, I think that there probably are a lot of overweight people that we don't even see, and therefore we have no opportunity to intervene with or plug them into other campus resources. That's why I want to get a health risk appraisal in here that students can go into and can also reassess as time goes on. But it takes money and willingness for people to allow this because there are so many fiefdoms, as there are in any organization.

Obviously, education, knowledge, and skills are crucial. The college population is much more educated and has access to many more resources and still it is not enough. I think skills are one of the key areas we are missing. Yes, they know about what they should eat, yes, they know they should exercise, but where are the skills? How do we increase our physical activity and make it realistic to their lives?

Consider motivation. There are so many aspects of life that affect motivation. A lot of it starts from day one, maybe in utero, as far as self esteem and the modeling that goes on all along before they even get to the university. But other keys for motivation are making sure they know the potential adverse effects, know that it feels good when you exercise and you eat right. You have more energy. Describe motivation in a way that's palatable to the patient or the population that you're talking to.

Access is a major issue. This means access to preventive services through health insurance; access to the kind of quality foods you want at a reasonable price. It's much cheaper to eat fast food, both in time and money. Students must have opportunities to be physically active, not necessarily just doing exercise but being physically active safely. We've had a couple of incidents in the last two months of rape and attempted rapes. So even on this wonderful country campus, there's a lot of concern about whether you should go out, be alone, where you can go.

Appropriate intervention services are another consideration. I think this is much more do-able on a college campus because you have the professional schools where a lot of the students in training could be providing that service. The bottom line is that you

need on-going support from the institution, from the students, from peers, from health care providers, and from the professors.

We need an invested group effort from the national level down to the individual (physician/patient and personal) level to reverse the obesity epidemic.

Primary prevention is always best. Secondary prevention is often difficult, but essential. Prevention and treatment of obesity is a complicated multifactorial problem.

Key components:

- **Environment** (Advertising, perceived social norm, what is available, pedestrian campus). Need to address on the national, state and community and school/work level
- **Screening** (Identify at-risk and obese) and appropriate referral
- **Education/Knowledge/Skills** Nutrition, physical activity, exercise, benefits/risks, coping skills. Need to address at the population level and individual level (personalized, especially when already overweight)
- **Motivation** (family/peer modeling/pressure, knowledge, "it feels good", self esteem)
- **Access** (Health insurance covering preventive services, cost/quality of food, opportunities to be physically active safely, appropriate affordable intervention service). Need to address on the national, state and community level
- **Support** at national, state, community, and individual level

Panelist remarks

Darlene Lawrence, MD

Practicing physician, Family Medicine
American Academy of Family Physicians

Dr. Lawrence is a family physician in solo practice in Washington, DC. She holds a number of leadership positions at the American Academy of Family Physicians including the Task Force for Urban and Inner City Health. She also serves on the Secretary's Commission on Public Health and on Secretary Thompson's Advisory Committee on Infant Mortality.

I'm Darlene Lawrence and I would like to thank Dr. Stang for her presentation and Dr. Sheehan for her comments. I am a family physician in solo practice. I'm very active in the American Academy of Family Physicians and in urban and inner city health issues. That is the perspective that I'm going to bring today.

In my urban inner city family practice, I have 93% black patients (I don't use the term African American all the time.) I have black patients who are Africans, African American, African Hispanic, and Caribbean American. These are my black patients.

I have about 5% Hispanic and Hispanic American patients and 2% Asian American, Caucasian, Middle Eastern, Pacific Islanders and the rest. So I have a very small percentage but they do come because I'm in lots of the HMOs in Washington, DC.

In talking about adolescent overweight and obesity, I'm going to take a different approach. Dr. Stang talked about the body mass indices. Before that we used CDC growth charts. We still use CDC growth charts but I also have a body mass index wheel in each patient room and in the triage station. I'm trying to teach my staff to use that first if patients are concerned about their weight or their body image or if our staff is concerned about the patient's weight or body image.

What is interesting is that in looking at the definition and assessment of overweight and obesity, we often forget that the adults have a certain perception of where their child is in their body image. You often will have a complaint from the mom and dad, usually the mom, "my daughter's overweight," or "my daughter is underweight," and that's what I'm getting a lot in my practice is that "my daughter is underweight, she needs to gain weight."

The other interesting part is the adolescent perception. There's a Caucasian perception, and then there's a minority perception. Then there's a childhood perception, and on our health forms and our history and physical forms, we have EPSDT that we check about 10 times before the child is age 2, and then once a year after that.

One of the questions I ask once the child can talk is, "Do you think you're fat, skinny, or normal?" Often, I get skinny, even when they are quite normal or close to fat.

There's a term that I learned in anthropology as my major at Wake Forest. Steatopygia—the accumulation of large quantities of fat in the buttocks. In the Hottentots of Africa, this is a normal condition, thought to be an adaptation that allows fat storage without impeding heat loss from the rest of the body. Steatopygia. It's been noted throughout history in statues from Czechoslovakia, Austria, and France and into Africa. What's more interesting is that nowadays steatopygia means "nice butt." Jennifer Lopez is well-known among the Hispanic and the black population as having a nice butt. She is not at all considered to be overweight. If you were to check her BMI she may be in the higher levels. We also have Beyonce Knowles. Her most recent album was called "Bootylicious." She has a nice butt. She is considered not to be skinny. If you noticed in the most recent Austin Powers film, she has a little bit of truncal adiposity. She's not skinny but she is considered among the African American population, the black population, the Hispanic population, and most populations to be very sexy in that movie.

Big is in. Notorious B.I.G. God rest his soul. Big Pun died due to complications due to his weight. He had actually lost approximately 100 pounds right before he died, and it was in his most recent song before he died. B.I.G. was shot and Heavy D is still with us, but all of them are very, very popular among the adolescents in this country. Big is in.

So we have to remember that we have a different perception. I have patients that come into the office who want Depo-Provera because they've heard it makes you gain a little weight. I've had people who complain, "How can I gain a little weight? I'm too skinny." And I have patients who are overweight and sometimes even morbidly obese but they have boyfriends, they have girlfriends, they are getting married, they have two children, they are happy, their self-esteem is very healthy.

It is difficult to address the issue with them, “Well, you’re causing a lot of future risk for your life,” when they think that they’re happy. And they’re in that stage where they already think they’re invincible anyway. Adolescence has the invincible nature to it.

When talking about the epidemiology and the evidence-based data, I work with the NHANES. I wanted to ask the question: were Hispanic and black female data controlled for pregnancy and contraceptive management? Because we have a high prevalence of pregnancy that is not always undesired. We have to remember that; it is always spoken about at the Secretary’s Advisory Committee on Infant Mortality. A lot of that pregnancy is not undesired; it is very much desired pregnancy. It helps them to feel loved that they have someone who they have to love. But it is undesired for the health care population. It’s undesired for our nation, but it’s not undesired by them.

I wonder if that data were controlled for because with adolescent pregnancy we are trying to encourage our patients to eat and not hide their pregnancy, to eat three meals a day and have two snacks and take their prenatal vitamins, and get a little exercise and get good sleep at night. You are bound to gain weight and then we ask them to breast feed, and it has been shown that when you breast feed for the first year you do not lose the weight, you maintain the body fat because it is more important to keep that so you produce good milk. So it would be interesting to see if any females in the study were not pregnant, but maybe postpartum. Were they held out from that study?

I agree that acculturation probably plays a part in the development of obesity among minorities. The number of generations that a person has been in the United States makes a big difference.

Dr. Stang mentioned the medical and psychosocial complications associated with obesity. Hypertension, dyslipidemia, Type II diabetes, polycystic ovarian syndrome, asthma, and depression are increased in my own practice in the adolescent and early adulthood population. However, eating disorders such as anorexia, bulimia, laxative abuse, and diuretic abuse all have a very low incidence in my own practice although they

have increased incidence in the United States among adolescents and into early adulthood. Blount disease, slipped capital femoral epiphysis, gall bladder disease, and sleep apnea are neither increased nor decreased. They’re about the same as the general population so I’m not finding that I have much increase in those at the bottom. I do have a lot of Syndrome X that’s happening at age 22.

Consider the factors associated with the development of overweight. The genetics and endocrine pathways were mentioned. I think this is so interesting. I have noted that the parent’s perception when a parent is obese, they rarely are concerned that their child is overweight. Not even the five and six year olds. So once they are 15, they’re really not concerned. It’s become a part of their lifestyle. The perception is that there is a higher correlation of genetics than there really is. “Oh, my family is big boned. All of us are.” That is a very common statement.

But the interesting part about the genetic pathway with the BMI greater than the 97th percentile, the abnormal leptin levels, all of those things; it’s a very small percentage. I wish that my obese adolescents had all these things so I could have something to treat them; I wish I had more redheads!

Prenatal nutritional status is probably more of a factor. I have seen this as well from the Secretary’s Advisory Committee. What was interesting were the data that showed that if you are undernourished in the pregnancy you could have increased obesity at adolescence. Because what we’re finding is that the parents who were low birth weight themselves have a greater tendency to have low birth rate infants when they birth. This is only females; we have not been able to show a correlation for the dads. So it must be timing, and I hope that we can work together on some of that data and find out the real correlations of all that information.

So if the undernutrition during critical periods of the pregnancy results in an increased rate of obesity in offspring, I wonder, when is it happening? Is it happening at childhood? Is it happening in adolescence? Is it happening because the babies were born

small, the low birth weight issue that we're dealing with, and then the parents are overcompensating? So environment may be moving into it.

Let's talk about environmental factors. Genetics places children and adolescents at risk for overweight and environment determines timing and extent. I really liked that comment and I will be using it again. I think that's a good way to look at it. We have risks; you can make it happen or not make it happen.

When you talk about the factors associated with the development of overweight, we have the dietary intake, the physical activity. On the dietary intake, are adolescents eating more food? We don't know the answer. We don't know whether they're actually eating more food than they did before. Is it less activity? Is it a worse type of food? I think we may agree that the portions definitely are bigger than before. Are adolescents eating more energy dense food? We need to consider added sweeteners, foods high in added fats, refined carbohydrates, and sugars. The data Dr. Stang presented on soft drinks was amazing.

So we look at the type of food and we look at the intake. Where is that intake occurring? Is it happening at home? But not as much at home as we would like. We would probably have greater control if it was more at home. We have intake at school, and I cannot wait to hear Russ. The intake outside of home and school, that's the part where we have to try to take some control and do some regulation.

My son is 13. He's a new adolescent. He's been waiting forever. I just presented a talk to my church on health ministry and living in divine health. I talked about how you can have a piece of fried chicken or even two if you just finished playing an hour and a half of football where you're the starting quarterback. We don't want to be too controlling about the amount of food kids take in if they have the activity to go with it.

Physical activity at home, we're finding, is lacking; we are becoming very sedentary. Living in the DC area, you know we just finished with a horrible time. [2002 sniper attacks in Washington DC area]. My two and a half year old daughter was going to sleep at three and four in the morning because her day care, which usually goes outside for three different hours

a day wasn't going outside during the attacks. They were on lock-down. I didn't realize what was going on at first. We had to take her to the playground twice in the evening while it was getting dark. That was difficult.

My son was still in football practice in the gym so he was getting some physical activity. But I told him if they had stopped practice, he would have to start running up and down the stairs. People don't always have stairs. There aren't things that the kids can do at home. Twister was a game that was popular in 1970s, we need to pull those games out again and start doing some active things at home.

Physical activity at school is usually organized, and is pretty good. But once again, only if the kids want to participate in those activities. Gym or PE is not mandatory as it was back in the 1960s, 1970s and even into the 1980s. The President's Council on Physical Fitness is basically gone. Arnold Schwarzenegger spent his own funds to visit each of the states back when he was the national representative on the Council. Where is the money spent on that? How many of you remember May Day, and having to wrap the ribbons around the Maypole and you wore gym clothes to school that day with the pretty white shirt and blue shorts? They don't do that anymore. Physical activity is not touted as a popular thing in the schools.

Physical activity outside of home and school, we have found, has to be one of the keys. And that is the community programs; I am very big on the community programs. I was cheerleader commissioner for my little league program for four years until I had knee surgery. I found that the knee surgery was because I had the little kids and when you have the little cheerleaders, you have to do it. You can't just say, "Do it." You have to show them.

But my husband is still a football coach and we have the cheerleaders and they go all the way up until 16. They really like the programs. When they cheer for the little league teams it's not competitive but they have the opportunity for it to go competitive when they go All Star or go into competitions. In the DC area, martial arts, gymnastics, cheering and dance team, basketball, baseball, softball, paint ball, laser tag,

track clubs, bowling, football are all very popular. Then as you move into the older adolescent years, there is dancing. Actually, starting at around age 13 they start with a very special type of dance called Battling. I find that black kids and Hispanic kids do a different type of partying than the white kids. I went to Wake Forest University and when I went to my first party it was a frat party and everyone stood around and there was a keg in the middle of the floor and you got beer spilled on you. This was not the type of party that I was used to. When you go to a black party, you come home smelling like sweat because you have been dancing non-stop the whole time. So if you partied in those groups, it means to go and dance. The younger group weren't dancing as much because it meant dancing with a boy and with a girl. So this new Battling is very interesting; people dance individually and it's almost like the break dancing but they don't get down on the floor as much. But it is very, very aerobic. It's become very popular with adolescents because couples aren't necessary.

One of the factors associated with the development of obesity is sedentary behaviors. Some of these sedentary behaviors take place at home. My son was invited to go play football a few months ago. He met his friends at the field and the other guys said, "Come to my house." They went to the guy's house and they went inside to play Madden on the Playstation. My son didn't understand that because he's so active. Boys used to go and play pickup football. Now, they're being sedentary even in their play groups. They want to play on the computer. They want to network and play "Age of Empires" over the Internet.

So, we need to watch the sedentary behaviors at home. With respect to the sedentary behaviors at school, there's not much we can do to change the fact that we are living in the information technology age. After a kid's been sitting in school for six hours and working at computers, we're going to have to learn to cope by giving them some activity time when they come home before they go back and do homework again.

Sedentary behaviors outside of home and school are going to be, especially in college, sitting at the e-mail bars and the computer bars. When I was in Spain

this past February, the biggest thing was the little computer cafes. They just sit there and e-mail all over the world. I wanted to say, "Go walk!"

Young people are watching football, rather than playing football. We find that our own staffs end up working for eight hours in less than eight feet of space. You know, I cause some of this. My staff has to sit there. I go from room to room, but they're really at the desk answering the phones.

Dr. Stang talked about treatment. With respect to the assessment and counseling on diet and activity, she talked about nutrition education and physical education. I think that modifications of school meals and behavior modification strategies are going to be very important.

I get requests for pharmacological agents in my practice but I do not allow use under the age of 18 in my own practice. I use phentermine and Xenical a lot, but not for patients younger than 18 years. For patients who are younger than 18 years, we're working on behavior modification until they get to that point where we can do something else. I think I have one or two morbidly obese adolescents that I would have considered pharmacological agents for but I've put them into programs at children's hospitals where they did behavior modification instead. I heard a discussion on the radio recently about whether bariatric surgery should be allowed for people under the age of 18 or 21. I think not, unless, once again, it is a life threatening issue because it is a life threatening surgery.

With respect to adolescent assessment and history, I have some recommendations.

Consider birth order. The baby child usually gets to go to McDonald's sooner than the oldest child. The mom and dad take much more care in selecting the healthier foods for the older child. They get tired by the fourth child. So birth order makes a big difference.

Think about family practices and myths related to meals. Many of you probably belonged to the Clean Plate Club. I do not make my children belong to the Clean Plate Club or my family deals with overweight. The strategy to get children to eat because they are thinking about starving children in other countries is not helpful. Most of us don't plan to send our food

over there, do we? So the myths around your meal times are very important. My mom actually worked for the Department of Agriculture right before she came home to take care of her children. We always had completely balanced meals, color, and composition. You had to have the green on your plate, white and the brown, the brown was meat, and it was very balanced. And some milk and some bread, and then a dessert had to be fruit. Although we may not have liked it, it created patterns that I'm able to take forward to my children now. The patterns that are made early will stick with you.

Family transportation patterns are another consideration. Some families use automobiles and others use public transportation. Not everyone has an automobile. If you're rural, you more than likely use a car to get to school. But in the urban area, those kids who have to use public transportation have to walk to get to the public transportation and have to walk from the public transportation to the school. In the district there are no school buses unless you have special education. So you have to walk from the public bus to the school, which gives you a little bit of walk each day, at least. So whether there are automobiles is a good risk assessment.

Proximity is another assessment item. Sometimes it's the supermarket versus the corner-style market/convenience store where there is going to be less fresh fruit; they may get two or three apples in the morning and two boiled eggs. Looking at schools with McDonald's right next door is an important aspect of the situation.

The fact that we have a new supermarket in Washington DC, the first one in 25 years, is amazing to me. I love it because it's a grocery store, a major chain that's right near the subway for those who use public transportation, and it's gorgeous. But there is no major grocery store or supermarket in Southeast Congress Heights. The majority of kids and minorities who are using Medicaid and live in Congress Heights don't have a supermarket. They are shopping at the corner market or at the convenience stores.

In the personal history category, there are many things to consider. For instance, the age of menarche is important because it's going to increase the amount of fat that young women have a tendency to start carrying.

In addition to the amenorrhea or oligomenorrhea, is there menorrhagia? Often with obesity, you have an increased risk of fibroids, so is there menorrhagia? They may not start to look overweight yet or they may not feel like they are but if they tell you, "Well, yea, my periods are quite heavy and irregular," that may be a risk for you to check and start looking into some things.

Sexual activity is also a consideration. The self esteem, I will have to point out again, is much higher among the obese and overweight adolescents in the minority population than in the white population. These boys and girls have boyfriends and girlfriends. They are not being overlooked. They are walking around wearing rings. They have been placed into society at a much higher functioning level than we would have expected.

Knowing the gestation and parity for females is important because it's going to increase the amount of fat that they may actually have needed to carry.

Ask adolescents if they live in a two-parent home. Are there two parents who can make sure that the meals are taken care of? Is there someone who's there when they come home from school so that they don't automatically go to get chips? Is there someone who can do the shopping?

Think about where young people live—urban inner city versus suburban versus rural location for obvious reasons.

Participation in organized physical activity is another aspect of assessment. I always ask, "What are you doing? How come you're not playing ball?" Often the boys will say, "Oh, yea, I play basketball." "For who?" "Oh, I just play pick up." Well, that doesn't happen all the time, and you are not forced to do that. You don't have a responsibility to do that.

Assess the number of hours spent in sedentary activities.

Ask about friendships. Is your best friend overweight or thin? Often, birds of a feather will hang together.

Self assessment is another critical component. You have to ask them what they think about themselves.

Think about prevention and improving opportunities for physical activity and improving nutrition.

National standards regulating the advertisement and promotion of low nutrition value foods and beverages through schools and mass media have been changing. How many can finish these? “It does a body good. (audience “milk”) And, what’s for dinner? (audience “beef”) Remember that one? And, the other white meat? (audience “pork”) And the incredible, edible (audience “egg”). There were some commercials and some money spent for foods that did not have a name. But very little. And when I was trying to remember them and write them down I had to remember that African Americans and Hispanics have a high prevalence of lactose intolerance. They don’t need a lot of milk. Also, the two highest fat meats are beef and pork. There’s no ad for chicken and none for fish. The incredible, edible egg, it’s gone through its cholesterol battles. Fortunately, there are water commercials. There are no vegetable or fruit commercials. There is a video series called VeggieTales, but it’s really set for small children.

Those ads work. Marketing professionals are very smart. In the fast food industry we can start talking about making the meal combos with juice and fruit or juice and salad or water and veggies to go with that burger. You should be able to have options to combo your meal. It doesn’t have to be fries and soft drink. When I asked to combo a meal with water recently, I was charged an extra dollar.

The other thing is that in the vending machines, you often will find some nice things. But granola bars cost more than Snickers. Peanut butter crackers cost more than chips. Water and juice cost more than soft drinks. And it’s hard to find vending machines in all places. There may be some in cafeterias that will have milk or soy milk, salads, cut veggies and dip, healthy sandwiches, juices, and fruits. McDonald’s used to have carrot sticks, but where are they? They were really good.

So we want to change the national standards and help the mass media to understand that they can spend a little money on that also. I don’t think we are going to stop eating the Big Mac or the Whopper.

Think about cooperating with the health care sector in providing preventive health services. Yes, we need to be paid. We need to be reimbursed for the services that we provide, and that is difficult when they are preventive services. Do we want to wait for them to become treatment services? It’s the same thing with smoking or drug abuse. It’s much easier to prevent than to treat once the problem is there. So we have to help the public sector and the governmental sectors to understand that preventive health care needs to be reimbursed and needs to be supported at many levels.

We also need to improve public awareness about the consequences of adolescent obesity. I think that that is the major thing. Our parents don’t understand that the kid is not just fat. Their kid is getting ready to move into a segment of life where this is going to be dangerous for them.

There is a problem with obesity in this country. The problem is greater among minority adolescents in the U.S. than in whites. We can treat the problem on a case-by-case basis or we can prevent the problem utilizing a public health model. But perception among adolescents is different than among children, some adults, and most health care personnel; so we want to keep that in mind. If adolescent overweight and obesity is not considered a problem by those who are living with it, it will persist and eventually the prevalence will increase. This should place public awareness of the problem and its consequences at the top of the treatment and prevention list of importance.

If adolescent overweight and obesity is not considered a problem by those who are living with it, it will persist, and eventually the prevalence will increase. Public awareness of the problem and its consequences should be at the top of the treatment and prevention list of importance.

Panelist remarks

Russell Henke, MEd

Director, Health Education

Montgomery County Public Schools, Maryland

Mr. Russell Henke has been the Coordinator for Health Education at the Montgomery County, Maryland Public Schools for 12 years. Prior to coming to the Montgomery County schools, Mr. Henke was a health education specialist at the Maryland State Department of Education.

I want to thank you for inviting me to be here today, and also to congratulate Dr. Stang on her comprehensive overview of adolescent obesity.

During the last 30 years, I have been a school health educator. During that time I've taught in the public schools and at the college level. I've administered programs at the Maryland State Department of Education and for the past 12 years I've been the coordinator of Pre-K through 12th grade health education program for the 16th largest school system in the United States.

After 30 years as a school health educator, I can tell you I feel more like an evangelist than an educator. I spent my entire career advocating for quality health education in the schools and attempting to convince people that healthy children make better students.

In the three decades that I've spent at this work, I have never seen such an insidious problem as adolescent obesity and undernutrition. As Dr. Stang pointed out, this is not a problem that has occurred overnight. It has taken decades to become the epidemic that it is today. If we don't do something about it soon, obesity may totally consume the next generation.

I mention that this is an insidious problem. Allow me to elaborate on one of the observations shared by Dr. Stang. She quoted the 1996 study by Battle and Brownell, which concluded that a myriad of environmental factors have been suggested to play a role in the development of adolescent obesity including dietary intake, physical activity levels, sedentary behaviors, influences of media and advertising, and peer and parental modeling.

Let's take a look at each of these five environmental factors from a school health educator's point of view.

First, dietary intake. When was the last time that any of you walked through a school cafeteria during lunch time? Now, I don't necessarily recommend that. But should you be brave enough to venture into the vortex, you will see this problem first hand. Children want what they like, and what they like is McDonald's, Burger King, Pizza Hut, and all the places they go with their parents where they can personally choose

what they want to eat. Students learn what they live and if their diet at home consists of fast food, then they want fast food at school, too.

What's insidious here is that school food services cannot lose money because they are not funded by the school budget. They have to be able to make money to survive. They are not included in the budget. If they don't break even or make a profit, the service will be discontinued. Food service is subsidized by the federal government but it is not funded by local school dollars. If they don't serve the children what they'll buy, they will cease to exist.

Let me move on to physical activity. Again, I will emphasize that we are looking at this from a school perspective and specifically through physical education. Now, you all remember school physical education classes. You can probably close your eyes and vividly recall the smells, sounds, and sights of your school locker room and gymnasium. Hopefully, you have fond memories but I know that some of you probably don't. Physical education is now and really always has been at the low end of the priority list for schools. There is only one state in the nation that has a state law requiring quality daily physical education in every grade and that is Illinois. Most states and local school districts devote minimal time to physical education and it is usually among the first areas to be cut in tight budget times. What is insidious here? The goal is difficult, if not impossible to accomplish, if elementary school children have an average of only 45 to 60 minutes of physical education per week, and if high school students only take physical education during one year of their high school experience. The goal, of course, of today's physical education is to teach lifetime skills for lifetime fitness. If parents can't afford to pay for recreation or club programs or if those programs don't exist, then the opportunity for children to develop lifetime skills or lifetime fitness is highly unlikely.

Let me talk about sedentary behaviors. I remember as a child spending endless hours playing outside. Every season of the year, in all types of weather, my friends and I would play baseball, football, go fishing, and ride our bikes everywhere. We were always on the go. Even my own children spent hours running

around the neighborhood, playing sports, until the advent of video games, cable television, and computers. Once they had access to those tools of the devil, their entire perspective on play changed. Obviously, that is not only true for my own children; it is a reality of our culture. Most kids today would much rather take the challenge of the moto-cross dirt bike rally on the video game than go outside and ride their bike around the neighborhood. What is insidious here? Without realizing it, we have created a generation of children whose definition of play is completely different than previous generations.

For many adults, as long as the child is occupied in whatever they're doing, that's just fine. So we end up with children who learn to enjoy challenge, competition, and play vicariously through the television or computer monitor.

Let's think about the influences of media and advertising. "You deserve a break today." "Take a run to the border." "Have it your way." "We do chicken right." Four successful advertising slogans that have become a part of the American lexicon. Over the years, we have been bombarded with these slogans and images of tasty burgers, mountains of French fries, and crispy chicken over and over again, almost like brainwashing. It's so cute when a child first learns to talk and say, "Mom and Dad." Parents are thrilled when their one-year-old can start to differentiate between which is mom and which is dad and use those proper words. And then when they are driving down the street from the car seat in the back they hear, "McDonald's." Yes, it's almost like brainwashing.

Have you watched the Saturday morning cartoons or after-school cartoon programs? If you have, then you know who the primary sponsors are, and if you haven't, you probably know now.

What is insidious here? Our children are immersed in advertisements for fast food products more than any other form of advertising. Add to that the connection to popular feature films, the toys that are offered free or inexpensively, the play centers, the overall catering to children, and you have a culture that thrives on fast food.

Let me talk about peer and parental modeling. "Can I go over to Lonnie's house and play video games?" "Why do you need to go to Lonnie's? You can play here." "No, he has Ultra Sega with mega graphics and sonic sound. Can I go, please?"

So it goes as the children travel from house to house in the neighborhood to play bigger and better video games on even bigger and better video game players. I guess we should all take solace in the fact that they at least run, walk, or ride their bikes from house to house.

"Honey, I'm too tired to cook tonight. So I'm just going to stop at Wendy's on the home. Do you want a double or a triple with cheese?" Little do most parents realize that the example that they are modeling is one that may last a lifetime. What is insidious here? Peers and parents don't intentionally attempt to corrupt the lifestyle of our children. It is a product of our culture. I truly believe that even the makers of video games and the CEOs and fast food restaurants are only trying to make a profit and have no intention of destroying the health of our nation. And, that is exactly why I refer to this as an insidious problem.

Allow me to provide a parallel example. Nearly 50 years ago, a few people in our society began to investigate the effects of tobacco use on health. Tobacco use was very popular and tobacco companies invested great sums of money in advertising. They sponsored all the popular television and radio programs, most major sporting events; their billboards and ads could be found everywhere, city, suburbs, and in the country. Tobacco use was a standard part of our culture. Parents thought nothing of lighting up in the car on a family outing and were not surprised when their children started the habit in their late teen years.

Tobacco companies even gave away free samples on street corners in large cities just to get people to try their brand. Now, if some of this sounds familiar, it should. Some of the same types of insidious behaviors are now present in our culture and have had a direct effect on our eating and exercise behaviors. We have met the enemy, and he is us.

Now, what can we do about it? Again, I will address this from a local school health educator's point of view.

For the past 10 years, the Centers for Disease Control and Prevention (CDC) have supported schools in the development of coordinated school health programs (School Health Policies and Programs Study, SHPPS). There are eight elements of that program including health education, nutrition services, physical education, health services, counseling, psychological and social services, a healthy school environment, and health promotion for staff and parent and community involvement. In order to create the paradigm shift that is necessary if we are going to change the culture that has produced our current epidemic of adolescent obesity, all of the above elements need to work in harmony. You can have an impact on these programs in your schools. And here's where we get to the physical activity section of my remarks.

Please stand if you believe that schools have a role to play in addressing the problem of adolescent obesity. Raise your left hand if you have visited a school to check on these programs in the past year. Now I want you to raise your right hand if you will contact your local school about these issues in the next year. And keep them up there. And now say, "I solemnly swear..."

I think you get the point. Now you have a snapshot of the problem. When I say we have met the enemy and it is us, I mean that if you haven't done something about it, then you are indeed part of the problem. I've been struggling, like I said, for 30 years trying to address the problems in the schools. I'm tired. It's exhausting. You're fighting all the time for recognition. Schools are concerned about academic standing, about standardized tests, about SAT scores and about the amount of time that it takes to do anything but focus on academics. Then you see people come out with these programs that say you have to spend 18 to 30 lessons dealing with a particular issue if you want to have an impact on students' behavior — folks, we don't have the time to do that. We won't be given the time to do that. If we can't have programs that are more compact, that take less time, then they simply won't be done in the schools. Believe me. I have spent 30 years trying to do this, and we're lucky to get the small amount of time that we get right now.

I don't want to end on a negative note so I want to give you one specific positive example. Montgomery County schools received quite a bit of attention about a year ago regarding our vending machine issue. I'm not going to get into the whole thing about food services; I just want to focus on the vending machine issue. Do you know that in some of our schools vending machines bring in over a six-figure amount of money to the school? In some of our high schools, over six-figures in a year. And with the problems that we have funding education, you're going to say, "You shouldn't do that anymore?"

Now, personally, I view this as a moral issue. We should not be making money on the backs of our students while it's negatively affecting their health. It's a moral issue. That is one way that we were able to get our school system to begin to change what we do regarding vending machines. There are federal regulations, part of the USDA policies regarding the school lunch program, that vending machines in schools have to have foods of a set minimum nutritional value, and the vending machines that do not have foods of a set minimum nutritional value, including soft drink machines, have to be turned off from the start of school until after the last lunch time. Needless to say, when we started to check into this, we found out that many of our schools had the machines on 24/7. Not only that, but they encouraged the students to buy products from those machines because it got more money for the school.

In the last year and a half we have been able to turn that around considerably. It's really rewarding now to walk into a school and see that the only machines that are on during that period of time from the beginning of school to around 1 o'clock, are machines that have fruit drinks and water in them. And you know something? The amount of money that has been lost by our schools is infinitesimal. We have changed the behaviors of the kids simply by what we offer. We rolled out the soda machines, and rolled in the water machines. We told them that years ago but until they were forced to do it, they wouldn't believe it.

Change can happen; it just takes a lot of time. When we're talking about a cultural shift like what happened with tobacco, it's especially challenging. It's going to take all of us working together and making a concerted effort to make those changes.

Don't sit there and just point your finger saying how bad the schools are. If you don't like it, do something about it. You're a tax payer, that's who we respond to. Thank you.

Audience participation and questions

Question For a long time at the Center for Science in the Public Interest, we've been focused on the food environment and how that influences eating habits. I used to come to meetings and hear people talk about nutrition and obesity and I felt like I was the lone person hammering away at the environment as a factor. It seems that there's been a real shift in thinking and understanding how much the environment influences eating habits and physical activity levels. It's nice not to have to start with descriptions of why it takes more than just will power for people to eat well and be active. Certainly will power hasn't changed over the last 25 years, but body weights and eating habits have changed.

There are a couple of policy options that we think are top priorities for trying to turn this thing around, and I think a lot of them have been touched on already so I'll just quickly summarize. One is to require calorie labeling, and perhaps some other limited nutrition information on menus and menu boards at chain restaurants so that, because we are eating about a third of our food outside our home so we should be able to get nutrition information on those foods just like we can get on packaged foods in supermarkets. So, Congress could pass laws, state legislators and county commissions could, so this could be done at the local, state, or the national level. We have background information about why this is important and rational.

Another strategy is to limit advertising of low nutrition foods aimed at kids, and I think that's been touched on a lot. That can be done by working cooperatively with industry or it can be done by passing a law. It would have to be done by Congress. Another

approach is to just fund nutrition and physical activity programs, which are really underfunded, you know, compared to their impact on health.

About three years ago, a number of national, state, and local organizations came together to form a coalition called the National Alliance for Nutrition and Activity. We've been lobbying for increased funding for the Centers for Disease Control and Prevention, the Division of Nutrition and Physical Activity, for monitoring, for public health or intervention type research and to fund state programs. Up until that time, CDC had about a \$2 million annual budget for nutrition and physical activity and over the last few years we've been able to increase that about 13-fold to about \$27 million a year. We are also supporting funding for the Youth Media Campaign VERB, which promotes physical activity to youth. In public health we say "reach people where they are", and where the kids are is watching television. So, reach them through the kinds of media that they're responsive to.

There are two other opportunities coming up in this next year that our coalition is working on. One is improving school foods, because the child nutrition programs are going to be reauthorized, and there are a number of ways to do that dealing with what's sold in vending machines, improving the school meals themselves and strengthening nutrition education. The other is the reauthorization of the surface transportation bill. You might have heard of Ice Tea or Tea 21 (transportation bill, "Ice Tea," or Intermodal Surface Transportation Efficiency Act (ISTEA) and TEA-21, Transportation Equity Act for the 21st Century). There are opportunities to promote physical activity by changing our transportation

policy, ensuring that mass transit is accessible. That means bike paths, walking trails, sidewalks, safe routes to school programs, and others.

If anyone is interested in any of those policy issues, you can visit our Web site, which is www.cspinet.org/nutritionpolicy. There is background information about the importance of nutrition and physical activity to health, model legislation, background reports, fact sheets, materials for changing things at the local, state and national level. There's also information about our coalition for any organizations that might be interested in working together, and I know a number of our members are here including American Dietetic Association, AMA, and others.

Question I want to let Dr. Lawrence and everyone know that there is a President's Council on Physical Fitness and Sports. And I don't know if the Steelers jersey really makes a difference to you or your son but the new council chair is Lynn Swann. So please tell him that there is one and it's up and running and there are a lot of activities going on now, so feel free to tap into that.

On a second issue, I simply want to state, that I'm not a parent, but I do live in Montgomery County. With regards to the schools issue, there is not a will here. There's a will with you, with what you've been trying to do in the schools for 30 years, but I have to say from my single perspective when I see what parents and families have to go through with regards to their children getting up at 6:30 in the morning to be at school and then these kids come home at 2:30. I went to school 9 a.m. to 3 p.m., and I went to school in Pennsylvania, so I don't know if this is a change for Maryland, if that's how all of you who are Maryland natives went to school. But in Montgomery County they won't change the hours because it gets into political issues, teacher issues, and other issues. Having said that, it's a parental issue as well because parents don't want to change their hours. But if we really want to put these programs in schools where they need to be, then a lot of other social systems are going to have to change.

Having said all that, I want to thank you for what you've done for all the years. This is the second time I've heard you speak about school activities in Montgomery County and not only is there your dedication, your commitment, but you really put it in a format that we have to get. So I thank you and I thank Dr. Lawrence as well for what's happening in DC. Again, call Lynn Swann (Chair, President's Council on Physical Fitness and Sports) who is great guy.

You should all know that maybe by the end of the year, the first annual Leading Health Indicators report will be out. That report will hopefully have some data and some additional rankings of the ten leading health indicators.

Question I am a parent with a child in Montgomery County public schools and I really thank you. With regard to PE, I just wanted to raise the issue again that Dr. Stang raised about the emphasis on achievement in PE rather than health, exercise, and fun. And I wanted to relate it to the topic of AMA's last Educational Forum topic which was bullying.

I think its general knowledge that the prime locus for bullying in schools is in PE. I think this is something that we really need to look into. I can speak from personal experience, I have a son who would rather play video games for vicarious thrills because he's clumsy and kids make fun of him. Last week, he cut PE because they were having running races, and he knew he would be last. He's not the only one, so I just wanted to raise that as another issue that ties in.

Question I have a couple of comments that are a little bit more defined so there might be some answers for them. I work in a school-based health center, which has primary care resources right there in the school. And I can't find an ICD-9 code to catch these kids at risk for overweight. You know, I have to have a diagnosis. I can't have "potential for" anymore. Am I missing that? I didn't know if there are providers here who would know because if I can't mark it down on my encounter, I can't count those kids. I can't get back to those kids, unless I find a different way of identifying those kids.

Dr. Lawrence You can use the “worried well” code. I’m sorry I can’t remember the code for worried well, I know it’s a V code. You don’t want to use the V20, but you can use the V20 at the first screening. You always can use your V20 for the screening, and then if they enter into the at-risk category, you can use the worried well or the risk of family disease.

Question But it won’t come out in my statistics on obesity. It could be any family disease.

Dr. Lawrence That’s right but if it will make a difference if you’re trying to do it for statistics versus doing it for reimbursement. If you are trying to do it for statistics, use the Overweight. You know, they have one that’s Overweight and then the other is Obese. And you can use the one for Overweight because that’s what you are assessing and addressing.

Question My question as a pediatric nurse practitioner who sees kids, we live for weights with the little guys. I mean, I pound it into my nursing students that the weight is the most important thing you can do for me because I can’t figure out the drug dosage if you don’t give me the weight. As we’ve been talking about this, I wonder how much we have contributed to the importance of weight.

Question I just want to make a comment. I found this really a fabulous Educational Forum. It was really exceptional and I want to commend everyone for really great presentations.

I have a 14-year-old so I deal with many of these issues. He’s just lost 13 pounds, through a program with Weight Watchers®, which has been, for me, an enlightening experience. We don’t think of working with Weight Watchers® very often for kids. We ought to know that as we meet right here there are probably thousands of Weight Watchers programs going on in churches, community centers, school, etc., that are focused mostly on adults. I think it’s a missed opportunity for parents and for us if we don’t network with that organization which really focuses more on healthy eating than on other things. I think it is an opportunity for a network that we haven’t tapped into in the adolescent health world.

The second issue is that if you review physicians’ records or health centers’ records, you will rarely find a BMI in a kid or an adolescent’s chart. I think from a policy perspective, we might really want to advocate that one of the HEDIS measures (www.ncqa.org/Programs/HEDIS/) should be BMI. People may say to you, “Why bother doing it?” Well, why do we do blood pressures? Why do we do a lot of things in our clinical practice? I mean, we do things because if we don’t know if people have a problem, then we can’t do anything about it. The first step really is informing people where they are if we think that anything around their personal health and habits have anything to do with this.

As Russ Henke pointed out, the first Surgeon General’s Report on tobacco was 40 years ago. It’s taken us 40 years to really get to a system where clinicians, schools, and communities are really advocating for smoke-free environments. So I think we have a lot of work to do to turn this thing around.

Question First, I just want to congratulate all the speakers. This has been outstanding. It’s a real call to action. I don’t think any of us can leave this room without really doing something.

There is a story, I’m sure it’s been told in a variety of ways, but the last time I heard it was Mohammad Akhtar who told us. There was a mountain and at the bottom of the mountain there were all these accidents and people were all getting injured and dying and they had to have emergency services, they had to set up a hospital. Somebody asked, “What’s the cause of this?” Well, there was the mountain road and somebody put in a fence, a barrier. No more problems.

Looking to the root cause of this, we have to do that and I think the call to action in terms of who is doing this and who has control. Will the adult please stand up? These are our kids. We have control over what they’re doing.

When it comes to education, I was head of school health in the District of Columbia for the DC Commission of Public Health. When you talk about education, having to go to corporations for money, I mean selling their souls, literally. Why don’t we have enough money in the education budget in this

nation to adequately fund education without having to devastate all the other aspects that we're trying to preserve? I think we as voters have to be sure that the education agenda is extremely high on the list. I think we need to take on the corporate interest. Everybody should read *Fast Food Nation*. We've been involved in tobacco battles. We don't have to wait 40 years; we have to do it now, before it's all over.

With regard to PE, in the comprehensive school program that came out of CDC, now 10 years ago, we looked at PE as being a very important part of that. West Virginia, which was one of the key states in the beginning of that, developed a program — with videos — where the exercise can be done in the classroom. I mean, that's something that can be done. In terms, of physical education, I'm glad to hear that the President's Council on Physical Fitness and Sports is still there because that is critical, but that needs funding. I know in DC that was phased out because there was no funding. Where are our priorities as a nation? We are the voters, we have the voice, we have to protect the kids. But we can look back to some of the accomplishments in that program for models because that's what it was all about. We could share that.

Adolescent Nutrition and Physical Activity

Educational Forum on Adolescent Health
May 16, 2003

Panelist remarks

Leslie Lytle, PhD, RD

Professor

University of Minnesota, School of Public Health

Dr. Lytle received her bachelors degree at Pennsylvania State University, her masters degree at Purdue University, and PhD at the University of Michigan with post-doctoral work at the University of Minnesota. A registered dietician, Dr. Lytle has been a professor in the Division of Epidemiology at the University of Minnesota for the past thirteen years. Her extensive list of publications emphasize her expertise in adolescent nutrition and school-based research.

I want to address how school food environments might be affecting our epidemic of childhood obesity. First, I will provide some information about the evidence related to an epidemic in childhood obesity. Second, I want to describe school food environments, including what we know about a la carte and vending in schools. Third, I will discuss a research study, an intervention project, which was designed to affect school food environments.

Epidemic in childhood obesity So, we need to ask ourselves if there is really evidence for an obesity epidemic. Actually, there is substantial evidence. As early as 2000, reports printed in *Newsweek* magazine stated that about 6 million children were seriously overweight. That number has escalated since 2000. While *Newsweek* magazine writers were trying to focus on what families can do, our society quickly discovered that this situation concerns more than just what families can do. Certainly families have a role, but we also need to know our institutions and our communities, and how our larger cultural and social conditions are affecting children's risk for being overweight or obese.

Let me tell you how I'm going to use the terms overweight and obese. The Centers for Disease Control and Prevention's (CDC) guidelines related to child obesity are really framed in the concept of overweight or at risk for overweight. The CDC guidelines are based on the body mass index (BMI), so there is no real measure of "fat". When reviewing the proportion of young people who are overweight, the young people represented are at the 95th percentile for their sex and their age group, using the 1974 National Health and Nutrition Examination Survey (NHANES) data as a base line. So, the prevalence of young people who are at the 95th percentile has about tripled since the 1970s. These are children 6 to 11 years of age, and about 15% of the population of children at that age are at the 95th percentile or higher. If we look at older children, the situation is almost a duplicate. Again, older children, both males and females, show a prevalence of serious overweight — 95th percentile overweight — at about 15+ percent of our population.

Obviously, when reviewing trends like this, one has to ask "what is going on with these young people?" For the most part, we do not really believe this represents a huge change in our genetic pool. In fact, we are seeing similar trends in childhood obesity internationally, which is very interesting.

A number of well-documented changes have taken place during the past few decades. For instance, family structure is different from past generations. Aspects of our culture have changed and our institutions reflect these changes. These and other possible cultural trends are all partial contributors to the childhood obesity problem.

School food environments My focus is the role that the school food environment might actually play in this etiology of childhood obesity. When I mention the school food environment, most people immediately think about the lunch line. However, I'm going to expand that quite a bit. When I talk about the school food environment I think about federally subsidized school breakfast and lunch programs. But, I am not planning to discuss either of those programs. I want to address some of the other environmental pieces which are other foods that are offered in the cafeteria but are not part of either of those federally reimbursed programs. These other aspects include a la carte, vending, and other competitive foods that are available in the school cafeteria. I also want to talk a little bit about other foods that are in a larger school environment outside of the cafeteria and which are outside of the school food service control. These may include vending that might be put out by the principal, it might also include selling candy bars. Has anybody ever bought a candy bar from your child or used food as an incentive in classrooms? Also, I think about this larger school food environment as normative influences about what's cool to eat, and young people learn about that from other children. They learn about it from their teachers and from the food service staff related to how they present things.

My remarks will focus on a la carte, vending, and the larger school environment pieces. I will discuss the extent of the use of a la carte and vending and on what we know about the healthfulness of those options in school.

In 2001 the United States Department of Agriculture (USDA) completed some work that gave us a good look at what is happening in school food service. Nationally we see that about nine out of ten schools have an a la carte program available at lunchtime. That could include anything from a table at the end of the lunch line that has five different items to an a la carte line similar to a food court at the mall. So there is huge variety in what we consider a la carte; however, nine out of ten schools have some other source of food available to students in addition to the meal pattern lunch.

Vending machines are available in 76% of high schools, 55% of middle schools, and 15% of elementary schools. I have seen some data to suggest that this is on the rise. School stores or canteens are also widely available in high schools, middle schools, and elementary schools.

The term “competitive foods” refers to foods that are literally competing with the USDA meal pattern lunch and would include any food or beverage which is available during lunchtime that competes with what food service staff are serving on the line. An increasingly common school food service practice is to use branded foods — Taco Bell, Pizza Hut, or similar food products — that young people recognize and about which they receive direct advertising.

Most people are familiar with “pouring contracts” in schools. A school district in Colorado is probably the winner of the pouring contract award because it received \$8 million for a 10-year pouring contract with Coke. This means that the district agreed to offer only Coke products for 10 years. The school district received a nice chunk of change for signing the contract as well as money from the sales in addition to incentive money. Also, they would get a bonus at the end of the month for any extra cartons of Coke sold.

National estimates are that \$750 million a year goes into schools from companies that sell snacks or processed foods in schools. The reason schools and school food service staff are turning to a la carte and vending is because they are so under-funded that they are looking for avenues to supplement income for schools.

Another USDA study showed that competitive foods, on average, brought in about \$400 a week in elementary schools, about \$1,700 for middle schools, and nearly \$2,000 a week for high schools. I do school-based research all the time and I know that when I say I’ve got a \$250 incentive for the year for participation in my studies, schools are thrilled. That little bit of money is really needed, so you can imagine how attractive a weekly \$2,000 income can be for a school. It’s also interesting to note that sales from a la carte are inversely related to participation in the meal pattern lunch, which means that the a la carte is really competitive food. The more dollars students spend on a la carte, the fewer number of students who purchase school meal pattern lunches. Unlike a la carte selections, school meal pattern lunches have some federal regulations about healthfulness.

In schools, there are lots of vending machines in many places. They are all in rows with some beside the cafeteria, on every floor, at entrances to the building, by the gym, all over the place. They provide lots of choices. Also, school cafeterias heavily promote the competitive foods. As a health educator and nutrition professional, I am often told that my responsibility is to teach children how to make the good choices so that when they can see all those options, they can still make good choices. This is really a challenge.

This is similar to serving a Thanksgiving dinner every night of the week and expecting people to skip dessert. It’s almost that sort of realism. Changing the environment has got to be a really important piece of helping young people make better health choices.

Let’s think about our knowledge of what’s available. The a la carte choices are high-fat cookies or cakes, lots of pizzas, burgers, sandwiches, and lots of French fries. Ninety-five percent of vending machines offer soft drinks and candy. In the *Journal of School Health*, Hal Wechsler’s excellent article, based on the School Health Policies and Programs Study (SHPPS), gives a very nice picture of what’s out there in the schools (Wechsler et al., 2001).

When we think about that positive environment, it certainly requires completing intervention studies that look not only at changing the foods that

children eat but also changing the environment. Again, if we believe that this obesity epidemic is more than just individual choice, that means our intervention studies need to not only try to influence how people and kids make food choices, but also we need to influence the environment to which our kids are exposed. As far as I know, there have been four studies that have looked at affecting the school food environment, particularly related to a la carte and vending in an intervention mode to see if we can change the environment to make it a healthier option for children.

I want to describe the program Trying Alternative Cafeteria Options in Schools (TACOS) which is taking place in 20 schools in the Twin Cities, Minneapolis and St. Paul; Simone French is the Principal Investigator. Program participants are trying to lower fat and attempting to increase the availability of lower-fat foods on a la carte and in school, as a whole. They're also working on using student-based promotions to sell these. The results are currently submitted so I cannot share the findings but they will be presented at the summer 2003 Society for Behavioral Physical Activity and Nutrition meeting in Quebec.

Another Simone French study took place in 12 secondary schools in the Twin Cities; researchers were specifically looking at the effect of pricing and point of purchase promotion on low-fat vending snacks. They found that sales of vending in these schools were highly responsive to the pricing of the items. For instance, at certain price breaks there was no decline in schools' ability to generate income from vending. It's a fine line that we are asked to tread when we work with schools related to changing vending and a la carte. Some school administrators don't want researchers messing with profits. So, if researchers can make food products healthier and students continue to purchase them, the researchers are heroes. But if research findings indicate that students will not purchase the products, then investigators have a problem.

French's research did a nice job of documenting sales and found that, in general, total income from vending was not negatively affected by pricing. One of her results, published in the *American Journal of Public*

Health, identified that at baseline about 10 to 11% of the sales from vending were low-fat snacks (French et al., 2001 and 2003). Through a series of manipulations she dropped the price of the low-fat products in vending machines. When she dropped the price by 10%, the sales of low-fat snacks increased by 9%. When she dropped the price of the low-fat snacks by 25%, sales increased nearly 40%. When she slashed prices by 50%, sales of low-fat snacks nearly doubled. This study demonstrates that young people are highly responsive to pricing and the notion that students will only buy the products that are cool is not supported by research. Young people are very responsive to pricing.

Another aspect of this research investigated what happened to the other products in the machine. Low-fat items in the machine were identified by a little yellow checkmark that showed the price. Because all the other items were still there in the machine when children made their low-fat/low cost selections, price was really the determining factor.

Another study addressed trying to affect the larger school environment related to a la carte and school stores. The study took place in 24 middle schools in California. Researchers were looking at food choices in the school in addition to physical activity. The published results showed no change in students' fat intake based on the school environmental changes. However, findings showed some changes in physical activity.

We are still working hard on demonstrating the link between changing the environment to identify its impact on changing young people's behavior. We need to identify the logistics of the research.

Teens Eating for Energy and Nutrition at School (TEENS) project The last study I will discuss is a project that I directed. It was a four-year intervention trial funded by the National Cancer Institute (NCI). We worked in 16 middle schools in the Twin Cities; we wanted to determine if we could get middle school-aged students to increase their intake of fruits, vegetables, and lower-fat foods in an effort to reduce their future risk of cancer. We tried to accomplish this by influencing food choices at school and the larger school environ-

ment. Other intervention components included a specific classroom curriculum for 7th and 8th graders, family take-home packs, and school environmental changes.

When beginning our formative assessment in 1995 for the TEENS project, we began by conducting focus groups and individual interviews with middle school students. We confirmed what the school environment was like for students and how they perceived it. One focus group moderator asked some of the adolescents about places other than the cafeteria where food was available in school. Students reported that they could buy food from a shop, vending machines, breakfast, hot lunch, places in the lunch room, the school store, and really good cookies were available all day, everyday. One student thought that this was bad because “people in gym class recommend healthy eating but then in other places, students are sold a whole bunch of junk.” Young people recognize the inconsistencies between what they hear in health education classes and the food choices offered by the school environment. One adolescent reported that any extra money was spent on junk food. The student recognized that this was a waste of money, especially because he ate more junk food at school than at home.

Baseline data at the 16 schools, eventually randomized into 8 and 8, included identification of close to 1,200 different food items. Because it’s too hard to think about that many choices, we categorized all the food on a la carte into one of two categories: “foods to promote” or “foods to limit”. A la carte programs were available in 13 of our 16 schools. “Foods to promote” included any fruit or vegetable that was on the a la carte line. Other “food to promote” included snacks that were less than 5 grams of fat per serving, 100% fruit juice, low-fat milk, and bottled water. Just about everything else was on the “food to limit” list.

“Foods to promote” were about 12% at baseline. Consequently, 88% of the foods that students saw when they went through the a la carte line were classified into the “foods to limit”. When reviewing the proportion of food sold, 94% of the foods were from the “foods to limit”. We asked food service staff to review the list and they were concerned that the

items sold were on the a la carte list because that is what kids want, and therefore you can see this is what kids want because this is what they’re buying.

The TEENS researchers tried to convince the food service staff that what they offered influenced food choices the students purchased. Our research staff also looked at vending, although we ultimately did not do much with intervention on vending. In reality, we found that a number of vending products were in a sort of never-never land; for instance, diet soft drinks are a “food to promote” only because they are a step above regular soda that includes sugar and caffeine. Chewy, gummy candy is another item that met the fat criteria, but it can hardly be endorsed as healthy. As a result of these types of available foods, we established a third category in vending. Students still encountered vending food that was 76% from “foods to limit” and 84% of beverage vending were “foods to limit”. Our research had a good floor from which to work for our intervention.

We had two means of trying to intervene on the larger school environment. One was the institution of snack committees. This was related to the CDC guidelines that discussed getting school involvement in the policy choices. As you all know, CDC has really been a very strong proponent of policy change at schools. As a reviewer of those guidelines, I wanted to see if we could get people together to develop policy. So we set up school nutrition advisory councils whose task was to think about elements of their school that needed improvement and to choose the elements they wanted to address.

We also worked directly with school food service staff related to the choices that were offered including both fruits and vegetables on the main line, as well as a la carte. Vending was troubling because we could not determine who had responsibility for it. So we decided not to do anything.

Some foods presented us with unique problems and we asked ourselves if we could identify lower-fat versions. For instance, French fries were a huge seller. Potato chips, candy bars, and cheese and nachos seemed to be everywhere. Chocolate chip cookies were another top seller on a la carte lines. Many of the chocolate

chip cookies were really big and were often sold three at a time for a total content of about 36 fat grams. Many students purchased three chocolate chip cookies at a time and, of course, ate all of them.

We tried to convince food service staff to purchase some fresh fruits and vegetables for the a la carte line. Product pricing, promotion, and placement were other topics that we discussed. Competitive pricing was very interesting, and I knew from work with SHPPS that pricing might have something to do with the product sales. Interestingly, the same connection was not made by food service staff. As a research team, we decided to identify a lower-fat chocolate chip cookie. Through extensive local investigation, we found a lower-fat cookie that was fabulous. We found that the sales of those chocolate chip cookies varied from school to school. After conversations with the food service staff, a snack committee member investigated the situation and found that the lower-fat cookies were competing with a donut-like product that was priced lower than the cookie. Once the cookie was priced competitively, cookie sales increased. Pricing was news to school food service staff. They did not realize that pricing the healthier option cheaper would increase sales. That was a good thing to know.

We worked hard to convince food service staff that there were healthier products available for a la carte and that students would buy them if they were on the line. A fat criteria of five grams of fat was established; we found products that fit that criteria and developed a five-page spread sheet of products that met the criteria. Area vendors sold those products to our schools. We started by offering taste tests to the students; food service staff also participated in taste tests because if they had not tasted the product they considered it poor quality and refused to order it for the a la carte line. Taste tests evolved into offering risk-free deals through which we would either bring a case of lower-fat chips into the school with the guarantee that poor-selling items would be reimbursed. Educating school food service staff was our greatest challenge.

At baseline, 79% of the foods on the line were in the “foods to limit” category. After our taste testing and lower-fat options introductions, at follow-up 58% of

the foods on the line were in the “foods to limit” category and the “foods to promote” jumped from 21% to 42%. So we had a doubling of “foods to promote”.

In our control schools, we experienced similar trends. These schools experienced a slight decrease in the “foods to limit” and a three-fold increase in the “foods to promote”. We had statistically significant change in trend in foods offered. When there are healthier foods offered on the line, students purchased them. So, our sales of healthier foods went from 10% of sales to nearly 40% of sales, which was really good news.

This finding demonstrates that students will buy healthier products if they are represented in a better mix on a line. Unfortunately, we did not see the same sort of trend in all control schools. One of my speculations is that this happened because we randomized schools, not school districts. Working with school districts would have required recruiting 16 school districts to participate in the study. We had contamination potential because we have several school districts with both control and intervention schools. Working to achieve changes within school food service means that researchers were working with a school food service director who is at a district level. So even though we requested that changes not be implemented in the control schools until completion of the study, it’s much easier to purchase products for all of your schools in the district at the same time.

Another variable in the equation is Minnesota’s School Food Association which is very strong and very active. School food service staff members statewide meet and discuss trends, so there is no way to prevent them from discussing students’ preference for baked potato chips. With respect to research design, we were disappointed; but, if the students are eating healthier products, that is really what it’s all about.

Our interventions had a good effect on the a la carte offerings and demonstrated a trend toward a positive effect on sales, but our data on students’ overall intake showed that we had no intervention effects. During our 24 recall conversations, we asked if the TEENS

intervention had an effect on students' food choices. Results demonstrate that we had positive effects at seventh grade but we lost them at eighth grade.

As another component of our TEENS data, we looked at the school-level effect of the existence of an a la carte line on the number and use of snack and beverage vending machines and the effect that that would have on a child's daily intake. This is a mixed-model analysis. Our dependent variable is the 24 recalls assessing students' intake for a total day; our independent variables are 1) school level a la carte line, 2) the number of vending machines available, and 3) the number of snacks and beverages. We were looking to see if those environmental influences affected students overall dietary intake. We found that servings of fruits, energy intake of total fat, and saturated fat were affected by environmental influences.

Over the course of a day, students who did not have access to an a la carte line in their school ended up eating more than half a serving more of fruits. These same students met the goal of no more than 30% of calories from fat, actually it was at about 28%, and they nearly met the goal of keeping saturated fat at 10%. These findings tell us something important. They tell us something about kids' compensation for what they eat over the course of the day and how really important what's available in the school is to a daily intake.

I want to conclude with a few take-home points.

The first one is obvious; the childhood obesity epidemic is incredibly important from both the public health standpoint and a national standpoint. Economically, we're going to be feeling this very powerfully in about 20 years. Hopefully, you'll also come away remembering that environmental factors have a great influence on kids' eating. I didn't talk about children's activity patterns, but I know our next speaker will address it.

Secondly, food choices in the cafeteria and the larger food environment influence what students choose. TEENS showed that if more healthy foods are available, they will be chosen. I have some data which suggest that when we talk to parents, school personnel, and teachers about their opinion about the healthful-

ness of food in schools, there's strong support for eliminating things like soft drinks and candy, and changing what's offered in the schools. There's a grass roots group out there that we need to mobilize to get them talking to their school administrators.

Panelist remarks

George Graham, PhD

President, National Association for Sport and Physical Education (NASPE)

Professor, The Pennsylvania State University

George Graham, Ph.D. is a professor in the Department of Kinesiology at The Pennsylvania State University. He serves as the coordinator of the K-12 Health and Physical Education program and also the Director of the Pedagogy of Physical Activity Laboratory. He moved to Penn State after 17 years on the faculty at Virginia Tech. He began his career teaching and coaching in the public schools of California and Oregon and also served on the faculties of the University of Georgia and the University of South Carolina. He received his doctoral degree from the University of Oregon.

We are going to move now from the school cafeteria or the lunchroom to the gymnasium or the playground. I am pleased to discuss school physical education and what I like to think of as the revolution that's taking place. When people ask me what I do for a living, I answer by telling them that I'm a physical education teacher. Immediately, my questioners get visions of physical education and remember some of their childhood experiences. I'm delighted to tell you that there is a revolution going on and it's changing what used to happen in school gyms and physical education classrooms. I want to talk about some of the changes being made as well as some of the things we're finding out.

In some cases, this image probably says it all. Picture a 24-hour fitness center that features people taking the escalators up to the fitness center. In some ways that, in a nutshell, captures where we are as a society. At this fitness center, I assume that people leave the place by taking the escalator back down after they work out.

This represents an interesting kind of physical activity. Some of you have children, you know children, and you've certainly been a child. The problem is really not physical activity with children. Typically, children are very physically active overall, but somewhere in the late elementary grades or middle school, we see this torrent of physical activity becoming a trickle. Consequently, our challenge is addressing how we keep physical activity alive in youngsters as they age. There's really kind of an hourglass, I think. If you think about young children, particularly in elementary school or even preschool, there are all kinds of opportunities for young people. Parents take their children to all sorts of activities; children who want to be on a team as a six-year-old or an eight-year-old in most communities, just join a team. All you have to do is sign up. If you want to swim, you go swim. There's a plethora of programs.

Then, youngsters go to middle school and two things happen. One is that those opportunities decline in communities. They're just not there when children reach ages twelve or thirteen years. Also, it's really not cool. It's acceptable when children are six, seven, or eight years of age to have mom or dad drive them

around; but, by ages twelve or thirteen they don't want to do that. So, a real decline in physical activity starts to take place upon entry into middle school lasting through age eighteen, according to our research. Also, this huge decline in physical activity, especially in girls, that correlates exactly with entry into middle school, affects children who previously participated on sports teams. By middle school, teams only have 12 or 15 players and our evidence on intramural teams is that they are not terribly popular in most schools.

After high school, when team sports do not predominate, a multitude of opportunities become available from simply walking or jogging to riding a bike. Unfortunately, young people do not consider these activities cool to do. Joining a fitness club, playing on some kind of a recreational team, etc. has little appeal. Again, we really have an hour glass impact; what we are trying to do in physical education is influence that hourglass, as well as opportunities for our young people.

In this cartoon, Jeffy is going home in the school bus. It's summer time and he is thinking about playing ball, swimming, climbing trees, and flying kites. He leaves the bus and walks into the house which is where he spends summer—in front of the television. Unfortunately, this scenario captures a lot of where our young people are today.

With respect to the research, we know that we have a childhood obesity epidemic. We know that children are less physically active than in the past and we know that screen time is increasing. At this point, I don't think that's news. I think everyone is aware of the situation. The interesting question is: what do we do about it?

I want to share some additional information related to sloth, gluttony, and laziness because we can attribute 300,000 deaths each year to these causes which is second only to tobacco. In fact, I think this is about to change if it hasn't yet; lack of physical activity could be number one. Another interesting fact is that adult home fitness equipment is an \$8 billion-a-year industry. So, we must think that if we just buy the exercise equipment somehow we'll lose weight and

we'll get in shape. But, in fact only 10% of adults are active at the recommended levels. Let's see, this is May, this is a good time of year to get used fitness equipment because people bought it in January with a New Year's resolution and they haven't used it.

I want to discuss what I call positive K-12 physical education programs and I want to propose limiting screen time at home. Most of us are aware of the increase in time spent watching television and time spent playing with computers. Dr. Lytle and I are in the same ballpark with our research; however, it's one thing to do research but the bottom line is we want our young people to change.

Two available items that have interesting potential include *television allowance* and *token television*. The television allowance concept was originated by Len Epstein's work at the University of Buffalo. Television allowance is a device that parents can purchase which goes on a television set. Parents can program the number of hours of television that youngsters are allowed to watch per week. Children must enter a code when they turn on the television set. When they enter their code, they find out how much of their time has been used up for the week. If their weekly allotment is used up, they can no longer turn on the television. This system has the potential to short circuit discussions about differences in perceptions about how much television viewing has really taken place.

A group of behavioral psychologists devised token television. It is an interesting system through which children earn tokens that they can use to purchase television viewing time. Each token represents 30 minutes of television time. My own preference is for children to earn the tokens by physical activity but there are numerous ways to earn them.

So both of these methods are available to parents and children. They both offer options because many parents would like to limit their children's television viewing screen time. Unfortunately, the hassle related to negotiating with young people is too daunting for many of us.

Parents are very important role models in young people's lives. So, parents becoming more physically active sets an excellent example of lifelong fitness. In fact, it doesn't necessarily matter what the activity is, but that children see parents engaging in it.

Another important consideration is realistic at-home physical activities for young people. At one point in my career I thought that children could do things like sit-ups and push-ups during commercials while they were watching television. Now, that I think back on that I have to ask myself if that was very realistic. A current arcade video game is called "Dance Dance Revolution" which essentially promotes physical activity. The game has a screen with music and the challenge is that viewers actually move their feet on a dance pad to the music. It is incredibly popular in some communities and it is one heck of a workout. Groups of adolescents go to the arcade areas in malls and play this game day after day. The good news is that it is also available on a home version of Playstation. A colleague was concerned about her eight-year-old daughter, so she purchased the game for her. The first night her daughter spent an hour on it and ended her evening by asking to go to bed. After her daughter figured out that the game was not entertainment but exercise, she wanted her mom to do it with her.

The important thing about this experience and many other anecdotes that I could share is that it represents the kind of thing we need to consider because it's popular and not necessarily just with athletic children. I understand that some teenage girls like it as well and so, to me, that's the kind of intervention we need at home for kids instead of asking them to do some sit-ups, push-ups, or jog in place during television commercials. Pogo sticks are another option. I think that pogo sticks are fun; children can improve; it's good exercise and it's the kind of thing that a youngster might do at home. That's the kind of at-home intervention we need to look at as opposed to just asking children to get out and walk and jog. Children have heard that and they know it. Unfortunately, for all the reasons we know, it just doesn't happen.

I want to focus on school physical education. There are approximately 150,000 to 200,000 physical education teachers in the United States. I am the current President

of the National Association for Sport & Physical Education (NASPE, www.aahperd.org/naspe/template.cfm). We are the national group dedicated to revolutionizing physical education as well as youth sport. We have about 20,000 members and have developed national standards for physical education. The standards were released about 6-7 years ago. Now, many states have standards and they reflect good quality and positive physical education.

We have also developed a series of what we call developmentally appropriate documents recognizing the fact that not all children are the same. Some are more fit, some are less fit, some are athletic, and some are not athletic. The documents also recognize appropriate practices so that physical education classes become safe, warm, humane, productive learning environments, as opposed to some of the experiences that some of us had in the past or heard about from others.

NASPE has also developed physical activity guidelines for youth which were recently revised. They recommend that youngsters should be physically active 60 minutes or more a day. That's a little bit of a change from 30 minutes each day. A second recommendation is that youngsters not be physically inactive for more than two hours at a time. Many schools, with the emphasis on reading and math, think that the solution is just making young people sit for four or five hours. So the recommendation is that every two hours children should be active for fifteen minutes or so.

A third aspect of the recommendations that is particularly important recognizes that children are "spurters." They are active, then they rest, they are active, then they rest, and that's the nature of children. Children are not plodders; they don't do things for a long time. Asking children to be physically active for 60 minutes non-stop is probably unrealistic. Their pattern is spurt, rest, spurt, rest.

Adults who have a chance to spend time with a child three or four years of age would be unable to do every single thing they do when they're playing, because it would be exhausting. Up, down, here, there, and everywhere. Young children get a tremendous amount of physical activity. But their pattern is to spurt, rest, recover.

The contemporary purpose of physical education

So what is physical education today? It's guiding youngsters. As teachers, we are guides. We are guiding youngsters in the process of becoming physically active and healthy for a lifetime. We are not preparing state champions; we're not trying to have kids run the mile in under six minutes. Ultimately, the measure of a physical education program is if kids on their own choose to be physically active. And I suspect it's the same for nutrition. Given a choice, what kind of choices do children make?

That is the purpose of physical education today. The revolution is growing, but let me say that the revolution is not as widespread as we'd like it to be. All physical education is not positive physical education. I know many of you know that, but I want to say it publicly, although some of my colleagues don't like it when I say that. They would prefer that I say that we need physical education, but in fact some physical education experiences are probably doing youngsters more harm than good, and I want to address those experiences. Physical education per se does not mean that it is good quality physical education. We really need other professionals to help and support it.

I want to describe some of the highlights of the positive quality of the new physical education. Although I have been talking about the new physical education for a while, I want you to understand that it had been around for a long time, but it may be new to the media. However, in our field, we've been at it a long time.

I also want to emphasize that physical education and physical activity are not the same. Physical education is the instructional component in schools taught by licensed certified teachers. That's what happens as part of the whole curriculum. Physical activity, in our definition, is what youngsters or adults do on their own time. We make that distinction because we worry that sometimes people are concerned that what their children need is physical activity. They do need to be physically active. However, they also need physical education and they need the instructional component for several reasons.

Proving the hypothesis that positive physical education leads to physically active children and adults requires a million dollars to prove. However, I think that it is clear to many of us that this hypothesis is true. The other hypothesis is related to a belief that if children have physical education, they will do better in the classroom. Although we have people who believe that, quite honestly we don't have the data to really support it — at least in terms of cause and effect.

We have to ask ourselves what motivates young people to engage in physical activity. Maureen Weiss has done research on the topic of opportunities to develop and demonstrate physical competence (Weiss, 2000).

Because children like to learn things, they're really learning in physical education. Young people should be learning things and there's any number of things they can learn. However, this learning should not be limited to an experience they have but they should be learning new things. It's obviously a way to gain social acceptance and peer support. Physical education is so important because we cannot hide our bodies. People are aware of what we do in physical education class. Young people can start telling stories about the softball game, the basketball game, or when the ball came to them and how they missed it or messed up and how devastating the experience was for them. This is much more public than messing up on a math test or a reading test because hardly anyone knows about it; it's a lot more private.

Our business of physical education is so powerful. There are so many potent memories. Physical education experiences can be a way to gain social acceptance and peer support or they can be devastating and humiliating. But we're trying to make it positive and fun. These experiences need to be fun and they need to be enjoyable.

Think about the Surgeon General's call to action which emphasizes daily quality physical education from pre-K to 12th grade. This was not just being physically fit or attaining motor skills but acquiring the important knowledge base related to developing cardiovascular fitness, how to stretch, and other related aspects of information. We still have people stretching cold

muscles for example and we now know that people should have total body warm-up before they stretch. With respect to skills, we know the importance of basic motor skills which are fundamental motor skills. For instance, people who learn to ride a bike as a youngster but haven't ridden a bike in 10 years, their body remembers how to ride. People can still ride a bike or still swim, and that's why it's so important at young ages to have children develop these motor skills with respect to positive attitudes and the behaviors and resulting confidence. Then, there is the component of wanting to try something new instead of feeling as if they cannot do it or they are terrible at performing a specific physical task. Confidence is an important aspect of physical activity, and obviously all of those play into becoming physically active for a lifetime.

I want to share some of Dr. Steve Blair's work with you from his research at the Cooper Institute (Blair, 2002). He believes that people can be fit and fat. That is, overweight people can in fact gain many of the benefits of being physically active. Although I am not going to enumerate the benefits of physical activity, I think it is interesting that we have this stereotype that physically active people look a certain way and that's the only way you can gain those benefits. To many youngsters, that's simply devastating because they are not there, they are not going to be there. But Blair is saying that physical activity is important, there are a lot of benefits, even though you may be overweight. So we're trying to build that into our programs, as well.

The US Department of Health and Human Services has developed a school health index. Essentially this is a way schools can grade their programs on the eight different coordinated school health components. One of the components is a physical education program; another is nutrition and so forth. These are some of the recommendations. Teacher student ratio should be comparable to other classrooms. Unfortunately, in physical education we have been saddled with taking 60 students. Of course, we can accommodate up to 100 students but this situation does not promote high quality, positive physical education. So, we recommend that the class size be comparable to other academic classrooms.

Students are active at least 50% of class time and we do have a good bit of evidence that in fact we can work with teachers to get class activity up to greater than 50%; unfortunately, in too many classes the activity time is 10 or 15%. We like to say physical education is a moving experience and that means not standing around and not waiting. Even in a game like soccer, you can have students playing the game who are not very active. This is what we refer to as “competent bystanding”. Some kids are very good at looking busy, but when we look closely, they really aren’t active. That is some of the data that we look at in terms of activity for all students.

Obviously, physical education is enjoyable. If we are going to test fitness, then students must be fitness tested. We cannot just walk into a class and announce that everyone has to run a mile. Recommendations for elementary school children include 150 minutes a week with a focus on the fundamental motor skills, and secondary school students should get at least 225 minutes a week. Physical education should be graded the same as other academic classroom subjects; however, again we are finding that somehow if you grade differently than you do in the classroom then the students get the clear message that the content is not valuable and important. So, the school health index recommendation is that physical education is graded the same as other classroom subjects. Physical education focuses on the development of competency and proficiency in movement forms. Movement forms include more than just sports. So, something like inline skating and exercise like Pilates or yoga merit important consideration.

Another recommendation includes prohibiting substitutions for physical education. Let’s consider a specific state. Illinois is frequently cited as the only state in the nation with K-12 required physical education. Illinois is also plagued by substitutions for physical education. So even though physical activity is required, all kinds of things can substitute for it that may not be designed to help people develop individualized physical activity fitness plans that relate to them and their needs.

Many of you are probably familiar with the new pedometers. The slogan that accompanies them is “10,000 steps”. Although that’s ideal, I worry about the young people who are getting 2,000 or 3,000 steps. When they compare their progress to the 10,000 step goal, they think that they cannot achieve that goal and they want to forget about it. So ideally, programs like these are individualized, not one-size-fits-all. If young people are getting 3,000 steps today, that’s a great start. Tomorrow or next week they can try and get 3,500 and build from that. Again, this is a developmentally appropriate strategy that recognizes that everyone is different; everybody does not need to be able to run a six-minute mile.

Some interesting research has asked physically active adults to reflect back and remember what they did when they were children (Malina, 2001). There’s a positive correlation between being physically active as pre-teen, teenage, and adult. This may seem obvious, but we now have some evidence. Self-reported participation during the teenager years positively correlated to adult exercise. This is interesting for us as physical education professionals because there was a negative correlation between being forced or encouraged to exercise during pre-teen and teen-age years and adult exercise. So that notion of forcing children, at least according to some research, suggests there may be a negative correlation.

There’s a paradigm shift, and this is related to all the physical activity. Some of my exercise physiology colleagues and many of us in the gymnasiums and the playgrounds were doing this before we came to the realization that personalized is preferable to one-size-fits-all. We moved from prescribed to preferred exertion. We know from some of the work with heart rate monitors that youngsters who may not seem to be trying very hard are, in fact, working hard based on their heart rate even if their times may be slow. So it’s preferred as compared to prescribed.

Running laps is another example of what works for some people but not for everyone. So, for children who finding running laps mindless, they can be physically active in other ways. They can play tag, dribble a ball,

play a little mini-game, jump rope, dance to music and so forth. These are alternative activities that have more meaning than simply performing jumping jacks.

I want to discuss some of the negative aspects of physical education. Situations that constantly embarrass and humiliate are negative physical education experiences. Examples include games in which people are eliminated. The classic one, you've heard about this recently, is dodge ball. In this game when people are hit by the ball, they are out. When I speak with children who are not very proficient at dodge ball, they tell me that their goal is to get hit by the ball. For them it is enough to be out of the game, but on a really good day their best friends get hit right after them. Then, they can sit down and talk with their friends because the future physical education teachers stay for the whole class and they play dodge ball until it ends. Needless to say, this is not a productive strategy. What we're doing with elimination games is eliminating the students who need it the most.

Another negative aspect of physical education is captains picking teams. I'd like to say this practice is about to be eliminated, but I'm afraid it's not totally over. Again, some of you may have experienced this situation. When captains select the team members, children who are not selected assume that they are not selected because the captain does not like them. They do not equate the situation with their not being very skillful at a particular sport. And this is a very painful situation.

Having only one ball per class is another aspect of physical education. Academic classrooms do not have only one book per class. We're trying to eliminate this situation. Every youngster should have access to a ball, often. Our goal is to have many games, not one ball for 30 students who are playing soccer.

Team sports present another problem. Asking about physical education activities in February is a redundant question. It's February, it's basketball. If it's April, it's softball. We are trying to move away from this limited thinking.

We know better than limiting our activities to the calisthenics and laps from the 1950s. There are more effective ways to motivate students to help them enjoy

physical activity. Some teachers still provide no motor skill feedback which is a valuable part of what a coach or a physical education teacher can do to help students understand what they're doing, or not doing, and how they can improve. This is one of the criteria of a good teacher in any subject matter — providing young people with input about their progress. Then there is the once-a-year fitness test with no preparation. We need to help students prepare for the fitness test and help eliminate the stereotypical mean physical education teacher who seems to dislike young people who are not athletic.

We need a better understanding of why some children become physically active. We don't have the research, the data, to say this definitely happens. However, it appears that physically competent children become physically active adults or they find some physical activity that they truly enjoy. Physical education professionals need to introduce students to some movement form that they enjoy more than watching television or more than playing computer games so that they can become physically active adults. Unfortunately, too many young people do not find anything that they enjoy. It's almost painful because they find exercise so unpleasant. Our challenge is to help them find activities they enjoy.

Everyone needs to understand the protocols for sport and physical activity. Someone who wants to play golf, tennis or square dance needs to understand what the activity requires so they won't be embarrassed and humiliated. People need to know the kind of things to do and the kinds of things not to do. Children need to feel comfortable in a variety of settings, especially related to physical confidence.

Another important component is understanding and accepting peoples' tendencies. For instance, announcing a work-out session has different meanings to different people. Some people will want to time it while other people won't care. Some people will need to know how far while others will not care about distance. A number of people will want to play ball and keep score, but other people may be opposed to keeping score. A few people may prefer to work out as a group and some may insist on working out alone. Many people work out to music while some are opposed to

music. Some people seek out high-risk physical challenges while others avoid them. The point is to help young people identify who are they, what they like, and what they don't like. The message is that they are all okay. This is an opportunity for positive youth development.

Physical education professionals really help young people develop the skills and the competencies to enable them to do all these sports including running, racket sports, baseball and basketball, dancing, gymnastics, and others. However, the reality is that there are people who have never played golf and when they try to play golf they are terrible. For others, they play well the first time so they can hardly wait to play again. The point is that we must expose children to a variety of physical activities because we never know what they are going to enjoy. Unfortunately, we don't have enough time in physical education to help all of our young people develop the skills to be capable in all sports. However, we can introduce them to various sports. Also, we can talk about the skills even though we do not have time to develop competencies. Exposure to a variety of activities is the key to help children select sports that will lead to their becoming physically active adults.

California provides us with an interesting example. The state of California requires a fitness test which is called a Fitnessgram. It was correlated with reading and math scores from the SAT. The fifth grade data that includes more than 350,000 students used a simple correlation to show that the youngsters who only passed one of the items on the physical fitness test had the lowest reading and math scores. Students who passed all six physical fitness test items also had the highest reading and math scores. Interestingly, data on fifth, seventh, and ninth grade students are very similar (California Department of Education fitness study, www.cde.ca.gov/news/releases2002/rel37.asp).

I want to tell you a little about an education program that is federally funded for schools, not for universities, to improve their physical education programs. The funding is available for teacher training so participants can learn about the new physical education, implement standards, and utilize technology. Funding has increased for the Physical Education for Progress (PEP)

grants with requests for \$100 million next year. The funds go directly into schools to improve the quality of their physical education programs.

We need more evidence-based research in terms of what happens in physical education programs particularly related to youngsters and physical activity. We know that we can improve the quality of physical education because a number of studies have demonstrated what we can do in schools. However, the big question is what happens outside of school in terms of physical activity. We also need to address the negative aspects of physical education. Physical education teachers who still let captains pick teams, rely on elimination games, and only support team sports are professionally irresponsible. We can offer better physical education today and school administrators need to know about it.

I encourage everyone to join the revolution supporting programs that guide youngsters in the process of becoming physically active for a lifetime. At Pennsylvania State University we require all of our students to know about this revolution; its part of our mission related to the goals of physical education. This is an important mission because physical activity is so valuable for us in so many ways.

Panelist remarks

Victor Medrano, BS
Youth Media Campaign
Partnership Team
Centers for Disease Control and Prevention

Victor Medrano is a Health Education Specialist with the Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion. Currently he is responsible for providing leadership to the Partnership Team of the Youth Media Campaign (YMC), a Congressionally-funded initiative focused on young people. The mission of the CDC/YMC is to increase and maintain physical activity among tweens (ages 9–13 years). His efforts are focused on developing and engaging partners at all levels, including the national, state, and local level and having them engage with the Campaign's efforts and strategies.

On behalf of the CDC and the youth media campaign, *VERB. It's what you do*, it's a wonderful opportunity to be here with you today.

As part of the Centers for Disease Control and Prevention's (CDC) youth media campaign, we have developed *VERB. It's what you do*. This is a campaign that deviates from what the US government, the federal government, typically does and that's exciting for me.

Through the program, we have created five different brochures. Four of them were developed in conjunction with the CDC's Division of Adolescent and School Health (DASH). Of these five brochures, four were designed for teachers, including one for principals, and one for parents. The parent brochures are available in English and Spanish and feature active families with a special piece about decreasing television viewing and screen time.

VERB. It's what you do, formerly called the Youth Media Campaign, was designed around four major components. Congress was very concerned that we get out messages related to the problems and challenges that we have today regarding obesity, overweight, the lack of good nutrition, mental health, tobacco, alcohol, and substance abuse. When the funds were appropriated to CDC and we started to formulate a strategy, we knew very well that if we took the money that they gave us and channeled it into nutrition for example, or into Type II diabetes, then we would be missing the targets with everything else. We knew that CDC had other sister agencies already addressing some of these issues. We have programs at CDC that work on obesity issues, tobacco control, and alcohol and substance abuse. So we set out to design a campaign that was an overarching, umbrella campaign that others could tie into.

There were four major components that were extremely important to us. The first was related to spending the money on media which is what the campaign was designed to do. Second, we needed to develop partnerships with people at a variety of different levels. We needed to work with national partners across the board, both federal and non-profit. We also needed to develop relationships at the state and local level

that CDC already has in place to address this campaign. We also decided to enter into a world which is not very familiar to CDC and that is to work with corporate America. We asked corporations to work with us on getting our children to become more physically active.

Third, we looked at community events. We wanted to do things together that would bring light to the problems that exist out there. Fourth is the evaluation and the research that went into this campaign. In fact, that was the component that was in place before any of the other three because we needed that piece to guide us and help us move forward in an appropriate way to be as effective as possible.

We looked at our target audience which is pre-teen children ages nine to thirteen; we refer to them as tweens. That's the age at which young people begin to strive for independence. They want to be out on their own. Although they don't want to have the strings tied to them anymore, these young people still need their parents. They rely on youth leaders, teachers, and physical education professionals for guidance and direction. This is a very opportune time to reach this particular age group. So we want to focus in on schools because we know that we can reach them there. We want to focus in on the communities and working with partnerships, and we know that we need to reach them at home because this is an area where they are very active.

We learned that if we came out with messages from the US government, from the Chronic Disease Prevention and Health Promotion Center at CDC, to tell young people that they needed to be active in their lives, they would laugh at us and the campaign would be over. What research showed us is that we needed to develop a brand that made it fun and cool for kids in this age group to become active and to have fun at it.

We needed something to stimulate interest and to make it fun for children to want to participate. So, we selected two concepts that we took out into the market and tested. We found that we needed to look at the branding process and some specific components of it. We wanted something that was recognizable and that children could grab onto

immediately. We needed a platform that reinforced what we wanted young people to be able to do. Also, we needed a brand with a personal connection with the tweens we wanted to reach.

Nike is a good example of what we wanted to achieve with the campaign. They have a well-branded campaign — the swoosh mark is instantly recognizable. But unlike well-known consumer brands, our young children could not go out and buy VERB. VERB did not offer a product that tweens could go out and buy at the store. However, we looked at the same concept and looked at things that would resonate along the same lines as if we were selling a product. And, we wanted to make our campaign really cool.

Evaluation is the most important piece to the campaign. The research was addressed in three phases. The formative research led us into the campaign. The exploratory research helped us address where physical activity had to be. Our goal was to get young people more physically active in their lives. We wanted to do it in a cool way and make it fun. Then, we took it to the next level and developed the brand itself.

Our proposed brand tested extremely well with our target of young people. They liked it, they enjoyed it, and they thought it was cool. Next, we tested it with parents because we wanted to make sure that they felt the campaign was a safe place and a safe environment for their children to go for a variety of different reasons. We planned to have a Web site and we wanted to have parents feel comfortable about sending their tweens to a Web site that they knew was good and healthy. Although the campaign oversees the Web site, we are working with AOL; knowing that parents considered it safe was extremely important to us.

We introduced the brand in three phases because it wasn't something that they could go buy at the store. They could not go out and buy VERB; it doesn't exist anywhere except within their mind and their hearts. We began to put messages out there about VERB, and interestingly enough, young people picked up on it, recognized it, and it made an impact with them. Adults kept telling us that they just didn't get it.

We understood their response because we knew that it wasn't designed for them. Our answer to them was that it just wasn't meant for them; they weren't supposed to get it. VERB is for tweens and it has to resonate with them.

Our secondary audience is adult influencers, particularly parents. We feel that it is extremely important to bring in family involvement. It's not so much about getting parents to tell their children to go outside and be active. It's about telling our children to get their bikes and that their parents might join them. That's what's important to us. However, in order to keep the brand pure so that it's for young people by young people, our messaging is distinctly different for adults and for our tweens. We are approaching adults from one angle, trying to reach the tweens from a different one, and that makes this campaign unique.

This is a campaign; it is not a program to take out to people. It's not necessarily an intervention program. Your networks out there already have programs, wonderful programs. This is not intended to supplement or to replace any of those programs already available. What it's intended to do is to blend in with what is already happening out there. And that's extremely important when I talk to groups.

The second stage of the campaign was a soft launch. We did that starting about the middle of summer last year (2002) because we were trying to stress the brand identity. In October 2002 we entered into our full launch phase where we actually get the messages about the campaign out there. So, we spent a year trying to get the brand name recognized, and we have succeeded in that.

I would be shocked and hurt if you haven't seen our ads. That would mean that you are not watching Nickelodeon, WB, MTV, or the Cartoon Network. We are working with these networks because that's what tweens have on all the time and we had to go to where our tweens are today. Once we reach them, we need to move them away from there. Although television screen time is part of the problem, we are there because that's where we can reach tweens. They have to hear our message where they spend time.

We have to reach them where they are and convince them that they have to go elsewhere for their health. That's a key for us.

All our ads are paid ads. They're not public service announcements (PSAs) that appear at two o'clock in the morning because nobody's going to see those. It was important for us in order to be able to get our message across in prime-time when young people are watching television if we were going to reach them and move them away from there. So they are paid ads, they're not PSAs.

Along with the ads that are aired on television, we also have print ads. I am going to give you a Web site address where you can get additional information and see the ads themselves. (www.cdc.gov/verb) I want you to know that our ads reach beyond television. We have print as well as radio; we're using a variety of different media to help support the campaign.

One of the things that we talked about very early on in the campaign was that this is a campaign to fuel young people's dreams. Think about when you were growing up, about a dream that you had that you wanted to fulfill. Maybe you weren't the best at something, but you truly wanted to try that. We want young people to go back to that. We want them to feel that again. To have the experience of feeling that dream and trying to fulfill that dream.

We have five agencies working on the campaign. One agency does our general market overall, but we also knew that within our racial and ethnic communities that there were specifics that we needed to address. For example, in the Hispanic/Latino community, language was always the issue. We knew that we could reach parents as well as tweens with general market, but even general market doesn't reach everyone and we needed to find ways to do that. There are also cultural values and traditions that we needed to take into consideration in reaching the Hispanic/Latino community just as there are with the African-American, Asian-Pacific Islander, and American Indian communities. So, we have agencies working on all of them. However, one thing that we made very

clear is that this is *one campaign*. Our messaging must be the same all the way across the board in order for our messages to mean the same thing to all people.

We have developed posters for Asian American and American Indian tweens. In the American Indian poster we have included reference to *VERB. It's what you do*, native style. Some of the pictures are traditional, general markets, physical type activities but some are culturally related. Everything that we do revolves around testing, so we tested what worked well with the American Indian youth. They told us what to include to get their attention. Based on their input, we went back and made changes to our original print components.

We used the same research techniques with parent test audiences. We developed parent print materials for African-American, Hispanic, American Indian, and Asian-American audiences. For instance, we did about four different ones with the American Indian print ads because we had to address the needs and interests in different regions of the country. One of the things that they told us as we did our research was to incorporate sensitivity to differences in our print ads.

We are trying to use interactive and alternative media to reach tweens. People who are not familiar with these approaches may consider them similar to guerrilla tactics. For instance, an entertainer like Bow Wow is very popular with tweens, especially females. So, we considered having our street teenagers who are older than tweens, attend a concert and interact with the concert goers and talk to them about *VERB*. In fact, we had an agreement with Bow Wow and part of his summer tour was with *VERB*. We were very prominently recognized during his concerts.

We work with a variety of different partners and we used the same approach when working with our media partners, including Viacom. We didn't just want Viacom itself but we wanted their properties which include CBS, MTV, and Nickelodeon. It was important for us to develop those relationships, and go to them, again, trying to reach the tweens where they are. We did the same thing with ABC Disney. We worked with ABC Disney and Radio Disney to try to help

us take VERB to tweens. We looked at other media markets within the Hispanic/Latino and African-American communities. Our media efforts do not reflect traditional government activities. This campaign is designed to run ads 52 weeks of the year. We want to try to reach the kids from all directions, at all times.

We have done a variety of different things in different communities across the country. We try to integrate the campaign within programs or initiatives that already exist. The teenage street teams are an example of this. We have a public relations piece through which we try to link up a community with the local media partners so that we can draw attention to their efforts, as well.

In essence, VERB includes many different pieces and we want to try to connect to all of these. Some of our phase-one activities included our partnership with Nickelodeon and doing some events in local communities to get young people more aware not only of VERB but also the importance of becoming more physically active. We had a VERB action day, a huge event in Los Angeles County where we drew almost 10,000 young people to an all-day event. The day was all about opportunities to explore with rock climbing walls, tennis lessons, golf, stationary and regular bikes. You name it; we probably had it there, including hockey and football. Also, we had some entertainment.

We did many of those things to draw attention to the importance of being physically active. Within schools we've worked with *Sports Illustrated for Kids* and have developed book covers that we sent out across the nation to middle schools. We've been on the school lunch menus trying to convey the idea of being physically active and to support advocacy for and promotion of policies that do that.

Many of our partners want information about how they can engage in the campaign. We are moving our campaign message in the direction of getting tweens to be active 365 days out of the year. So, we're looking at VERB 365 and highlighting specific dates throughout the year. This includes giving attention to the summer solstice which is the longest day of the year. We plan to reframe it and make it a VERB's Longest Day of Play; we're going to ask partners to capitalize on this

concept with us. We are going to be working with Radio Disney. We want to make this into the longest day of play. Partners can get involved by, for example, extending their hours for one more hour so young people can play an extra hour. Or, some partners may wish to have some special activities on the longest day of the year. We will have an activity packet available about the longest day of the year, the Longest Day of Play.

In October when we change the time back by an hour, we gain an extra hour of play and we're going to try to capitalize on that. In February 2004, which is a leap year, we're going to have the extra day of play for VERB.

VERB has three Web sites. We have one for partners, which is the government Web site, in addition to the Web site for parents and the one for youth. Another Web site under development is for the Hispanic/Latino community.

- For Partners: *VERB. It's what you do.*
Includes TV and radio broadcasts, newsletter and research tracking results
www.cdc.gov/verb
- For Youth: *VERB. It's what you do.*
www.verbnow.com
- For Parents: *VERB. It's what you do.*
www.verbparents.com

We would like to partner with you through your networks to make them aware 1) of the VERB campaign itself, 2) about VERB 365, and 3) about their participation in the different key events that are happening throughout the year. Thank you!

Panelist remarks

Bonnie Spear, PhD, RD

Associate Professor of Pediatrics, Division of Adolescent Medicine
University of Alabama, Birmingham

Bonnie Spear, PhD received her undergraduate degree in nutrition and foods from Auburn University and her master's degree in clinical nutrition and PhD in health promotion and disease prevention from the University of Alabama. In addition to her appointment in pediatrics, Dr Spear has appointments to the School of Public Health and School of Health-Related Professions. She has written several book chapters on adolescent nutrition, serves as the project director for the Leadership Training in Pediatric Nutrition and is co-project director for the Leadership Education in Adolescent Health Training program at UAB and was the lead author on the middle childhood chapter for *Bright Futures in Practice: Nutrition*.

We have discussed a number of excellent programs that include wonderful and innovative ideas. I will review a potpourri of other innovative programs. My overview will feature a synopsis that includes the program name, target audience, goals, outcomes, and contact information. I will review programs that have outcomes that we can divide into three different kinds of categories.

Some of this information was organized in collaboration with the International Science Institute for Health Promotion and my colleague Debbie Kibbey. We worked together to compile this list with the assistance of others from the University of Alabama where I am a professor.

Health-care based programs Health-care based programs typically include licensed group programs. These programs are hospital-based, individualized programs. They are located in primary care situations. These programs usually emphasize healthy eating, increasing physical activity, include behavior modification, and rely on family-based change. Let's review a few of them.

L.E.S.T.E.R. is Let's Eat Smart, Then Exercise Right. This program is run by the Children's Health System of Birmingham. L.E.S.T.E.R. is a dietician-led program but involves a multi-disciplinary team. The target audience is children ages six to eleven years. It combines individual and group and family counseling. The results have shown improvements in eating patterns, significant decreases in anthropometric measures including weight and BMI and decreases in both total caloric and percentage of fat intake. In a two-year follow up study, 83% maintained positive eating and exercise behaviors.

The Geisinger Weight Management Program is a team-led program with a multi-disciplinary approach. This is an intensive, 15-week, bi-weekly sessions which change to monthly sessions thereafter for a year-long program. Program researchers are still looking at the data from their results.

Committed to Kids is a program that is affiliated with Louisiana State University and is staffed by a multi-disciplinary team. This program uses different body measurements. It includes a stronger emphasis on

physical activity than some of the other programs and actually uses the acronym MIPEP, Modern Intensive Progressive Exercise Program. MIPEP includes strength, flexibility, and aerobic training. It includes video tapes and educational materials that are designed for children to use at home. The program has four phases: beginning, intermediate, advanced, and expert. Workbooks for both the children and the parents are designed to help families move through the phases. The short-term results show significant decreases in body weight, body fat, and BMI in 62.5% of those who completed one year of the program.

So far, all of the programs I've investigated can be purchased, including Shape Down, which is a family-based weight management program geared for young people who are six to 18 years of age. Shape Down was developed by the University of California, San Francisco. It's a 10-week, weekly session program that includes a multi-disciplinary team. It has four levels, depending on age; it is designed to be developmentally and age appropriate and addresses both nutrition and physical activity with a strong emphasis on behavior management.

This program has probably one of the longest follow-up components besides Len Epstein's program. It shows a positive effect even 10 years after completion of the program. Participant weight loss is more gradual than some of the other programs and weight maintenance was at one pound per week with a strong increase in self-esteem.

KinderShape is another program with four-week modules and a six-week program for parents of children three to five years of age. It uses a multi-disciplinary team. Outcomes show that 85% of the program participants demonstrated weight loss and 80% kept it off for at least two years. This is for younger kids so it has to do with height and growth, as well.

Operation Zero is a program from Georgia. It is another multi-disciplinary program with the addition of a chef which distinguishes it from other programs. The program actually includes cooking demonstrations with the family and children get to participate in the cooking classes. This program has a strong

emphasis on exercises and using pedometers. It also has an eight-week program for adolescents. Outcomes show a decrease in BMI, body fat, and increases in physical activity levels.

HealthWorks is part of the health center at the University of Cincinnati. There are two groups; one for children ages five to 10 years and the other for adolescents ages 11 to 19 years. Again, it's a team-based program, takes 12 weeks to complete, and emphasizes cardio-vascular health, as well. Outcomes include reductions in BMI, blood pressure, and body fat.

Pace Plus is a different type of program. It was developed at the University of San Diego where it is still headquartered. It is designed to be offered through physician's offices. The original Pace was an adult program. The total emphasis of Pace Plus is on physical activity and nutrition. Pace Plus is a computer-based kiosk through which a patient, an adolescent, sits down and answers a lot of questions. The program targets behaviors and describes moderate physical activity, vigorous physical activity, dietary fats, and fruit and vegetable intake. Each teenage participant is asked to target one or two of these areas that they would like to address, so they choose the areas. Once the child decides which targeted behavior to work on, the child's physician is given a print-out so that these behaviors can be emphasized during medical visits. Outcomes have shown that individuals who use the Pace Plus system significantly improved the targeted behaviors more than the non-targeted behaviors and it was highly rated by participants at all levels.

The 10,000 Step Program is ambitious for children. Study results show that participants averaged about 2,000 to 4,000 steps a day. Although most people did not reach the daily 10,000 steps goal, they improved significantly. For instance, 31% reached the goal, but the 50% who did not reach the goal felt they did improve significantly. So, I recommend that in using this program with children, the goal is to improve the number of steps, not necessarily to reach the goal of 10,000 steps each day. I recently learned that the Coca-Cola Company now has a program geared for schools in which they actually distribute pedometers to every child in the school through a physical activity education program.

Community- and curriculum-based programs I want to briefly review community-based programs. They tend to be more culturally, linguistically sensitive.

There are comprehensive curriculum-based programs that address at least two of the following: nutrition, school meals, health education, physical activity, sedentary activity, and behavior modification. So, all programs do not address all of these aspects. These programs tend to be convenient; they are low-cost because they're available to the masses. They're easily accessible, available to use, and overweight children are usually not stigmatized. Unfortunately, these programs are low cost because they are typically federally funded. We have to consider the sustainability of these programs once federal money is no longer available.

All of these programs feature physical activity and nutrition with the exception of the three that also address the school nutrition program. They all use principles of behavior modification. Community-based programs tend to increase awareness of the health risks related to overweight. They also tend to address policy changes and environmental changes.

Healthy Start is a pre-kindergarten program for children ages three and four years of age but also has an adolescent component. It addresses changing children's behaviors and helping preventing adolescent overweight and obesity. Evaluation efforts look at changing nutrition patterns and evaluating the effect of nutrition education and food service intervention on blood cholesterol and fat intake.

TAKE 10 is a kindergarten through fifth grade program that is designed to reduce sedentary behavior during the school day. The program sponsors actually went into schools and trained teachers to get 10 minutes of activity. When children changed a subject, teachers would get the children up from their seats and do an intervention in the classroom. Results showed quite a significant increase in the amount of physical activity, and the teachers seemed to really like it because it gave the children some energy. Even though calming the children back down after the exercise was challenging, the program offered teachers some ideas for addressing the situation.

Child and Adolescent Trial for Cardiovascular Health (CATCH) is a school-based program that Leslie Lytle was intimately involved with and was probably the premiere school-based intervention program. CATCH included cardio-vascular risk factors as well as obesity. The program was designed for kindergarten through fifth grade and was tested at pilot sites in Texas, Minnesota, California, and Louisiana. Results showed decreases in fat, saturated fat, sodium intake, and total cholesterol and increases in physical activity. Although this program has been completed, I think the sustainability in some of the schools has lasted, as well.

SPARK (Sports, Play, and Active Recreation for Kids) was designed to improve physical education to contribute to the nation's health objectives and to train teachers to enhance physical education. Elementary schools have been trained in this and it's really cool and fun using different things such as parachutes, and things where all children can play at all times. It incorporates the principles that all children get to participate. In this program, everybody plays at the same time.

Pathways is a Native American intervention. Although the funding stopped, the tribal communities were so impressed with it that many of them have continued with some of the services and interventions after the program ended. Training was an important component of the sustainability of this program.

OPPrA stands for Obesity Prevention for Pre-Adolescents which was funded at Stanford by NHLBI. The program goals were to implement culturally appropriate school-based healthy eating and physical activity initiatives. This is a fairly new program so evaluation results are not available, but I think it is an interesting concept. The program looks at measuring BMI, body fat, and girth. The intervention is ongoing at this point.

Two other programs that are geared for different ages are Planet Health and Eat Well and Keep Moving. The Eat Well and Keep Moving program is designed for fourth and fifth grade students and Planet Health is for sixth and seventh grade students. The programs emphasize increasing fruit and vegetable intake, decreasing total and saturated fat, increasing moderate-

to-vigorous physical activity, and decreasing television viewing. Planet Health results show significant decreases in fat, increases in activity, and decreases in television viewing.

Another community program is called GEMS, Girls' Health Enrichment Multi-Site Program. This is a federally funded program but was undertaken differently wherever it was implemented. For instance, Minnesota had an after-school program and Memphis had a child intervention program of 1½ hours per week targeting families. Stanford offered an after-school dance program and Baylor had a four-week summer camp and Internet program. We can see that they had some significant outcomes. They increased reported low-fat alternatives, increased low-fat cooking, and participants increased the use of fruit and vegetables. So there were some significant outcomes from each of the different formats.

I receive numerous calls about how to implement these great and wonderful programs from people who don't have anybody to teach it or don't know what to do on an individual basis. I work in the department of pediatrics so resident physicians who are graduating want to know how to treat the children who come to their offices. The key is to teach them to do BMIs (body mass index) first; however, there are a lot of other programs with different emphases.

The University of California, Berkeley has a wonderful Web site that includes some really helpful things that communities can do and the other is what children can do. There are kits to guide people as they work with communities or individuals. The site also offers a lot of monographs and professional literature on their site.

Cardiovascular Health in Children is a new program called CHIC. It is geared for children in grades three through four and their goal is to improve health in children on at least two cardiovascular risk factors. They're comparing the classroom-wide program to the individual intervention. CHIC researchers looked at 422 children in eighteen rural and urban schools. They looked at reducing cholesterol, blood pressure, and body fat. The positive results were stronger in

the more easily implemented classroom approach, so actually the children who participated as a group tended to have better results than the individual ones.

Go Girls is targeted at adolescent African-American females to improve both diet and physical activity using a social cognitive framework of culturally appropriate activities and they're still in data collection. Hearts N' Parks is an overall generic program that includes youth and older adults; it's in North Carolina in rural and urban settings. It was designed to add value to existing summer programs at park facilities using older Americans to work with the youth. They have created more opportunities for youth for physical activity and fitness, and 35 states now have expressed interest in becoming Hearts N' Parks communities.

There are three major programs under development or in operation that are called the PROS Network, Pediatric Research in Office Settings. These programs treat childhood obesity. At Kaiser Permanente, they aim for healthy weight and they train medical students to implement nutrition interventions with children. PROS uses a randomized control of pediatric offices. It targets children ages three to seven years for risk of obesity. This program trains physicians on what a BMI is, how to calculate it, and how to intervene early. All of these are individual, primary care-based programs. So they include intervention and guidelines about healthy eating, looking at BMI percentiles, activity behavior at two years out.

The AIM program at Kaiser is coming out with some prescription pads. One of the things that we do know is that physicians don't talk about nutrition or physical activity; it is low on their priority list. They attend to immunizations, safety issues, and that type of thing. So, this was a quick and easy way of doing it through a prescription pad that they can give out to parents. It offers a way of checking things that they would like patients to work on for the next visit and it includes nutrition goals, activity goals, and guidance. On the back of the form is guidance for parents about how to address these issues at home. Although this is still in pilot testing, I thought it was the kind of innovative approach worth mentioning.

In Birmingham, we have one of the few medical schools that has a required nutrition course in the first year of medical school. Because most of the medical students slept through the class, we decided to make it interactive. So, we train students to become patients. The medical students have to actually interview the actor-patients who grade them on how well they did in the interview process. We've developed quick-and-dirty nutrition screening and intervention in 10 minutes or less, which would be impossible for a dietician but it works for the medical students.

We stress motivational interviewing that is based on the transtheoretical model and what we call the five A's. Motivational interviewing is getting medical students to really ask the questions and give some recommendations back in a very short period of time. Physicians tell us that it is really difficult to do this.

The chart (See **Appendix: A General Overview of Physical Activity and Nutrition Intervention Programs, Dr. Bonnie Spear**) lists 42 programs; I've mentioned just a few of them. Getting these programs into communities and making them sustainable is the next level for researchers to address.

Audience participation and questions

Question How are the programs that you reviewed funded, Dr. Spear?

Dr. Spear This is an excellent question. It's very interesting that for the most part HMOs and others are coming out with their own programs now and they are seeing the results of their efforts.

I think we have just received permission from Blue Cross, who is now covering our programs. I think that we're looking at the insurers having to do something. I'm firmly convinced over the next two to three years that insurance companies will cover existing programs that have strong outcomes. I doubt that they will cover 20 visits to a dietitian, but if you have a program that shows significant outcomes, then I think they're going to start seeing these programs funded.

Question In terms of the outcome evaluations, did any of the studies that you reviewed look at outcomes other than body weight or activity? What about mental health, substance use, or other kinds of markers for positive behavior?

Dr. Spear A few programs looked at self-esteem. But, this was just the potpourri, the highlights, a review that did not look at other health risk behaviors.

Dr. Lytle There is a paper on adolescents that was published and one that's in press that looks at depression as a predictor of teens' levels of physical activity and dietary intake. In teens I was very interested in how depression might cluster with activity and nutrition, so we didn't try to intervene on depression. I think you're going to start seeing more in the literature about how depression is related to those other behaviors. The adolescent paper by Schmitz and Lytle was published in *Preventive Medicine* in 2002.

(Schmitz, Lytle et al., 2002) The other paper by Lytle et al. is coming out in the *Journal of Nutrition, Education and Behavior* in summer 2003.

Question What about the California Department of Education study that addressed the impact of fitness and performance on verbal and math scores? Has that study been published?

Dr. Graham It's available from the CDE Web site www.cde.ca.gov/news/releases2002/rel37.asp

Question What about after-school sports programs?

Dr. Graham My understanding is they simply looked at the fitness scores that had to be reported and the test data that had to be reported. They ran the correlations and that's what is being shared.

Question I am interested in information about how much the CDC campaign is costing. It's very impressive.

Mr. Medrano The initial funding that was given to CDC was \$125 million. Subsequently, we've had budget cuts like everyone else. The second year it was \$68.4 million, and this coming year it's \$51 million. However, from the very beginning, Congress has wanted to see what's going on, and it took us a year to put all the pieces in place. So there hasn't been a lot out there until the last six months. We hope to have more funding in the future. It's a five-year campaign, however, it's predicated on yearly funding and so we have to apply for dollars each year.

Question What are the plans for outcome evaluation?

Mr. Medrano The evaluation team actually started out with national baseline data that was completed through a telephone survey. I don't remember the

numbers, but we will be tracking those on a yearly basis. We will be talking to the same kids that we talked to before, and we're also talking to the parents, as well.

Question Are you looking at their physical activity levels?

Mr. Medrano We want to be able to identify how much behavior change we can create. However, during the first couple of years, we know that we're not going to see as much change as we would like to see. I think the best we can do is show recognition for the campaign and movement in the direction of change. We hope that four years from when we started, we will begin to see the behavior change that we want. The difficult part, as evaluation professionals who do longitudinal studies know, is keeping track of the same children over time because people move. Families move and we try to track them down which presents several challenges. But, you know, we have high hopes for that.

Question I have another question for Dr. Lytle. Have adolescent food choices been investigated in other environments? Schools really have a sort of captive audience.

Dr. Lytle Simone French undertook this type of research comparing pricing and promotion effects on vending purchases in adult worksites and in schools (French et al., 2001).

Question I have a question for Dr. Graham and probably for all of you. This past year we tried to get the state to pass activity levels for the different school districts, and they left it up to the local jurisdictions to make up their mind about what they're each going to do. Part of the pressure that a lot of school districts might be facing is related to end-of-year testing and that you don't do end of year testing on physical activity. Is the National Association of Sport and Physical Education looking at this issue? Is there a way we can think about putting criteria on the schools' performance for physical activity so the schools will pay attention to it? If we continue to see this push toward reading, writing, and arithmetic and ignore physical activity as a marker, then schools are going to continue to ignore the issue.

Dr. Graham This is really an interesting time. Physical activity is valued as never before and yet we have the "no child left behind" legislation in many states. They're evaluating schools simply on the basis of math and reading test scores. South Carolina has run out of funding, but they have a process for evaluating schools. It's not the individual but kind of a school report card, and they have physical education testing at the secondary level to assess a school. So it's a school assessment as opposed to an individual assessment.

We completed a study in Virginia that asked 1200 elementary school principals to tell us how much time they allocated for art, music, and physical education each week. We correlated time allocated, taught by specialists, with the test scores in Virginia, which are referred to as standards of learning in Virginia. We found no correlation, suggesting that, in fact, schools that devoted more time to art, music and physical education did not have lower scores and vice versa. I say "suggesting". It's very much on the radar screen. There are people who will suggest strongly that academic performance is influenced by physical activity but I don't think we have the landmark kind of studies that have really nailed it down.

If NASPE could come up with that evidence, then it would be revolutionary in terms of saying, "Hey, listen, if kids are physically active..."

You know, Texas requires 30 minutes of physical activity each day; they've passed that legislation. It's my understanding that they started off mandating physical education and then somehow through the legislative process it got changed from physical education to physical activity. It's a step in the right direction. We are concerned about schools that are eliminating recess because they want more time in the classroom. According to developmental psychologists, it is counter-productive to have children sitting in desks for another half hour to improve their math and reading scores at the expense of physical activity.

Question I am wondering about looking at policies and doing some advocacy work at the national level, maybe with school boards.

Dr. Lyle Two legislative sessions ago, the dental association in Minnesota proposed a bill to ban soft drink sales in schools. It was contested, and you can imagine some of the major lobbyists against it included the soft drink industry. But another opponent was the Minnesota School Board Association that was concerned about losing revenue and how it works against schools.

It's the perception that if students don't have soft drinks in the vending machine, they won't buy anything. We're shifting our message to reflect our research findings about buying water and 100% fruit juice. You're not going to lose a lot of revenue. But it was, I thought, a very interesting commentary about who would oppose such a bill.

Dr. Spear We are taking that another step. In four school systems, we have asked them to change their vending machines and we guaranteed them the income that they had in the two months before the change. The health department has come through with the money. The first month, we implemented the change in two school systems. Although revenue dropped the first month, the second month they were making more. Now, we are out of the picture of having to pay anything. It was just a matter of convincing them, giving them the opportunity. We're looking for some smaller grants to subsidize anything that they don't make during the initial vending machine change.

Question Do you have something that you've prepared that tells me what I need to communicate to my membership of health educators about what VERB is? I think it would be great if we could figure out a way in these forums, to leverage them and figure out a way to take the information that's being presented back to the memberships.

Mr. Medrano Absolutely. There's a one-pager describing the campaign. It includes VERB's mission, its vision, and its goals. Or visit www.cdc.gov/verb. (See Appendix VERB™ *It's What You Do*)

Question I was really impressed with the VERB campaign. But have you thought about children with special healthcare needs? I see that as a real opportunity to get the word out about the need to increase physical activity for kids with conditions like spina bifida.

Mr. Medrano We are trying to be very cognizant that whatever we come up with is appropriate for children with disabilities. All kinds of disabilities. Some of our materials include children in wheelchairs.

The variety of fun activities that folks can engage in are included. But, these are simply suggestions. People out in the field, they know what to do. We always try to take those into consideration. We ask ourselves if the activities that we are proposing are appropriate for somebody who has a disability, we try to determine if they could actually participate. Not every single one of them meets that criteria, but we hope that there are some in there. We did that with some of the events that we had this past year. We made sure that we had access or that kids with disabilities could attend these events, as well. We had California children in wheelchairs out participating with everybody else.

Dr. Fleming I've asked each speaker to share some final thoughts.

Mr. Medrano The message for me would be finding your VERB and making sure that all the kids that you touch find their VERB and they fulfill their dream.

Dr. Lyle I believe that physical activity and the nutrition side of the obesity epidemic is going to require grassroots action to get things changed. All of you are involved because you are parents or aunts or uncles. Talk to your schools, tell them that you expect the school to be a healthy place, that you expect it to be a place where children can find lots of healthy foods and lots of opportunities to be physically active.

Dr. Graham I want to reinforce that physical education is changing and is different. Every chance you get, please share that message. The old physical education we had is out the door for many good reasons. We need you to support the positive, high quality new physical education.

Dr. Spear We need to get the existing programs out there and not reinvent the wheel. There are tons of programs and every time I turn around somebody's developing a new program. But maybe we need to get the existing programs that do have outcomes out there first.

Areas for future research

Epidemiology

- Advocate that BMI be added to the HEDIS measures. (www.ncqa.org/Programs/HEDIS/)
- Identify an ICD-9 code to use for adolescents at risk for overweight. Using an ICD-9 code allows the physician to “mark it down,” count, and follow-up with those children and adolescents.
- Control for pregnancy, parity and contraceptive use in data studies of overweight and obesity in female adolescents.
- Define the economic cost of obesity. Evaluate the economic costs of prevention.
- Definitive, evidence-based research is needed on the influence of physical activity on academic performance.
- While it appears that physically competent children become physically active adults, evidence-based research on motivation is needed.
- Research is needed to demonstrate the link between changing the environment (eg, school food services) and its impact on changing young people’s behavior (eg, vending machine choices).
- Getting existing intervention programs with outcome measures into communities and making them sustainable is the important next level for researchers to address.

Treatment and reimbursement

- Integrate the practice of early detection and intervention for inappropriate weight gain or large changes in BMI among children and adolescents. Ideally this would occur before an individual reaches the 85th percentile of BMI, and certainly it should occur before an adolescent reaches the 95th percentile of BMI.
- Develop culturally and developmentally appropriate programs.

- Develop and publicize “best practices” for community-based prevention and treatment programs.
- Determine the factors that promote and maintain behavior change. Identify alternative methods for education and counseling.
- Work with third party reimbursement organizations to require reimbursement for preventive health care services. Reimbursement should cover all services of weight management programs, including nutrition education, physical activity counseling, and behavioral interventions.

Education: patients, parents, and physicians

- Educate parents, teachers, and other individuals who are involved with adolescents about potential medical and psychosocial consequences of adolescent obesity.
- Utilize existing physical activity and intervention programs that include outcome evaluation.
- Publicize information about the changes in physical education and support its positive, high quality approach.

Advocacy

- Work with community leaders, agencies and organizations to develop safe, affordable opportunities for non-competitive physical activity within schools and neighborhoods.
- Work with communities and planners to change transportation options (eg, bike paths, walking routes to schools).
- Advocate for the development of public policy that assures that all foods and beverages available to students in school settings meet minimal nutrition standards. Work with local school administrators to seek alternative funding sources outside of exclusive contracts with fast food and soft drink companies. Several studies have found that students will make healthier choices from vending and a la carte when given the option. Tell them that you expect the school to be a healthy place, that you expect it to be a place where children can find lots of healthy foods and lots of opportunities to be physically active. As Mr. Henke said, “You’re a taxpayer — that’s who we respond to.”
- Support the development of national standards to regulate the advertisement and promotion of energy dense foods and beverages to teens through schools and mass media. Lobby corporations to put calorie counts on fast foods.
- Make your voice heard on government and corporate policy issues related to nutrition and physical activity. Groups such as the Center for Science in the Public Interest identify issues and provide contacts. (www.cspinet.org/nutritionpolicy/policy_options.html)

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Resources

This list is presented as a starting point for research and education and is not intended to be exhaustive.

Professional associations and organizations

American Medical Association Program on Child and Adolescent Health
www.ama-assn.org/ama/pub/category/1947.html

American Academy of Pediatrics
www.aap.org

National Association for Sport & Physical Education (NASPE)
What Constitutes a Quality Physical Education Program?
www.aahperd.org/naspe/template.cfm?template=qualityPePrograms.html

American Dietetic Association
www.eatright.org

American Dietetic Foundation
Healthy Weight for Kids Initiative
<http://webdietitians.org/Public/7765.cfm>

American School Food Service Association
www.asfsa.org

Bright Futures
www.brightfutures.org

American College Health Association
Healthy Campus 2010: Making It Happen
www.acha.org/info_resources/special_pubs.cfm

National Alliance for Nutrition and Activity
www.cspinet.org/nutritionpolicy/nana.html

American Obesity Association
Childhood Obesity
www.obesity.org/subs/childhood

Center for Health and Health Care in Schools (CHHCS)
www.healthinschools.org

America on the Move™
www.americaonthemove.org

Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX
www.bcm.tmc.edu/cnrc

Adolescent Nutrition Case Study Website
www.bioscience.drexel.edu/adaweb

Nutrition Source
Department of Nutrition of the Harvard School of Public Health
www.hsph.harvard.edu/nutritionsource

PBS Classroom curricula on *Motivating Youth to Get More Exercise and Soda Sales at School*
www.pbs.org/now/classroom/verb.html

Gym shapes up. *Time for Kids*. 2002.
www.timeforkids.com/TFK/teachers/archives/twtfk/wr/0,15590,020920,00.html

Healthy K.I.D.S. (Knowledge Improving Diet and Strength)
Quarterly newsletter (English and Spanish) for middle school children
www.childrenshealthfund.org/hk.html

PASA: Parents Advocating School Accountability
A volunteer-run, San Francisco-based research and information project has information on how to advocate for healthy food choices in schools
<http://pasaorg.tripod.com>

Connect for Kids Child Nutrition (funded by Benton Foundation)
<http://216.198.222.116/childnutrition/ChildNutritionHome.htm>

Reference information

Centers for Disease Control and Prevention (CDC) Growth Charts for the United States, 2000
www.cdc.gov/growthcharts

Centers for Disease Control and Prevention (CDC) Body Mass Index
BMI: Body Mass Index Calculator for Children and Adults
www.cdc.gov/nccdphp/dnpa/bmi/index.htm

Nutrition.Gov
A portal to nutrition and health information on federal government Web sites
www.nutrition.gov

National Guideline Clearinghouse
www.guidelines.gov

Journal Special Issues

- *JAMA*, April 9, 2003, Vol. 289 No. 14, *Obesity Research theme issue*
<http://jama.ama-assn.org/content/vol289/issue14/index.dtl>

- *Pediatrics*, July 2002, Vol. 110, No. 1, Part 2, Supplement: Treatment of Overweight Children and Adolescents: A Needs Assessment of Health Practitioners, <http://pediatrics.aappublications.org/content/vol110/issue1/index.shtml#SUPPLS1>
- *Journal of the American Dietetic Association*, March 2002, Supplement • Vol.102, No.3, www.adajournal.org

Food pyramids

- **US Department of Agriculture, Food and Nutrition Information Center (FNIC), National Agricultural Library** Includes ethnic and cultural food pyramids in more than thirty languages, as well as pyramids specific to Asian, Latin American, Catalan, Mediterranean and other diets
www.nal.usda.gov/fnic/index.html
- **Food Guide Pyramid for Young Children**
www.usda.gov/cnpp/KidsPyra
- **Oldways Preservation & Exchange Trust** Oldways Preservation & Exchange Trust is a non-profit educational organization that promotes specific alternatives to the unhealthy foods characteristic of eating patterns in industrialized countries
www.oldwayspt.org

Obesity as a Public Health Issue: A Look at Solutions and national poll on obesity, June 2003

www.phsi.harvard.edu/health_reform/focus_on_obesity.php

Child Trends Data Bank

www.childtrendsdatbank.org

Federal Resources

US Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau
<http://mchb.hrsa.gov>

US Department of Health and Human Services Promotes Health through Physical Activity
www.hhs.gov/news/press/2002pres/physactive.html

US Department of Agriculture, Center for Nutrition Policy and Promotion
Includes the full text of Nutrition Insights, a newsletter, and resources for nutrition education
www.usda.gov/cnpp/

US Department of Agriculture, State Competitive Foods Policies
www.fns.usda.gov/cnd/Lunch/CompetitiveFoods/state_policies_2002.htm

MEDLINEplus: Food, Nutrition, and Metabolism Topics

Links to authoritative resources about all aspects of food and nutrition, including diseases, dietary supplements and food safety
www.nlm.nih.gov/medlineplus/foodnutritionandmetabolism.html

President's Council on Physical Fitness and Sports

www.fitness.gov

Centers for Disease Control and Prevention (CDC)

- **"VERB. It's What You Do" Youth Media campaign**
www.cdc.gov/verb
- **Body and Mind (BAM)**
www.bam.gov
- **National Center for Chronic Disease Prevention and Health Promotion, CDC Division of Adolescent & School Health**
www.cdc.gov/nccdphp/dash/index.htm
- **School Health Policies and Programs Study (SHPPS)**
www.cdc.gov/nccdphp/dash/shpps/index.htm
- **National Center for Health Statistics, National Health and Nutrition Examination Survey (NHANES)**
www.cdc.gov/nchs/nhanes.htm
- **Behavioral Risk Factor Surveillance System (BRFSS)**
www.cdc.gov/brfss
- **Youth Risk Behavior Surveillance System (YRBSS)**
www.cdc.gov/yrbs
- **National College Health Risk Behavior Survey (NCHRBS)**
www.cdc.gov/nccdphp/dash/yrbs/previous_results/college1997.htm

National Institutes of Health

- **National Institute of Child Health and Human Development** Sponsor of the "Milk Matters Calcium Education Campaign"
www.nichd.nih.gov
- **National Heart, Lung and Blood Institute Obesity Education Initiative**
www.nhlbi.nih.gov/about/oei/index.htm
- **National Institute of Diabetes and Digestive and Kidney Diseases**
www.niddk.nih.gov
A project funded by the National Institute of Diabetes & Digestive & Kidney Diseases *Action for Health in Diabetes*
www.niddk.nih.gov/patient/SHOW/lookahead.htm
- **HealthierUS.gov** From the Executive Office of the President and the Department of Health and Human Services
www.healthierus.gov
- **The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity**
www.surgeongeneral.gov/topics/obesity
The publication has an excellent resource list of federal programs
www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf

Appendix: A

**American Medical Association
Educational Forum on Adolescent Health:
Adolescent Obesity, Nutrition, and Physical Activity
November 14, 2002 and May 16, 2003
Washington, DC**

Attendees

Invited guests included representatives from the AMA's Educational Forum on Adolescent Health and other organizations.

American Academy of Child and Adolescent Psychiatry
American Academy of Family Physicians
American Academy of Pediatrics
American Association for Health Education
American Academy of Pediatric Dentistry
American Bar Association Center on Children and the Law
American College of Allergy, Asthma, and Immunology
American College of Emergency Physicians
American College Health Association
American College of Obstetricians and Gynecologists
American College of Physicians
American College of Preventive Medicine
American Dietetic Association
American Institutes for Research
American Medical Association Alliance
American Medical Women's Association
American Nurses Association
American Osteopathic Association
American Psychiatric Association
American Psychological Association
American Public Health Association
American School Health Association
American Society for Addition Medicine
American Society for Adolescent Psychiatry
Association of Maternal and Child Health Programs
Association of State and Territorial Health Officials
Center for Adolescent Health and the Law
Centers for Disease Control and Prevention
DHHS, Office of Disease Prevention and Health Promotion
DHHS, Office of Population Affairs
Department of the Army
HRSA, Maternal and Child Health Bureau
Institute for Youth Development
National Adolescent Health Information Center
National Alliance for Hispanic Health
National Association of Social Workers
National Assembly on School-Based Health Care
National Association of Pediatric Nurses and Practitioners
National Association of School Psychologists
NIH, National Institute on Alcohol Abuse and Alcoholism
NIH, National Institute on Drug Abuse
National Hispanic Medical Association
National Medical Association
National Mental Health Association
Society for Adolescent Medicine
Society for Public Health Education
Society for Research on Adolescents
The Robert Wood Johnson Foundation
William T. Grant Foundation

Appendix: B

VERB™ It's What You Do
A Centers for Disease Control and Prevention
(CDC) Campaign



VERB™ It's what you do. Is an integrated youth marketing campaign coordinated by the US Department of Health and Human Services' Centers for Disease Control and Prevention (CDC). VERB is one of the largest national, multicultural campaigns designed to increase levels of physical activity among youth. In the first year alone, this campaign has achieved impressive results, with nearly 75% of children ages 9 to 13 being aware of VERB. VERB continues to exceed its expectations—with innovative advertising and marketing execution and a wide range of support from traditional and nontraditional campaign partners.

Campaign mission To increase and maintain regular physical activity among children Ages 9 to 13.

Need According to CDC's Youth Risk Behavior Survey data, approximately 32% of students nationwide (grades 9 to 12) attend physical education classes daily, down from 42% in 1991. Over the past 20 years, decreasing physical activity, together with unhealthy eating has resulted in a tripling of the percentage of children and adolescents who are overweight. Emerging trends of Type 2 diabetes in youth may be one of the first severe consequences of this overweight/obesity epidemic among youth—yet one that is preventable.

Audiences Pre-teens ages 9 to 13, parents, and adult influences (eg, educators, youth leaders, physicians) with targeted outreach to racial/ethnic populations.

Strategies Strategies of the federally funded national VERB Campaign are:

- Multimedia advertising and promotions including television, radio, magazine, and Web site advertising, plus contests and community events
- Partnerships with youth organizations, schools, and national professional organizations that support the campaign's goals through similar missions
- Partnerships with entertainment media popular with youth as well as with corporations that have messages similar to those of the campaign
- Research with youth and adult influencers that guide campaign strategies and messaging
- Continual evaluation of the short- and long-term impacts of the campaign

For More Information contact CDC: By e-mail at youthcampaign@cdc.gov or by phone at 770 488-6480

Visit VERB Campaign Web sites:

- For professional: www.cdc.gov/VERB
- For youth: www.VERBnow.com
- For parents: www.VERBparents.com

Appendix: C

A General Overview of Physical Activity and Nutrition Intervention Programs

Compiled by Dr. Bonnie Spear

Physical Activity and Nutrition Intervention Programs

This information is derived from published research, journal articles, abstract reviews, and direct contact with investigators. Inquiries regarding specific program results should be addressed to the contact person for that program.

■ **Healthy Start**

Grade/age Pre-K / 3 and 4 years

Goal(s)

- Change nutrition patterns in preschool centers
- Evaluate the effect of nutrition education and food service intervention on blood cholesterol and fat intake in 3- and 4-year-old children

Accomplishments

- Significant decrease in blood cholesterol levels
- Saturated fat intake in the children gradually decreased over time
- Increased nutrition and health knowledge
- Decreased fat and saturated fat content of the preschool meals and snacks

Contact information

Christine L. Williams
Professor of Clinical Pediatrics
Director, Children's Cardiovascular Health Center
Columbia University
Babies & Children's Hospital, BHN7-702
3959 Broadway
New York, NY 10032
Phone: 212 305-7815
Fax: 212 305-8995
E-mail: chrisw@pol.net
www.healthy-start.com
Cost: \$135 plus S&H

■ **Animal Trackers**
Pre-School TAKE 10![®] Intervention

Grade/age Pre-K / 3-5 yrs

Goal(s)

- Increase amount of structured physical activity for preschool children
- Enhance/encourage gross motor development: marching, jumping, throwing, kicking, hopping
- Provide an easy-to-implement physical activity program integrated with preschool content areas

Accomplishments

- Evaluated in three states (NH, NY, GA) in demographically different populations
- Currently collecting data on fourth round of pilot testing in NM

Contact Information

David Dennison, Program Manager
Physical Activity & Nutrition (PAN)
ILSI Center for Health Promotion
2295 Parklake Drive, Suite 450
Atlanta, GA 30345
Phone: 770 934-1010
Fax: 770 934-7126
Email: ddennison@ilsa.org

■ **Hip-Hop to Health Jr.**

Grade/Age Pre-K / 3-5 years

Goal(s)

- Test the effect of the intervention on change in body mass index
- Alter the trajectory toward overweight/obesity among preschool African-American and Latino children
- Report baseline data from an obesity prevention intervention developed for minority preschool children

Accomplishments

- 5-year randomized intervention (ongoing) in 24 Head Start Programs
- Efficacy of the intervention will be determined by weight change for the children and parent/caretaker
- Behavior related to diet and physical activity are established early in life and modeled by family members
- Early intervention efforts addressing the child and family are needed to prevent obesity later in life

Contact information

Marian L. Fitzgibbon PhD
Eating Disorders Research Program
710 N. Lake Shore Dr., Suite 1200
Chicago, IL 60611
Fax: 312 908-5070
E-mail: mlf056@northwestern.edu

■ **The SPARK Programs (Sports, Play, and Active Recreation for Kids)**
After School (AS)—Active Recreation

Grade/age

1. 3-6 grades
2. K-2
3. Pre-K
4. MS (6-8)
5. AS, 5-14 years.
6. Lifelong Wellness (formerly Self-Mgmt.)

Goal(s)

- Improve the extent to which PE/PA/nutrition contributes to achieving US health objectives
- Provide teacher training to enhance PE/PA/nutrition in schools

Accomplishments

- Doubled student physical activity during PE classes
- Improved the quality of teaching; maintained for at least 1.5 years after the study
- Improved sports and activity skills
- Improved cardiorespiratory fitness and muscular endurance in girls
- Improved academic achievement
- Students enjoyed the SPARK PE classes

Contact information

Paul Rosengard, Executive Director

The SPARK Programs

www.sparkpe.org

438 Camino Del Rio South, Suite 110

San Diego, CA 92108

Phone: 800 SPARKPE, ext. 208

Email: prosengard@sparkpe.org

Cost: \$50 to \$75 plus S&H (additional costs for teacher training)

■ TAKE 10!®

Grade/age K-5th grade elementary program

Goal(s)

- Reduce sedentary time during the school day
- Add structured, 10 minute bouts of physical activity to classroom
- Provide integrated (activity & academics) curriculum tool to elementary school teachers

Accomplishments

- The student enjoyment rate exceeded 90% throughout the first 10-week implementation
- 80% of teachers reported that they would recommend the program to another teacher
- 75% of the teachers reported that they were able to do a TAKE 10! Activity at least 3 times per week in the first 2 semesters
- Energy expenditure data indicates activities fall in moderate-to-vigorous range
- Sustained use after 1 year in 60-80% of teachers (3 or more times per week)
- Pre-K & Home & Middle School pilot studies in progress 2001-2003

Contact information

Shannon Williams, Program Manager

Physical Activity & Nutrition (PAN)

ILSI Center for Health Promotion

2295 Parklake Drive, Suite 450

Atlanta, GA 30345

Phone: 770 934-1010

Fax: 770 934-7126

Email: take10@ilsa.org

www.take10.net

Grade Kit: \$79 plus S&H

■ CATCH (Coordinated Approach to Child Health)

Grade/age

Grades K-5

4 sites: TX, MN, CA, LA

Follow-up in grades 6-8

Goal(s)

- Environmental changes: Reduce total fat, saturated fat, and sodium content of food served in school
- Increase the amount of PE class time that students spend in moderate to vigorous PA to 40%
- Individual change: reduce total cholesterol by 5mg/dl

Accomplishments

- Increased moderate-to-vigorous physical activity during PE
- Increased out-of-school vigorous physical activity
- No change in fitness

Follow-up on first intervention students:

- Self-reported daily intake was identical in control and intervention groups
- Intervention group self-reported higher daily physical activity
- Intervention group showed significant difference for dietary knowledge and intentions
- No change in serum cholesterol
- Gap is closing between control and experimental schools in follow-up

Contact information

CATCH Kids Club After School Program available.

Distributor: FlagHouse

Phone: 800 793-7900

Fax: 800 793-7922

E-mail: sales@flaghouse.com

601 FlagHouse Drive

Hasbrouck Heights, NJ 07604-3116

Principal Investigator:

Steven H. Kelder, M.P.H., Ph.D.

Associate Professor of Epidemiology & Behavioral Sciences

Center for Health Promotion Research & Development, Director, Outreach Education, Univ of TX–HSC at Houston

■ CHIC (Cardiovascular Health in Children)

Grade/age Grades 3-4

Goal(s)

- Improve health in children with at least 2 CVD risk factors
- Compare effectiveness of classroom-wide program with a program providing more individualized intervention

Accomplishments

- 422 children in 18 rural and urban schools
- Both classroom and small groups experienced similar reductions in cholesterol, blood pressure, and body fat
- Both groups showed increases in health knowledge
- Positive results were stronger in the more easily implemented classroom approach

Contact information

Joanne S. Harrell, RN, PhD
University of North Carolina at Chapel Hill, School of Nursing
CB# 7460, 506 Carrington
Chapel Hill, NC 27599-7460
E-mail: chic@unc.edu

■ Pathways

Grade/age Grades 3-5, American Indian children

Goal(s)

- To implement a culturally appropriate school-based intervention program that promotes healthy eating and to increase physical activity to prevent obesity

Accomplishments

- Close working collaboration with school staff and educational and tribal authorities
- Development of the four intervention components and instruments for measurement

Contact information

University of Minnesota
School of Public Health
Division of Epidemiology
1300 South Second Street, Suite 300
Minneapolis, MN 55454-1015
<http://hsc.unm.edu/pathways>

■ **OPPrA (Obesity Prevention for Pre-Adolescents)**

Grade/age 3-5 grades / FU—grade 6

Goal(s)

- Social cognitive theory and self-monitoring programs
- TV turnoff period
- Classroom curriculum
- Changes in PE and lunches

Accomplishments

- Measured BMI, body fat and girth
- Intervention is ongoing through 2001

Contact information

Thomas Robinson, MD
Assistant Professor, Pediatrics/Medicine
1000 WELCH RD. #100
Stanford, CA, 94305-5757
Phone: 650 723-5331
E-mail: Tom.Robinson@Stanford.edu

■ **Eat Well & Keep Moving**

Grade/age Upper elementary school-aged children (4th and 5th grade)

Goal(s)

Behavior targets include:

- Increase fruits and vegetable intake
- Decrease total and saturated fat
- Increase moderate to vigorous physical activity
- Decrease television viewing

Accomplishments

- 4 hours less time per week watching TV
- Increased fruits and vegetables consumption
- Decreased total and saturated fats intake
- Enables teachers to promote good health practices in conjunction with math, science, language arts, and social studies
- Implemented in 40 of Baltimore's 122 grade schools

Contact information

© 2003 Human Kinetics Publishers, Inc.
PO Box 5076
Champaign, Illinois 61825-5076
Phone: 800 747-4457
E-mail: orders@hkusa.com
Cost: \$42

Lead Author: Lilian Cheung, DSc, Department of Nutrition,
Harvard Univ. School of Public Health

■ FIT KIDS

Grade/age 6-12 year old children, their parents and caregivers

Goal(s)

- Implement lifestyle changes to increase fitness/health
- Acquire understanding of / increased sensitivity to: hunger, appetite, fullness
- Understand relationship between fitness and body
- Increase self-esteem and develop a more positive body image

Accomplishments

Three main focus areas: fitness, nutrition, and self-esteem

- Program implemented in 347 families during the past 4 years
- In a 4 year follow-up evaluation, 86% of kids stated they know how to listen to their bodies' messages regarding feeling full
- Abstract to be published in the *Journal of the American Dietetic Association*

Contact information

Beth Passehl

FIT KIDS

Community Health Development and Advocacy

Phone: 404 929-8793

E-mail: beth.passehl@choa.org

■ GEMS (Girls Health Enrichment Multi-Site Program)

Grade/age 8-10 yr. old African American females

Goal(s)

- Reduce risk for obesity and associated health problems by developing/evaluating a community and family-based behavioral intervention program

Accomplishments

- Increased overall levels of physical activity
- Increased consumption of fruits & vegetables
- Decreased consumption of high-fat foods
- Family involvement encouraged through use of take-home activities

Contact information

www.bsc.gwu.edu/gems/

Supplement on GEMS coming out in 2/2003 in *Ethnicity and Disease*

■ Planet Health

Grade/age Adolescent / 6th & 7th grades

Goal(s)

- Obesity reduction as primary outcome
- Decrease TV viewing, increase fruits and vegetable intake, decrease fat intake, increase physical activity

Accomplishments

- Significant reduction in the prevalence of obesity (defined as BMI and a triceps skinfold greater than the 85th percentile) was observed for girls / none in boys
- Effects of intervention on adiposity were largely due to changes in television viewing

Contact information

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PO Box 5076

Champaign, Illinois 61825-5076

Phone: 800 747-4457

E-mail: orders@hkusa.com

Cost: \$42

Lead Author: Jill Carter, MA, MEd, Project Director, Harvard Prevention Research Center on Nutrition and Physical Activity for Youth (HPRC)

■ TEENS (Teens Eating for Energy and Nutrition at School)

Grade/age 7th grade students, 16 schools in Minneapolis-St. Paul area

Goal(s)

- Improve fruit, vegetable, and reduce fat intake among middle school students

Accomplishments

- TEENS demonstrated that students with the greatest “dose” of the program—those that were peer leaders, had the classroom curriculum, and were exposed to environmental changes—were more likely to change their fruit, vegetable, and fat intake compared with other students
- This program was one of the very few that has worked with teens as the target audience, had a very innovative curriculum, and was partially taught by peer leaders.

Contact information

The materials can be obtained from the Learning Zone Express

Phone: 800 455-7003

www.learningzoneexpress.com

Reference:

Birnbaum, AS, Lytle LA, Story M, Perry CL, Murray DM. Are differences in exposure to a multicomponent school-based intervention associated with varying dietary outcomes in adolescents? *Health Education & Behavior*. 2002;29(4):427-443

■ Generation Fit

Grade/age Youth 11-18 years (school and community groups)

Goal(s)

- Strengthen community action skills (ie, planning, advocacy, communications)
- Participate in projects related to physical activity, healthy eating

Accomplishments

- Middle school students got peers' favorite healthy foods added to school lunch menu
- High school students organized food drive and prepared homeless shelter meals
- Athletic team developed a fitness trail for the entire community at their school
- High school PE students advocated for repair of community parks

Contact information

Alexis Williams, MPH, CHES
American Cancer Society
1599 Clifton Rd NE
Atlanta, GA 30329
Phone: 404 329-7616
E-mail: awilliam@cancer.org

■ Go Girls!

Grade/age Adolescent African American females

Goal(s)

- Improve both diet and physical activity patterns, using a social cognitive framework

Accomplishments

- Purpose was to measure feasibility and salience of intervention in public housing (rather than efficacy)
- Physiologic, dietary and behavioral assessments at baseline and post intervention

Contact information

Ken Resnicow, PhD, Assoc. Professor
Emory University
The Rollins School of Public Health
1518 Clifton Road
Atlanta, Georgia 30322
Phone: 404 727-7222
Fax: 404 727-1369
E-mail: Kresnic@sph.emory.edu

■ **New Moves**

Grade/age Females in high school

Goal(s)

- Place less emphasis on a thin-oriented society
- Females are encouraged to feel good about themselves by altering their behavior to incorporate healthy eating and physical fitness

Accomplishments

- Offered fun, non-competitive physical activity, nutritional guidance, and social support
- Data collection continues

Contact information

Dianne Neumark-Sztainer, PhD, RD
Project Coordinator, Division of Epidemiology, School of Public Health
University of Minnesota
Minneapolis, MN 55454
Phone: 612 624-1818
E-mail: neumark@epi.umn.edu

■ **PACE+ (Patient-centered Assessment for Counseling and Exercise, plus Nutrition)**

Grade/age Adolescents and adults

Goal(s)

- Provide Interactive health communications programs for primary care settings via the computer

Accomplishments

- Assess and intervene on multiple behaviors
- Collect, compile, summarize self-report information
- Create individually tailored action or relapse-prevention plans for health behavior change

Contact information

Judith Prochaska, MS
San Diego State University
6363 Alvarado Court, Suite 250
San Diego, CA 92120
E-mail: prochask@sunstroke.sdsu.edu

Childhood Weight Management Intervention Programs

This information is derived from published research, journal articles, abstract reviews, and direct contact with investigators. Inquiries regarding specific program results should be addressed to the contact person for that program.

■ KidShape®

Grade/age Grades Pre-K through 8th / ages 3 to 5 and ages 6 to 14

Goal(s)

- To increase awareness and promote adoption of a healthy lifestyle, including healthy eating, physical activity participation, and building positive self-esteem for entire families with overweight or obese children

Accomplishments

- Licenses two separate curriculums: KidShape and KinderShape®
- Study results—87% of program participants demonstrated weight loss and 80% kept it off for at least two years
- KinderShape is a six-week program that is suitable for delivery to parents and daycare workers
- Classes: nutrition for families and adults, active play for students, behavior modification for adults, cooking demonstrations, arts and crafts, and family physical activity

Contact information

KidShape®
8733 Beverly Blvd
Suite 400
Los Angeles CA 90048
Phone: 888 600-6444
info@kidshape.com

■ SHAPEDOWN

Grade/age Four program levels:

Level 1 (6 to 8 years)

Level 2 (9 or 10 years)

Level 3 (11 or 12 years)

Level 4 (13 to 18 years)

Goal(s)

Children and teens in SHAPEDOWN:

- Enhance their self-esteem
- Improve peer relationships
- Adopt healthier habits
- Begin to normalize weight within their genetic potential

Accomplishments

- Program shown to be effective at 10-year follow-up
- Educational meetings designed to enhance self-esteem and peer relationships while adopting healthier habits considering genetic and environmental influences
- Weight loss is gradual—ranging from weight maintenance to no more than one pound per week loss
- Integrates cultural, economic, and ethnic differences into materials with workbooks that include examples of a broad range of family types

Contact information

SHAPEDOWN

1323 San Anselmo Avenue

San Anselmo, CA 94960

Phone: 415 453 8886

Email: www.shapedown@aol.com.

■ Committed to Kids®

Grade/age children 6 to 18 years of age

Goal(s)

- An individualized approach to weight management conducted in an outpatient, group setting

Accomplishments

- The CTK program has been thoroughly evaluated (more than 15 published articles)
- Program uses a team-based approach including a physician, registered dietitian, exercise physiologist, and behavior specialist
- A significant decrease in body weight, body fat and BMI has been found in 62.5% individuals who completed the one-year program
- A short-term success rate (10-20 weeks) of 95% and a one-year success rate of 70-75% have been cited in other published research
- A new book, *TRIM KIDS™: The Proven 12-Week Plan That Has Helped Thousands of Children Achieve a Healthier Weight*, has been released based on the implementation and evaluation of CTK

Contact information

Committed to Kids

248 Aris Avenue

Metairie, LA 70005

www.COMMITTED-TO-KIDS.COM/HOME.HTML

■ University of Buffalo Childhood Weight Control Program

Grade/age Grades K through 5 / 6-12 years

Goal(s)

- The UB program utilizes the Stop Light Diet to help decrease the intake of energy dense foods in younger children; the program includes individual counseling and group education sessions that focus on behavioral choice theory

Accomplishments

- Reduction of sedentary behavior
- Stoplight Diet—categorizes foods (similar to the Food Guide Pyramid) and then codes the foods into three-color categories: green or GO foods, yellow or CAUTION foods, and red or STOP foods
- In a four-month, family-based weight management program with children, 8-12 years old, who were monitored at 10 years post-intervention, 34% of participants had maintained a decreased weight of more than 20%

Contact information

Colleen Kilanowski

Program Coordinator

SUNY Buffalo

G-56 Farber Hall

South Campus

Phone: 716 829-3400

E-mail: cck@buffalo.edu

■ HealthWorks!™

Grade/age Ages 5 to 10 years; ages 11 to 19 years

Goal(s)

- The HealthWorks! intervention for overweight children and adolescents is part of the Heart Center at Cincinnati Children's Hospital Medical Center

Accomplishments

- The program uses a team-based treatment approach including a physician, a registered dietitian, a psychologist, a nurse, an exercise physiologist, and an exercise instructor along with children and their families
- Results for participants who completed the initial 12-week phase indicate that the majority had a reduction in BMI

Contact information

HealthWorks!

3333 Burnet Avenue

Cincinnati, OH 45229-3139

Phone: 513 636-4305

www.cincinnatichildrens.org/svc/prog/healthworks/default.htm

■ Operation Zero

Grade/age An obesity management program for adolescents

Goal(s)

- Healthier lifestyle
- Exercise program
- Better ways to prepare food
- Reduce fat intake

Accomplishments

- 8 week program; meet 1x/week, 1 hour, with monthly follow-up
- Decreased BMI, body fat and increased physical activity levels

Contact information

Luke Beno, MD

Director, Operation Zero

Phone: 770 603-3604

Fax: 770 603-3674

E-mail

■ L.E.S.T.E.R.[®] (Let's Eat Smart, Then Exercise Right)

Grade/age Ages 6 to 11 years

Goal(s)

- 8-week program focused on balanced diet, increasing physical activity, and addressing emotional relationships within the family, includes follow-up protocol

Accomplishments

- Improvements in patterns of eating, exercise habits, attitudes, blood pressure, and nutrition knowledge (demonstrated in pre- and post-testing)
- Significant decreases in anthropometric measures upon completion of program
- Decrease in both total caloric and percent fat intake
- Follow-up—83% of respondents had positive eating and exercise behaviors

Contact information

The Children's Hospital of Alabama
1600 7th Avenue South
Department of Clinical Nutrition
ACC suite 416
Attention: Sue Teske, MS, RD, CNSD
Birmingham, AL 35233
Email: Susan.Teske@chsys.org

■ A Weigh of Life

Grade/age Weight control program for children and adolescents

Goal(s) To help children and adolescents:

- Change activity behaviors
- Change eating behaviors
- Keep weight off

Accomplishments Program includes 15 “projects”

- Form new eating habits
- Control when, where, and how you eat
- Plan meals
- Establish exercise routine
- Increase daily activity

Contact information

Texas Children's Hospital
Nutrition and Gastroenterology Department
Texas Children's Hospital
6621 Fannin St. MC 3391
Houston, TX 77030-2399
www.texaschildrenshospital.org

Other Physical Activity and Nutrition Resources

This information has been gathered through Web sites and direct contact with organizations. Inquiries regarding specific program results should be addressed to the contact person for that program.

■ Generation Fit

Grade/age Students ages 11-18

Goal(s)

- Students take part in community service projects that promote more physical activity and healthier eating among their friends and families, and in their schools and communities

Accomplishments

- Food for Thought: Trying new recipes in your cafeteria
- Message Magic: Selling healthy eating and physical activity
- Lending a Helping Hand: Planning meals for those in need
- Team Up for Good Health: Improving habits with a partner
- Let's Get Moving: Making physical activity a priority in our community

Contact information

For more information about the Generation Fit Action Packet contact your local American Cancer Society or call 800 ACS-2345

■ Team Nutrition

Grade/age Grades pre-K through 12

Goal(s)

- To empower schools to serve meals that meet the Dietary Guidelines for Americans, and motivate children in grades pre-K through 12 to make healthy eating choices

Accomplishments

- Team Nutrition Supporters participate in school activities such as presenting nutrition and health fairs; writing about Team Nutrition in their newsletters; and reinforcing Team Nutrition in the community by personalizing and reproducing Team Nutrition materials for employees, constituents, and community organizations

Contact information

USDA Team Nutrition
Child Nutrition Division
3101 Park Center Drive, Room 1010
Alexandria, VA 22302
Fax: 703 305-2879

■ School Health Index

Grade/age All grades

Goal(s)

- Publication: SHI: School Health Index For Physical Activity, Healthy Eating and a Tobacco-Free Lifestyle

Accomplishments

The SHI is a self-assessment and planning tool that enable schools to

- Identify the strengths and weaknesses of a school's health promotion policies and programs
- Develop an action plan for improving student health
- Involve teachers, parents, students and the community in improving school policies and programs

Contact information

Centers for Disease Control and Prevention
Division of Adolescent and School Health (DASH)
To order contact:
HealthyYouth@cdc.gov

■ Fit, Healthy and Ready to Learn

Grade/age All grades/ages

Goal(s)

- Publication: The State Education Standard, Vol. 3, No. 4, Autumn 2002

Accomplishments

A few featured articles

- Education Reform and the Goals of Modern School Health Programs
- The Untapped Power of Schools to Improve the Health of Teens
- Creating a Healthy School Nutrition Environment

Contact information

The State Education Standard
National Association of State Boards of Education
277 South Washington St., #100
Alexandria, VA 22314
Phone: 703 684-4000
Fax: 703 836-2313
To subscribe: www.boards.org

■ Kids Walk To School Day

Grade/age Adolescents and adults

Goal(s)

- Children walk and bike to/from school
- Emphasize regular PA for children, improved pedestrian safety, and healthy and walkable community environments
- Communities working together to create safe routes to school

Accomplishments

Anticipated benefits

- Increased levels of daily physical activity for children
- Increased likelihood that children and adults will choose to walk and bike for other short distance trips
- Improved neighborhood safety
- Fewer cars traveling through the neighborhood
- Fewer cars congesting the pick-up and drop-off points at the school

Contact information

Kidswalk-to-School
Centers for Disease Control and Prevention
4770 Buford Hwy, NE, Ms/K-46
Atlanta, GA 30341
E-mail: ccdinfo@cdc.gov

■ Bright Futures

Grade/age Children, adolescents and families

Goal(s)

- Focus areas: oral health, nutrition, mental health and physical activity
- Promote and improve the health, education, and well being of children, adolescents, families and communities

Accomplishments

- Develop materials and tools for families, health professionals, schools, and communities
- Disseminate Bright Futures content, philosophy, and materials
- Train health professionals, other professionals, families, and communities
- Develop and maintain partnerships
- Evaluate and refine these ongoing efforts

Contact information

www.brightfutures.org

■ Hearts 'N Parks

Grade/age Youth and older adults

Goal(s)

- Communities in NC, rural & urban settings
- Add value to existing summer programs at parks facilities

Accomplishments

- Pre- and post-tests used
- Qualitative data collected
- Program ongoing through 2000
- Nearly 90 park and recreational agencies in 35+ states have expressed interest in becoming Hearts n' Parks communities

Contact information

National Recreation and Park Association
22377 Belmont Ridge Rd.
Ashburn, Va. 20148
Phone: 703 858-2162
Fax: 703 729-4753
Toll free: 800 649-3042
E-mail: programs@nrpa.org

■ FITNESSGRAM

Grade/age K-12 physical activity assessment program

Goal(s)

- Fitness assessment of choice for thousands of schools and is used for millions of children and youth annually

Accomplishments

- Each of the test items are selected to assess important aspects of a student's fitness, not skill or agility
- Students are compared not to each other, but to health fitness standards, carefully established for each age and gender, that indicate good health
- Participants receive objective, personalized feedback and positive reinforcement, which are vital to changing behavior and serve as a communications link between teachers and parents

Contact information

www.cooperinst.org/ftgmain.asp
Or to order contact:
American Fitness Alliance
Phone: 800 747-4457, Ext 2407 or 2408
or order online

■ **CANFit (California Adolescent Nutrition and Fitness program)**

Grade/age Children and adolescents 10 to 14 years olds

Goal(s)

- Improve nutritional status and physical fitness of California’s African American, Latino, and Pacific Islander youth

Accomplishments

- Provide funding, training, and technical assistance to community programs
- Evaluate and disseminate effective strategies for community program development
- More than 100 grantees and scholarships

Contact information

Arnell J. Hinkle, RD, MPH, CHES
California Adolescent Nutrition and Fitness Program
2140 Shattuck Ave., Suite 610
Berkeley, CA 94704

■ **Physical Best**

(Practical, Health-related, Youth fitness education, Standards-based, Inclusive, Comprehensive, Age appropriate, Lifestyle, Behavioral approach, Enjoyable! Self-responsibility, Teaching energy balance)

Grade/age K-12

Goal(s)

- The purpose of the program is to assist physical education professionals in teaching health-related fitness education, through quality resources and professional development training, with a focus on inclusiveness of all children, enjoyment of physical activity, and teaching cognitive concepts and knowledge through activity.

Accomplishments

- Inclusive: all students participate
- Non-competitive: students work to improve themselves
- Progressive: resources follow proven educational progressions that help students take more responsibility for their own health-related fitness
- Individualized: students set personal goals based on their individual fitness
- Positive: makes physical activity and education a positive experience for all
- Ready to use: activities outline preparation, implementation, and follow-up lessons
- Incorporates the latest scientific information
- Linked to natl PE, dance and health standards
- Often used in conjunction with Fitness Gram

Contact information

For more information call Physical Best at 800 213-7193 or visit the program
Web site at: www.aahperd.org/physicalbest

■ Smart Stepping

Grade/age Elementary through college

Goal(s)

- A program incorporating movement, walking, math, health and physical education, active living and learning

Accomplishments

- Since 1981 Creative Walking Inc. has helped over 5,000 schools and school districts implement walking and wellness programs
- No evaluation data available on Web site, testimonials available for review

Contact information

Robert Sweetgall

Phone: 888 421-9255 toll free

Fax: 314 721-0303

E-mail: rob@creativewalking.com

www.creativewalking.com

Cost for the Smart Stepping Resource Package is \$22 plus S&H

■ Project LEAN (Leaders Encouraging Activity and Nutrition)

Grade/age All ages and populations in California. Selected by the Kaiser Family Foundation's 1987 public awareness campaign to promote low-fat eating

Goal(s)

- Create healthier communities through policy/environmental changes
- Educate Californians re: healthy foods and physical activity
- Conduct research-based, consumer-driven nutrition and physical activity campaigns

Accomplishments California Project LEAN programs:

- Food on the Run (adolescents) www.caprojectlean.org/about/default.asp
- School Board Nutrition Policy Project
- California Bone Health Campaign for Low Income Latino Mothers
- Community-Based Social Marketing
- California Nutrition Network
- California Obesity Prevention Initiative

Contact information

California Project LEAN

PO Box 942732 MS-675

Sacramento, CA 94234-7320

Phone: 916 323-4742

Fax: 916 445-7571

www.californiaprojectlean.org

Project LEAN funds 12 regional offices

Appendix: D

National Initiative to Improve Adolescent Health by the Year 2010

Improving the health of adolescents and adults is a priority for the United States. The national initiative provides a unique opportunity for policy makers, health professionals, community members, adolescents, and their families to collectively address the issues that affect the health of our nation's youth aged 10 to 24.

Why the focus on adolescence and young adulthood?

Good health (physical, emotional, social, and spiritual well-being) enables young people to make the most of these years while laying a strong foundation for adult life. Lifestyle behaviors developed during adolescence have immediate consequences that often continue into adulthood. These behaviors influence short and long-term prospects for health, educational attainment, risk of chronic disease and quality of life. Investment in the health of youth has long-term benefits.

What is the national initiative?

The National Initiative to Improve Adolescent Health by the Year 2010 (NIAAH 2010) was created to elevate the national focus on the health and well-being of adolescents and young adults.

Its goal is to comprehensively address the 21 Critical Health Objectives that represent the most serious health issues among young people. These Healthy People 2010 objectives cover unintentional injury, violence, reproductive health, substance abuse, mental health and suicide, and prevention of adult chronic disease.

Created to support collaborative action at community, State, and national levels, the National Initiative is facilitated by the Centers for Disease Control and Prevention's Division of Adolescent and School Health and the Health Resources and Services Administration's Maternal and Child Health Bureau/Office of Adolescent Health.

Benefits for States

Addressing the health needs of youth is a complex enterprise. The States, and most notably State public health agencies, provide the necessary leadership. The NIAAH 2010 supports States by providing a range of practical resources focused on strategic action to improve the health of youth at State and community levels.

Capacity building resources

Companion document to the NIAAH 2010 A guide for State and local agencies on processes such as coalition building, needs and assets assessment, setting priorities, program planning, implementation, and evaluation. Anticipated release date: Spring 2003.

Strategic planning guide A step-by-step guide on strategic planning and developing state adolescent strategic plans.

Meeting The State Adolescent Health Coordinator Network annual meeting is convened annually to assist SAHCs.

Technical assistance The national initiative funds expert staff to provide technical assistance, research, and advice to State Adolescent Health Coordinators and Maternal Child Health Professionals. Assistance is available from either the State Adolescent Health

Resource Center (teipel@umn.edu or 612 625-7137) or the National Adolescent Health Information Center (nahic@itsa.ucsf.edu or 415 502-4856).

Newsletters Growing Absolutely Fantastic Youth E-Newsletter for MCH professionals invested in adolescent health.

Healthy Youth Funding database An on-line database of federal, foundation, and state-specific funding sources for adolescent health programs (CDC-DASH). www.cdc.gov/nccdphp/dash/funding.htm
Anticipated release date: Late Fall 2002

Awareness and action resources

NIAIAH 2010 Information Campaign Provides tools and information for addressing the 21 Objectives. Anticipated release date: Late Fall 2002

Progress tracking resources

Broadcast of Healthy People 2010 progress reviews on adolescents and young adults to State health departments.

Periodic reports on States' progress in achieving the Critical Health Objectives.

Learn more?

Trina Anglin, MD, PhD
301 443-4291
tanglin@hrsa.gov

Who are the NIAIAH 2010 Partners? *(partial listing)*

National Adolescent Health Information Center (NAHIC), USCF
Public Policy Analysis and Education Center on Middle Childhood and Adolescent Health, USCF
State Adolescent Health Resource Center/
Konopka Institute U of MN
Association of Maternal and Child Health Programs
State Adolescent Health Coordinators Network
American Academy of Pediatrics
Partners in Program Planning for Adolescent Health
American Academy of Pediatric Dentistry
American Bar Association
American College of Preventive Medicine
American Dietetic Association
American Medical Association
American Nurses Association
American School Health Association
National Association of Social Workers

Appendix: E

The American Medical Association (AMA) policy
and action related to overweight and obesity

Obesity

H-440.902 Obesity as a Major Health Concern

(Res. 423, A-98)

The AMA:

- (1) recognizes obesity in children and adults as a major public health problem;
- (2) will study the medical, psychological and socioeconomic issues associated with obesity, including reimbursement for evaluation and management of obese patients; and
- (3) will work with other professional medical organizations, and other public and private organizations to develop evidence-based recommendations regarding education, prevention, and treatment of obesity

H-150.953 Obesity as a Major Public Health Program

(CSA Rep. 6, A-99)

Our AMA will:

- (1) urge physicians as well as managed care organizations and other third-party payors to recognize obesity as a complex disorder involving appetite regulation and energy metabolism that is associated with a variety of comorbid conditions;
- (2) work with appropriate federal agencies, medical specialty societies, and public health organizations to educate physicians about the prevention and management of overweight and obesity in children and adults, including education in basic principles and practices of physical activity and nutrition counseling; such training should be included in undergraduate and graduate medical education and through accredited continuing medical education programs;
- (3) urge federal support of research to determine: (a) the causes and mechanisms of overweight and obesity, including biological, social, and epidemiological influences on weight gain, weight loss, and weight maintenance; (b) the long-term safety and efficacy of voluntary weight maintenance and weight loss practices and therapies, including surgery; (c) effective interventions to prevent obesity in children and adults; and (d) the effectiveness of weight loss counseling by physicians;
- (4) encourage national efforts to educate the public about the health risks of being overweight and obese and provide information about how to achieve and maintain a preferred healthy weight;

- (5) urge physicians to assess their patients for overweight and obesity during routine medical examinations and discuss with at-risk patients the health consequences of further weight gain; if treatment is indicated, physicians should encourage and facilitate weight maintenance or reduction efforts in their patients or refer them to a physician with special interest and expertise in the clinical management of obesity;
- (6) urge all physicians and patients to maintain a desired weight and prevent inappropriate weight gain;
- (7) encourage physicians to become knowledgeable of community resources and referral services that can assist with the management of overweight and obese patients; and
- (8) urge the appropriate federal agencies to work with organized medicine and the health insurance industry to develop coding and payment mechanisms for the evaluation and management of obesity.

Physical Activity and Physical Fitness

Exercise and Healthy Eating for Children

(Res. 423, A-02)

That the AMA (1) seek legislation that would require the development and implementation of evidence-based nutrition standards for all food served in K-12 schools irrespective of food vendor or provider; and (2) work with the US Public Health Service and other federal agencies, the Federation, and others in a coordinated campaign to educate the public on the epidemic of childhood obesity and enhance the K-12 curriculum by addressing the benefits of exercise, physical activity, and healthful diets for children.

H-60.979 Physician-Based Physical Activity and Exercise Counseling Protocols for Youth and Adolescents

(Res. 186, I-90; Reaffirmed: Sunset Report, I-00)

It is the policy of the AMA, in collaboration with appropriate agencies, to assist in the development of physician-based physical activity assessment and counseling protocols for youth and adolescents, including the development of training materials to instruct physicians in the use of these protocols.

H-470.991 Promotion of Exercise

(Res. 83, parts 1 and 2, I-77; Reaffirmed: CLRPD Rep. C, A-89; Reaffirmed: Sunset Report, A-00)

Our AMA: (1) supports the promotion of exercise, particularly exercise of significant cardiovascular benefit; and (2) encourages physicians to prescribe exercise to their patients and to shape programs to meet each patient's capabilities and level of interest.

H-470.997 Exercise and Physical Fitness

(BOT Rep. K, A-66; Reaffirmed: CLRPD Rep. C, A-88; Reaffirmed: Sunset Report, I-98)

The AMA encourages all physicians to utilize the health potentialities of exercise for their patients as a most important part of health promotion and rehabilitation, and urges state and local medical societies to emphasize through all available channels the need for physical activity for all age groups and both sexes.

H-470.989 Physical Fitness and Physical Education

(CSA Rep. G, A-79; Reaffirmed: CLRPD Rep. B, I-89; Reaffirmation I-98)

Our AMA: (1) urges school boards, administrators and parents to provide physical education programs during elementary, junior high and senior high years; and (2) stresses that these programs be conducted by qualified personnel, be designed to teach health habits and physical skills, and be designed to instill a desire in the student for physical fitness that will carry over into adult life.

H-440.917 Increased Physical Activity for Most US Adults

(Res. 408, A-95)

The AMA endorses, in principle, the movement calling for every adult to accumulate in the course of each day 30 or more minutes of physical activity of moderate intensity; and urges physicians to review the consensus statement of the Centers for Disease Control and Prevention and the American College of Sports Medicine which extends the traditional concept of physical fitness to include intermittent cumulative physical activity and the scientific evidence on which this advice rests.

H-470.998 Youth Physical Fitness

(Res. 82, A-62; Reaffirmed: CLRPD Rep. C, A-88; Reaffirmed: Sunset Report, I-98)

The AMA and its state and local components should reemphasize their support of local school and college youth fitness programs, and the AMA believes that the health services phases of fitness programs should be carried out under medical supervision conducted in a manner determined by school authorities after medical consultation.

H-470.999 Youth Fitness

(BOT Rep. A-59; Reaffirmed: CLRPD Rep. C, A-88; Reaffirmed: Sunset Report, I-98)

The AMA (1) approves in principle the aims and objectives of the President's Council on Youth Fitness and the President's Citizens Advisory Committee on the Fitness of American Youth and urges its member physicians to cooperate in the promotion of properly developed and soundly conceived plans and programs for youth fitness, and (2) requests the constituent associations and their member local medical societies to work cooperatively with reputable professional and other ethical groups interested in the improvement of youth fitness.

H-170.999 Health Instruction and Physical Education in Schools

(BOT Res., A-60; Reaffirmed: CLRPD Rep. C, A-88; Reaffirmed: Sunset Report, I-98)

The AMA reaffirms its long-standing and fundamental belief that health education should be an integral and basic part of school and college curriculums, and encourages state and local medical societies to work with the appropriate health education officers and agencies in their communities to achieve this end.

H-470.975 Mandatory Physical Education

(Sub. Res. 1, I-88; Reaffirmation and Sunset Report, I-98)

The AMA continues its commitment to support state and local efforts to implement quality physical education programs for all students, including the handicapped, in grades kindergarten through twelve, including ungraded classes.

H-470.996 School and College Physical Education

(BOT Rep. I, A-69; Reaffirmed: CLRPD Rep. C, A-89; Reaffirmation I-98)

Our AMA encourages effective instruction in physical education for all students in our schools and colleges.

H-470.990 Promotion of Exercise Within Medicine and Society

(Res. 56, I-78; Reaffirmed: CLRPD Rep. C, A-89; Reaffirmation I-98)

Our AMA supports (1) education of the profession on exercise, including instruction on the role of exercise prescription in medical practice in its continuing education courses and conferences, whenever feasible and appropriate;

(2) medical student instruction on the prescription of exercise;

(3) physical education instruction in the school system; and

(4) education of the public on the benefits of exercise, through its public relations program.

H-25.995 Exercise Programs for the Elderly

(CSA Rep. C, I-83; Reaffirmed: CLRPD Rep. I-93-1)

The AMA recommends that physicians: (1) stress the importance of exercise for older patients and explain its physiological and psychological benefits; (2) obtain a complete medical history and perform a physical examination that includes exercise testing for quantification of cardiovascular and physical fitness as appropriate, prior to the specific exercise prescription; (3) provide appropriate follow-up of patients' exercise programs; and (4) encourage all patients to establish a lifetime commitment to an exercise program.

Nutrition

In education

H-150.993 Medical Education in Nutrition

(Sub. Res. 82, I-80; Reaffirmed: CLRPD Rep. B, I-90; Reaffirmed: CME Rep. 3, I-97)

The AMA recommends that instruction on nutrition be included in the curriculum of medical schools in the United States.

H-150.996 Nutrition Courses in Medicine

(Sub. Res. 66, I-77; Reaffirmed: CLRPD Rep. C, A-89; Reaffirmed: Sunset Report, A-00)

Our AMA recommends the teaching of adequate nutrition courses in elementary and high schools and that the LCME work toward enhancement of the teaching of nutrition in medical schools.

H-150.995 Basic Courses in Nutrition

(Sub. Res. 116, A-78; Reaffirmed: CLRPD Rep. C, A-89; Reaffirmed: Sunset Report, A-00)

Our AMA encourages effective education in nutrition at the undergraduate, graduate, and postgraduate levels.

And children

H-150.960 Improving Nutritional Value of Snack Foods Available in Primary and Secondary Schools

The AMA supports the position that primary and secondary schools should replace foods in vending machines and snack bars, which are of low nutritional value and are high in fat, salt and/or sugar, with healthier food choices which contribute to the nutritional needs of the students.

(Res. 405, A-94)

H-150.962 Quality of School Lunch Program

(Sub. Res. 507, A-93)

The AMA recommends to the National School Lunch Program that school meals be congruent with current U.S. Department of Agriculture/Department of HHS Dietary Guidelines.

H-60.972 Banning Food Commercials Aimed at Children

(Sub. Res. 220, I-91; Reaffirmed: Sunset Report, I-01)

It is the policy of the AMA to join with appropriate organizations, including the American Academy of Pediatrics, in educating the public about the adverse effects of food advertising aimed at children.

H-150.992 Nutritive Quality of Processed Foods

The nutritional quality of foods and beverages can be enhanced by the addition of specific nutrients. In the United States, the Recommended Dietary Allowances provide a goal for good nutrition and form a basis for quantitative considerations when improvement of the nutritive quality of foods is deemed desirable.

H-150.979 Fast Food

(Sub. Res. 123, A-86; Amended by Sunset Report, I-96)

The AMA encourages fast food restaurants to reduce the saturated fat content of their foods, as well as to offer low fat alternatives to highly saturated fat foods.

H-150.971 Food Labeling and Advertising

(BOT Rep. C, A-90; Reaffirmed: Sunset Report, I-00)

Our AMA believes that there is a need for clear, concise and uniform labeling on food products.

H-170.971 Management of Disorders of Cholesterol, Triglyceride, and Lipoprotein Metabolism

(CSA Rep. 6-A-94)

The AMA endorses the recommendations of the Report of the National Cholesterol Education Program Adult Treatment Panel II and encourages physicians to implement these recommendations in their medical practices.

Weight loss

H-150.969 Commercial Weight-Loss Systems and Programs

(CSA Rep. A, A-91; Reaffirmed: Sunset Report, I-01)

It is the policy of the AMA to (1) continue to cooperate with appropriate state and/or federal agencies in their investigation and regulation of weight-loss systems and programs that are engaged in the illegal practice of medicine and/or that pose a health hazard to persons to whom they sell their services; (2) continue to provide scientific information to physicians and the public to assist them in evaluating weight-reduction practices and/or programs; and (3) encourage review of hospital-based weight-loss programs by medical staff.

H-150.989 Weight Loss Clinics

(Res. 59, A-83; CLRPD Rep. I-93-1)

The AMA encourages any person considering participation in a weight loss program to first consult his or her regular attending physician, or any other independent physician, for a physical examination and an objective professional evaluation of the proposed weight loss program as it relates to the individual's physical condition.

H-150.975 Dangerous Health and Diet Books

(Res. 181, A-88; Reaffirmed: Sunset Report, I-98)

The AMA supports study of effective and appropriate ways in which to educate physicians and the American public about the dangers of various diets and health fads.

H-150.965 Eating Disorders

(Res. 417, A-92; Appended by Res. 503, A-98)

The AMA (1) adopts the position that overemphasis of bodily thinness is as deleterious to one's physical and mental health as is obesity; (2) asks its members to help their patients avoid obsessions with dieting and to develop balanced, individualized approaches to finding the body weight that is best for each of them; (3) encourages training of all school-based physicians, counselors, coaches, trainers, teachers and nurses to recognize unhealthy eating, dieting, and weight restrictive behaviors in adolescents and to offer education and appropriate referral of adolescents and their families for interventional counseling; and (4) participates in this effort by consulting with appropriate specialty societies and by assisting in the dissemination of available educational and counseling materials pertaining to unhealthy eating, dieting, and weight restrictive behaviors.

Other issues

H-245.991 Infant Formula Advertising

(Res. 64, A-90; Reaffirmed: Sunset Report, I-00)

Our AMA (1) adopts the policy that breast-feeding is the optimal form of nutrition for most infants; and (2) supports the concept that the parent's decision to use infant formula, as well as the choice of which formula, should be preceded by consultation with a physician.

H-245.993 Encouragement of Breast-Feeding by WIC Participants

(Sub. Res. 49, I-87; Reaffirmed: Sunset Report, I-97)

The AMA supports working with other interested organizations in actively seeking to promote increased breast-feeding by WIC recipients, without reduction in other benefits.

H-245.996 Infant Nutrition

(CSA Rep. D, A-80; Reaffirmed: CSA Rep. C, A-82; CLRPD Rep. B, I-90; Reaffirmed: Sub. Res. 210, A-94)

The AMA endorses (1) the revised policy statement of American Academy of Pediatrics urging pediatricians, particularly in developing countries, to encourage breast feeding of newborn infants wherever appropriate and to educate mothers about the superiority of breast milk as a source of infant nutrition, and working to curtail inappropriate formula promotional practices; and (2) the recommendations of the Geneva Conference on Infant and Young Child Feeding that deal with the appropriate marketing and distribution of infant formula and weaning foods.