

Welcome to the training workshop for *Eat Well & Keep Moving*, an innovative interdisciplinary health curriculum for fourth- and fifth-grade students. The complete workshop will last about 6 hours.

(Note to the presenter: Comments in parentheses are instructions to follow while giving the presentation. Do not read these comments to participants. This convention will be followed throughout the notes in this slide show.)

(Give participants a copy of the presentation, obtained by printing the PDF version of these slides from the Training 2 folder on this Web Resource.)

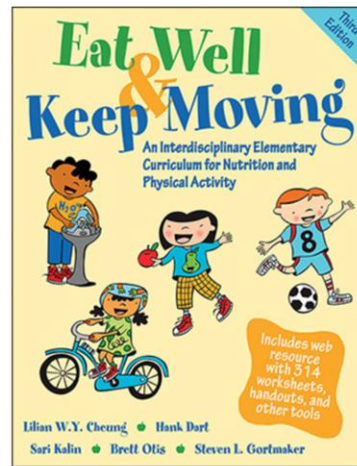
Overview of Workshop

- **Session 1: Introduction to *Eat Well & Keep Moving***
- **Session 2: The Good Life—Wellness**
- **Session 3: *Eat Well & Keep Moving* Principles of Healthy Living**
- **Session 4: The Five Food Groups and Nutrition Facts**
- **Session 5: The Safe Workout**
- **Session 6: Review of Classroom Lessons**

The workshop will begin with an introduction to the *Eat Well & Keep Moving* program. Then there will be sessions reviewing wellness, nutrition, and physical activity. The workshop will conclude with a session reviewing the program's classroom materials. The complete workshop should last about 6 hours.

What Is *Eat Well & Keep Moving*?

- A school-based nutrition and physical activity program for fourth- and fifth-grade students
- A school-wide program including classroom lessons, physical education lessons, cafeteria activities, staff wellness, and parent involvement



(Distribute the Eat Well & Keep Moving brochure from the Additional Resources folder on this Web Resource.)

Eat Well & Keep Moving is a program for fourth and fifth graders that focuses on nutrition and physical activity.

The program was first created under a grant from the Walton Family Foundation to the Harvard School of Public Health. The curriculum was implemented by elementary school teachers in the Baltimore City Public Schools in Maryland. Recommendations made by these teachers helped create the published version of *Eat Well & Keep Moving*, which was first published in 2001.

The Harvard School of Public Health updated the program in 2015 to incorporate the latest scientific recommendations and to build on the *Dietary Guidelines for Americans 2015*.

***Eat Well & Keep Moving* Health Goals: The Principles of Healthy Living**

- Make the switch from sugary drinks to water.
- Choose colorful fruits and vegetables instead of junk food.
- Choose whole-grain foods and limit foods with added sugar.
- Choose foods with healthy fat, limit foods high in saturated fat, and avoid foods with trans fat.
- Eat a nutritious breakfast every morning.
- Be physically active every day for at least an hour.
- Limit TV and other recreational screen time to 2 hours or less per day.
- Get enough sleep to give the brain and body the rest they need.



(Distribute the Getting Acquainted handout from the Additional Resources folder on the Web Resource, and ask participants to follow the instructions and fill in the table with others' signatures.)

(After teachers complete the handout or 5 minutes pass, whichever comes first, have them take their seats. Ask by show of hands how many people could have signed numbers 1 through 8 on the sheet.)

(Read the Principles of Healthy Living from the slide. Tell participants that throughout this workshop they will learn more about these important guidelines and how the guidelines can be used in their own lives as well as in the lives of their students.)

Eat Well & Keep Moving **Goals for Schools**

- **Low-cost implementation**
- **Integration into core subject areas**
- **Program that meets education standards**
- **School-wide links connecting**
 - Students
 - Teachers
 - Food service staff members
 - Parents

In designing the program for schools, these guiding principles were used:

- Keep the cost of implementation low.
- Integrate the lessons and promotions into core subjects such as math and language arts.
- Address education standards.
- Make school-wide linkages to connect students, teachers, food service staff members, and parents.

Research on *Eat Well & Keep Moving*

- **Fourth- and fifth-grade students in 14 Baltimore public schools**
- **Program designed to**
 - Increase fruit and vegetable consumption
 - Reduce saturated fat intake
 - Reduce TV watching
 - Increase moderate/vigorous physical activity
- **Classroom, food service, school-wide campaign, and community components**

Eat Well & Keep Moving was first designed and used in 14 Baltimore City Public Elementary Schools in Baltimore, Maryland. The program was designed to increase fruit and vegetable consumption, reduce saturated fat intake, get students to spend less time in front of the TV or computer screen, and get more physical activity into their daily routine. It was designed to be implemented in the classroom by classroom teachers, and there are also components designed to bring in the help and cooperation of food service and the community. There are also several school-wide activities that can be implemented as part of the program. We will go over these later in the workshop.

***Eat Well & Keep Moving* Has Been Evaluated and Shown to Be Effective**

Effective in:

- Reducing saturated fat intake
- Increasing fruit and vegetable intake
- Increasing fiber and vitamin C intake
- Reducing TV viewing

and it was:

- Well accepted by school staff and students

When the program was implemented and student and teacher feedback were carefully collected, it was found that the *Eat Well & Keep Moving* program was effective in (*read the bullets*)

SOURCE

Gortmaker, S.L., Cheung, L.W., Peterson, K.E., Chomitz, G., Cradle, J.H., Dart, H., Fox, M.K., Bullock, R.B., Sobol, A.M., Colditz, G., Field, A.E., & Laird, N. (1999). Impact of a school-based interdisciplinary intervention on diet and physical activity among urban primary school children: Eat well and keep moving. *Archives of Pediatric Adolescent Medicine* 153(9): 975-83.

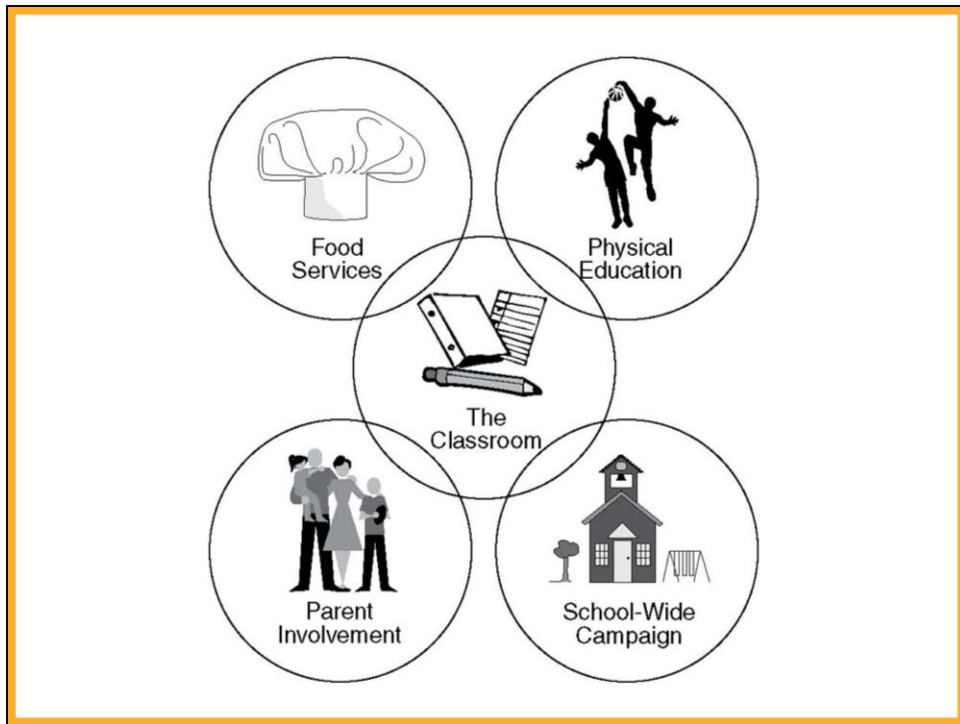
Eat Well & Keep Moving Acceptability

100% of responding teachers said they would teach the curriculum again.

“What impresses me most about this program is its integrative quality.... Principals, teachers, students, food staff, and parents benefit from increased knowledge and awareness of issues that are fundamental to improving one’s life.”

Principal, elementary school

All the teachers who used the program in those first years in Baltimore said they would teach the curriculum again. As one principal said (*read quote*)



The *Eat Well & Keep Moving* program consists of a number of different components that work together.

- Food service activities offer and promote healthful foods to students at breakfast and lunch.
- Classroom-based lessons and promotions focus on nutrition and physical activity.
- Physical education lessons complement and build on the classroom lessons.
- School-wide campaigns promote nutrition and physical activity topics.
- Parent activities provide numerous opportunities for parents to get involved in the program.
- A wellness program promotes wellness of school faculty and staff.

(*Optional comments:*) As you may know, our school—and all schools that participate in the National School Lunch Program—is required to have a School Wellness Policy that addresses nutrition education, school foods, staff wellness, and parent involvement. *Eat Well & Keep Moving* can play a central role in the implementation of our School Wellness Policy.

What Are the Benefits of Eating Well and Keeping Moving?

- **Eating well helps children grow, develop, and do well in school.**
- **Eating well reduces the risk of many chronic diseases.**
- **Being active reduces the risk of obesity, heart disease, some cancers, high blood pressure, diabetes, anxiety, and depression.**

What are some of the benefits of eating well and keeping moving?

- Eating well helps children grow, develop, and do well in school.
- Eating well and being physically active reduce the risk of major chronic diseases, like heart disease, diabetes, and some cancers.
- Being physically active can also help children deal with anxiety and depression.

Why Should We Be Interested in a Nutrition and Physical Activity Program for Children?

- **Obesity is a major risk factor for high blood pressure, diabetes, heart disease, stroke, and many types of cancer.**
- **The food industry in the U.S. spends more than \$1.8 billion per year on advertising to children.**
- **Children become progressively less active as they age.**
- **Over 1/3 of children in the United States are overweight or obese.**

Why should we all be interested in a program focusing on children's nutrition and physical activity?

From national data we know the following:

- Obesity is a major risk factor for high blood pressure, diabetes, heart disease, stroke, and many types of cancer.
- It is estimated that the food industry in the U.S. spends more than \$1.8 billion per year on advertising to children.* Many of the foods advertised are not very healthful choices.
- As children age, they become increasingly less active.** A child may be active in elementary school but become less and less physically active while moving into middle school and then into high school.
- Finally, the Institute of Medicine has declared that we are in the midst of a child obesity epidemic.*** In 2012, over 1/3 of children and adolescents in the United States were overweight or obese.****

SOURCES

*UCONN Rudd Center for Food Policy & Obesity. (2013). *Food Marketing to Youth*. Retrieved December 1, 2014, from

http://www.yaleruddcenter.org/what_we_do.aspx?id=4.

**Centers for Disease Control and Prevention. (2014). Adolescent and School Health: Physical Activity Facts. Retrieved December 1, 2014, from <http://www.cdc.gov/healthyyouth/physicalactivity/facts.htm>.

*** Institute of Medicine of the National Academies. (2013). Progress in Preventing Childhood Obesity. Retrieved December 1, 2014, from <http://www.iom.edu/Activities/Children/ProgChildObes.aspx>.

****Centers for Disease Control and Prevention. (2014). Adolescent and School Health: Childhood Obesity Facts. Retrieved December 1, 2014, from <http://www.cdc.gov/healthyyouth/obesity/facts.htm>.

The Health of Young People

Trends in Nutrition, Physical Activity, and Inactivity

Let's look more closely at how children and youth are doing across the United States with eating and activity habits.

Children Are At Risk! Trends in Nutrition

- **Too many sugary drinks!**
 - 27% of teens drink one or more soda a day
 - 19.4% drink two
 - 11.2% drink three or more
- **Children and youth still consume too much saturated fat**
- **Four out of five children do not eat enough fruits and vegetables**
 - 1/3 of children eat less than a serving of vegetables per day
 - Half of children eat less than a serving of fruit per day

Youth consumption of soft drinks and other sweetened beverages is on the rise in the United States. In 2013, 27 percent of teens drank one or more soda a day, 19.4 percent drank two or more, and 11.2 percent drank three or more.* Research suggests that consuming sugar-sweetened beverages is associated with excess weight gain in children and adults.**

National data show that saturated fat consumption is still too high in children and youth.*** Meanwhile, fruit and vegetable consumption is too low: while a high percentage of youth do consume at least some fruits and vegetables on a given day, about a quarter of youth did not consume any fruit on a given day. Less than 10% of youth did not consume any vegetables on a given day.****

SOURCES

*Kann, L., et al. (2013). Youth Risk Behavior Surveillance — United States. CDC. Retrieved on December 1, 2014, from <http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf>.

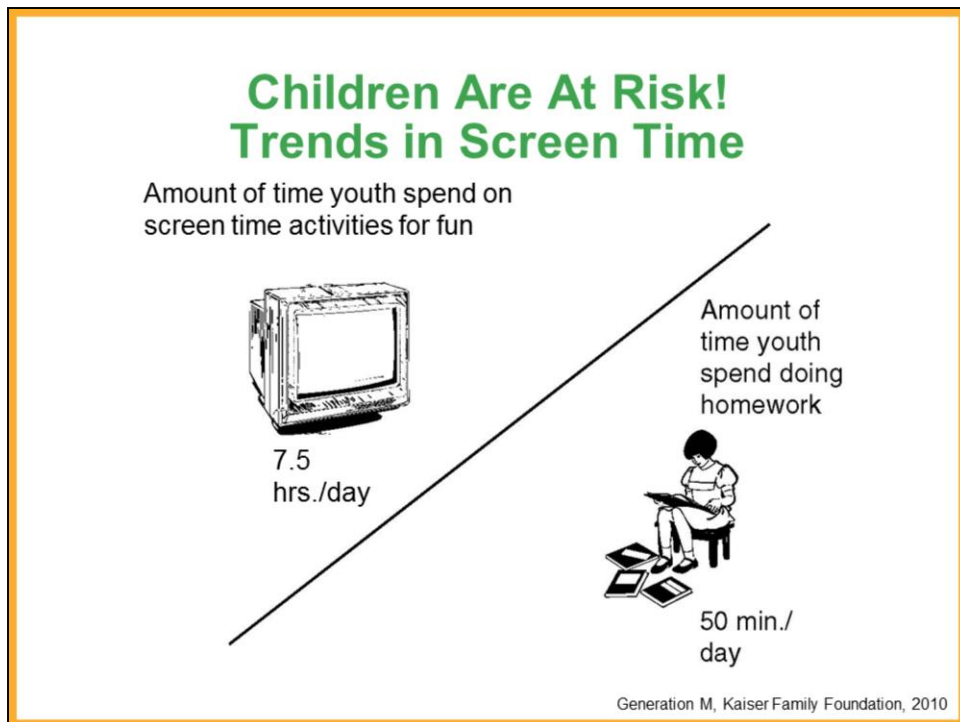
**Ebbeling, et al. (2012). A Randomized Trial of Sugar-Sweetened Beverages and Adolescent Body Weight. *New England Journal of Medicine* 367(15): 1407-16.

**Malik, et al. (2010). Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk. *Circulation* 121: 1356-64.

***Ervin, R., & Ogden, C.L. (2013). Trends in Intake of Energy and Macronutrients in Children and Adolescents From 1999–2000 Through 2009–2010. Retrieved December 1, 2014, from

<http://www.cdc.gov/nchs/data/databriefs/db113.htm>.

****Nielsen, S., Rossen, L., Harris, D., & Ogden, C.L. (2014). Fruit and Vegetable Consumption of U.S. Youth, 2009–2010. Retrieved December 1, 2014, from <http://www.cdc.gov/nchs/data/databriefs/db156.htm>.



Did you know that a recent national survey of students in grades 3-12 found that, on average, students spent more than 7 and a half hours a day using media (more than any other activity, except maybe sleep)?* Contrast that with the 50 minutes a day they spent doing homework (the average for students in grades 7-12), and the 43 minutes a day they spent reading (the average for students in all grades).

Researchers think that increases in TV viewing over the past 30 years are likely contributing to the increase in child overweight.** The most likely link between television and weight gain has to do with diet quality. We're not just talking about how people snack while they watch TV. Think about what you see on TV advertisements, especially during children's programs. Very often snack foods and sugary sweets and drinks are made to seem very exciting for kids as well as adults. There is evidence that watching food advertisements makes kids more likely to ask their parents for the foods they see advertised—and makes parents more likely to buy the foods.*** TV food ads have also been tied to drinking too much soda and eating too much fast food and sugary and salty snacks; they have also been tied to eating too few fruits and vegetables.****

SOURCES

*Kaiser Family Foundation. (January 2010). Generation M Squared: Media in the lives of 8-18 year olds. Retrieved December 3, 2014, from <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/generation-m-media-in-the-lives-of-8-18-year-olds-report.pdf>.

**Ludwig, D.S., & Gortmaker, S.L. (2004). Programming obesity in childhood. *Lancet* 364(9430): 226-7.

**Harris, J.L., Bargh, J.A., & Brownell, K.D. (2009). Priming effects of television food advertising on eating behavior. *Health Psychol.* 28(4): 404-13.

***Coon, K.A., & Tucker, K.L. (2002). Television and children's consumption patterns: A review of the literature. *Minerva Pediatr.* 54(5): 423-36.

***Kaiser Family Fountain. (2007). *Food for Thought: Television Food Advertising to Children in the United States*. Retrieved December 5, 2014, from <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/7618.pdf>.

****Falbe, J., et al. (2014). Longitudinal relations of television, electronic games, and digital versatile discs with changes in diet in adolescents. *Am J Clin Nutr.* 100(4): 1173-81.

Children Are At Risk! Trends in Physical Activity

- **Only 4% of elementary schools provide daily PE for all grades.**
- **23% of children do not participate in any free time physical activity in a typical week.**
- **Participation in organized physical activity is declining: Children ages 6-12 who played sports regularly fell from 44.5% in 2008 to 40% in 2013.**

Only 4% of elementary schools provide daily physical education (or its equivalent in minutes per week) for all grades.* And sadly, students are not spending nearly enough time being active outside of school hours. A national survey of children aged 9-13 (and their parents) fielded by the Centers for Disease Control and Prevention found that 23% of children did not participate in any free time physical activity during a typical week.** Participation in organized physical activity is declining: Children ages 6-12 who played sports regularly fell from 44.5% in 2008 to 40% in 2013.

SOURCES

*IOM. (2012). Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation. Retrieved December 5, 2014 from <http://www.iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx>.

**Centers for Disease Control and Prevention. (2014). Adolescent and School Health: Physical Activity Facts. Retrieved December 17, 2014 from <http://www.cdc.gov/HealthyYouth/physicalactivity/facts.htm>.

***The Aspen Institute: Project Play. (2014). Facts: Sports Activity and Children. Retrieved December 17, 2014 from <http://www.aspenprojectplay.org/the-facts>.

Children Are At Risk! Trends in Overweight

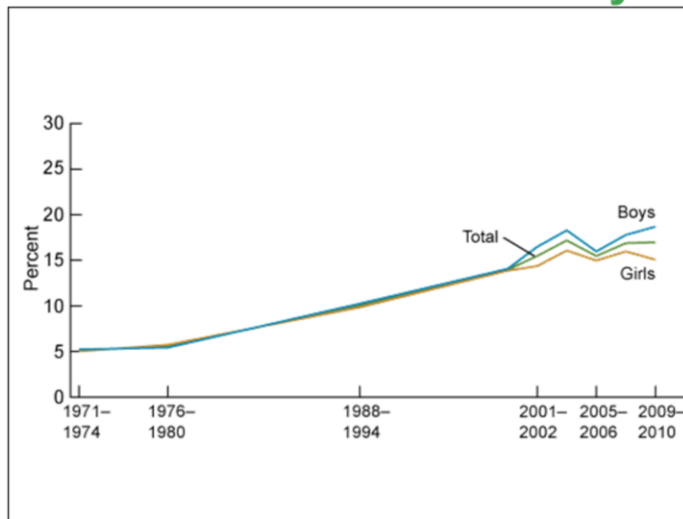
- **Childhood obesity has more than doubled in children and quadrupled in adolescents in the past 30 years.**
- **In 2012, more than one third of children and adolescents were overweight or obese.**

(Read the slide.)

SOURCE

Centers for Disease Control and Prevention. (2014.) Adolescent and School Health: Childhood Obesity Facts. Retrieved January 7, 2015, from <http://www.cdc.gov/healthyyouth/obesity/facts.htm>.

Children Are At Risk! Trends in Child and Adolescent Obesity



Here is a chart showing the dramatic rise in obesity among children and adolescents aged 2-19 since the 1970s. Focusing specifically on children between the ages of 6-11 years old, the percentage of kids who are overweight has quadrupled since the 1970s: in 1971-1974, 4% were overweight; in 2009-2010, 18% were overweight. The rate of overweight has more than tripled in adolescents aged 12-19, from 6% in 1971-1974, to 18.6% in 2009-2010.

SOURCE

Centers for Disease Control and Prevention. National Center for Health Statistics. Prevalence of Obesity Among Children and Adolescents: United States, Trends 1963-1965 Through 2009-2010. Retrieved on January 5, 2014, from

http://www.cdc.gov/nchs/data/hestat/obesity_child_09_10/obesity_child_09_10.htm

Health Consequences of Overweight

Overweight and obese people are at increased risk for the following:

- **Type 2 diabetes**
- **Heart disease**
- **Depression**
- **High blood cholesterol**
- **Premature death**
- **Stroke**
- **Hypertension**
- **Asthma**
- **Some cancers**

Overweight and obesity in adults is linked to a number of chronic diseases. *(Read a few from the slide.)* And children are now experiencing adult-type diseases due to overweight. Type 2 diabetes, previously considered an adult disease, has increased dramatically in children and adolescents. In the last two decades, type 2 diabetes has been reported among U.S. children and adolescents with increasing frequency.*

Obese children are more likely to have high blood pressure and high cholesterol, as well as increased risk for impaired glucose tolerance, insulin resistance, and type 2 diabetes. In one study, 70% of obese children had at least one CVD risk factor, and 39% had two or more.**

Obese children are more likely to become obese adults.** Overweight adults with multiple risk factors are at a greater risk for developing cardiovascular disease and diabetes. These findings highlight the importance of prevention and treatment of overweight in children and adolescents.

SOURCES

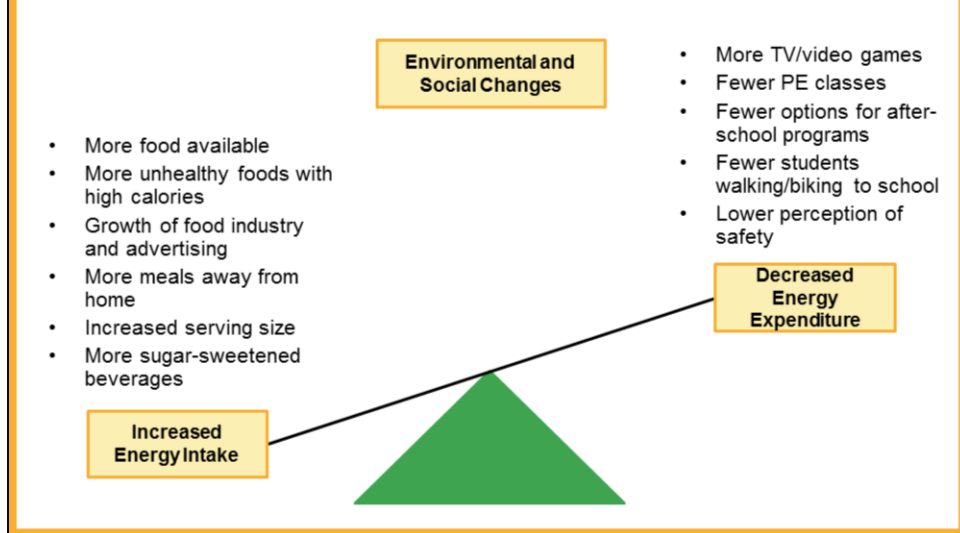
*Center for Disease Control and Prevention. (2014). Diabetes in Youth.

Retrieved January 7, 2015, from <http://www.cdc.gov/diabetes/risk/age/youth.html>.

**Center for Disease Control and Prevention. (2012). Basics about Childhood Obesity. Retrieved January 7, 2015, from <http://www.cdc.gov/obesity/childhood/basics.html>.

Freedman, D.S., Mei, Z., Srinivasan, S.R., Berenson, G.S., & Dietz, W.H. (2007.) Cardiovascular risk factors and excess adiposity among overweight children and adolescents: the Bogalusa Heart Study. *J Pediatr.* 150(1): 12-7.e2.

What Is Causing This Epidemic of Poor Lifestyle?



What is causing this epidemic? Body weight is maintained by balancing energy intake (food) with energy output (physical activity). If you put more in than goes out you gain weight. Small imbalances add up over a long period of time. A person's genetic makeup contributes to their body size and composition and makes some people more likely to be larger. However, because obesity has increased so rapidly we know its origin is not genetic. The gene pool did not change in the course of 20 years.

What changed is our environment and lifestyle. Culture can also affect these patterns, but poor dietary habits, increased consumption of calorie-dense foods, and fewer opportunities for physical activity contribute to the problem.

(Review the bullets on each side of the balance. This is a good slide to provoke discussion about lifestyle changes and the fact that lifestyles of children today are different from those of 30 years ago, on which many listeners will be able to report from personal experience. Below are some additional details that might be useful to add while reading the bullets.)

Americans spend about half of their food budget and consume about 1/3 their daily energy intake on meals prepared outside of the home.

In the 1950s Coca-Cola packaged only 6.5-ounce bottles; single-serving containers expanded to 12 ounces and now 20 ounces. At fast-food restaurants, larger sized meals can be purchased for a small additional fee; meals are "super sized".*

Advertising directly affects food choices. The food industry spends \$1.8 billion

dollars annually on marketing targeted to young people. The overwhelming majority of these ads are for unhealthy products, high in calories, sugar, fat, and/or sodium. On television alone the average U.S. child sees approximately 13 food commercials every day, or 4,700 a year; and teens see more than 16 per day, or 5,900 in a year. Additionally, companies continue to find new and creative ways to reach children through social media channels, often blurring the line between content and advertising.** In 2010, McDonald's alone maintained 13 different websites that attracted 365,000 unique child visitors and 294,000 unique teen visitors per month.***

SOURCES

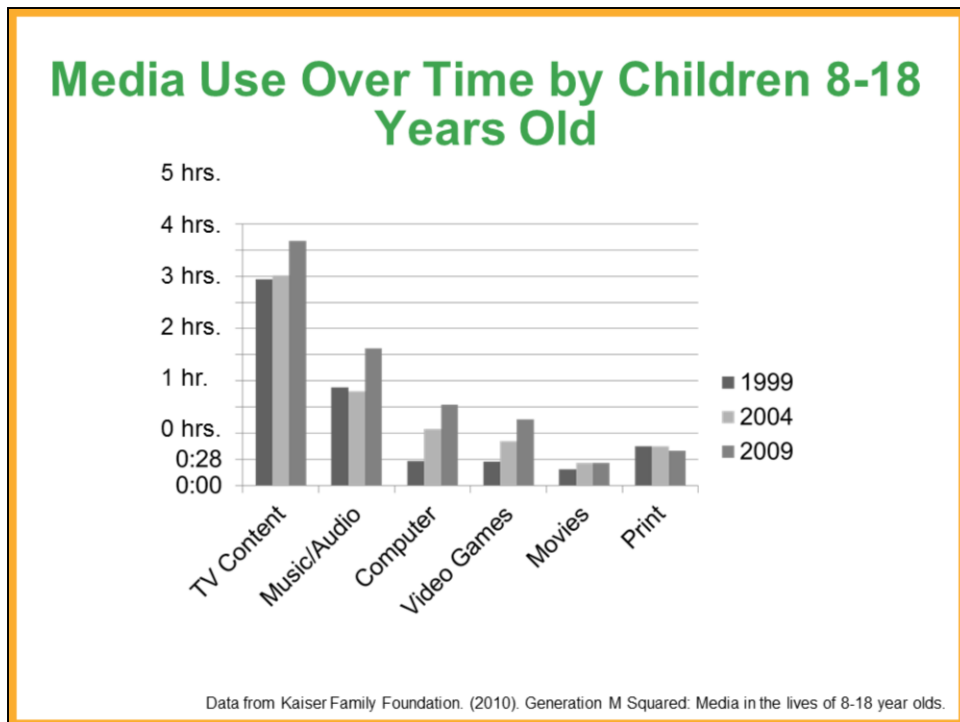
*Nestle, M., & Jacobson, M.F. (2000). Halting the obesity epidemic: A public health policy approach. *Public Health Reports* 115: 12-24.

**UCONN Rudd Center for Food Policy & Obesity. (2013). *Food Marketing to Youth*. Retrieved December 1, 2014, from http://www.yaleruddcenter.org/what_we_do.aspx?id=4.

***Yale Rudd Center for Food Policy & Obesity. (2013). *Fast Food F.A.C.T.S., Food Advertising to Children and Teens Score*. Retrieved January 6, 2015, from http://www.fastfoodmarketing.org/media/FastFoodFACTS_report.pdf

What Does Screen Time and Sugary Drink Consumption Have to Do With It?

Let's take a closer look at two factors that are likely to be contributing to the obesity epidemic in youth: an increase in recreational screen time (especially in TV viewing) and an increase in consumption of soda and other sugary drinks.



Media, from traditional television to newer technologies, are a dominant force in children's lives. According to one study, the average 8- to 10-year-old in the U.S. spends nearly 8 hours a day with a variety of different media, and older children and teenagers spend over 11 hours per day. Having a TV set in a child's bedroom increases these totals even more.*

(Point to the chart.) The media landscape is constantly changing. Nearly all children and teenagers have Internet, and one-third have access in their own bedroom. Computer time accounts for up to 1.5 hours per day, half of which is spent in social networking, playing games, or viewing videos. Although TV remains the predominant medium, nearly one-third of TV programming is viewed on alternative platforms (computers, tablets, or smartphones).**

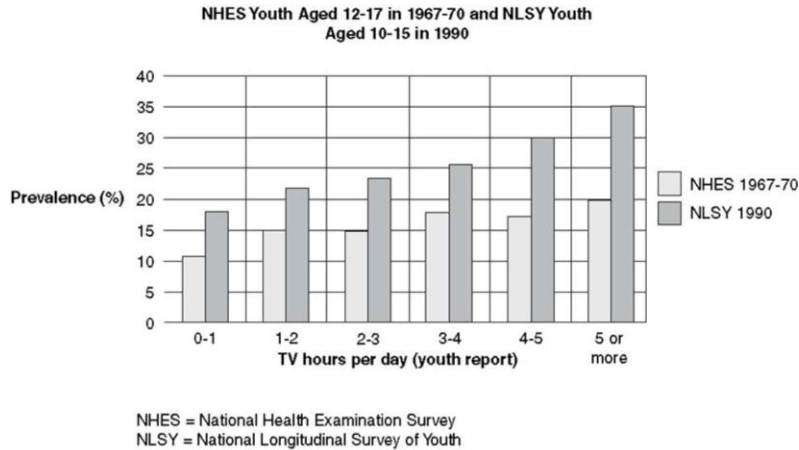
SOURCES

*Kaiser Family Foundation. (2010). Generation M Squared: Media in the lives of 8-18 year olds. Retrieved December 3, 2014, from <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/generation-m-media-in-the-lives-of-8-18-year-olds-report.pdf>.

**American Academy of Pediatrics. (2013). Policy Statement: Children, Adolescents, and the Media. Retrieved January 15, 2015, from

<http://pediatrics.aappublications.org/content/132/5/958.full#ref-1>

Prevalence of Obesity by Hours of TV per Day



Data from W.H. Dietz and S.L. Gortmaker, 1985, "Do we fatten our children at the television set? Obesity and television viewing in children and adolescents," *Pediatrics* 75: 807-812.

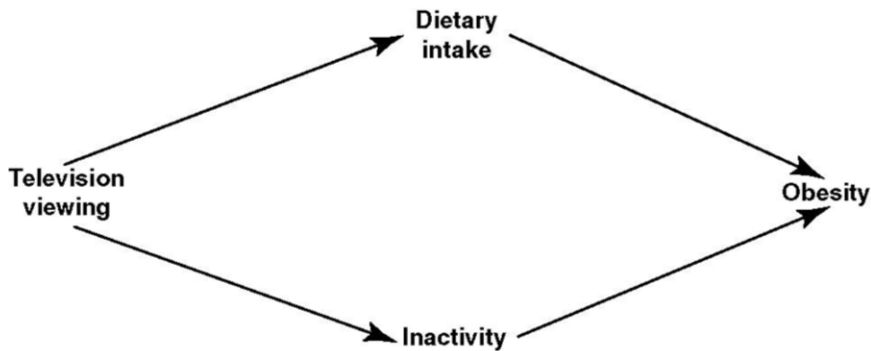
This graph illustrates that there is actually a correlation between obesity and TV viewing. (*Familiarize teachers with the axes.*) The data from both surveys indicate that youth who watch more TV are at greater risk for obesity. (*Point out the difference in obesity prevalence for the 0-1 and 5 or more hours groups.*)

SOURCES

Dietz, W.H., & Gortmaker, S.L. (1985). Do we fatten our children at the television set? Obesity and television viewing in children and adolescents. *Pediatrics* 75(5): 807-12.

Gortmaker, S.L., Must, A., Sobol, A.M., Peterson, K., Colditz, G.A., & Dietz, W.H. (1996). Television viewing as a cause of increasing obesity among children in the United States, 1986-1990. *Arch Pediatr Adolesc Med.* 150(4): 356-62.

Hypothesized Impact of Television Viewing on Obesity



Why does TV viewing have an impact on overweight? Researchers suggest some possible mechanisms. First, watching television may displace physical activity. Think about it—when you’re sitting down in front of the TV, perhaps there’s something more active that you’re *not* doing, like talking a walk, vacuuming the floor, or playing with your kids. TV watching may also slow down a person’s metabolic rate while they are watching; when you’re watching TV, usually you’re not moving around very much, or even using your brain very much. So you’re burning less fuel, fewer calories, and that can also contribute to overweight.

The most likely link between television and weight gain has to do with diet quality. We’re not just talking about how people often snack while they watch TV. Think about what you see on TV advertisements, especially during children’s programs. Very often snack foods and sugary sweets and drinks are made to seem very exciting for kids as well as adults. Children and teens see on average 12-16 TV ads a day for products generally high in saturated fat, sugar, or sodium.* There is evidence that watching food advertisements makes kids more likely to ask their parents for the foods they see advertised—and makes parents more likely to buy the foods. TV food ads have actually been tied to drinking too much soda and eating too much fast food and sugary and salty snacks; they have also been tied to eating too few fruits and vegetables.

SOURCES

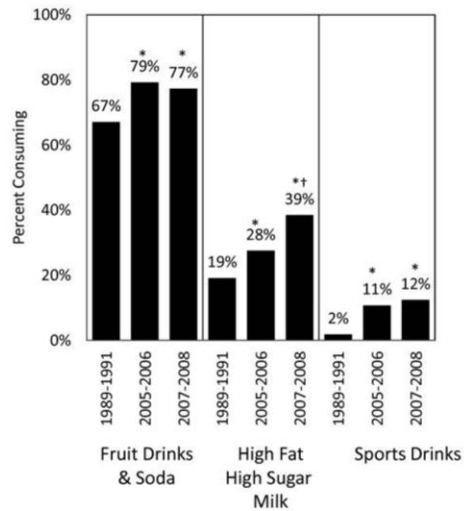
Falbe, J., et al. (2014). Longitudinal relations of television, electronic games, and digital versatile discs with changes in diet in adolescents. *Am J Clin Nutr.* 100(4): 1173-81.

Ludwig, D.S., & Gortmaker, S.L. (2004). Programming obesity in childhood. *Lancet* 364(9430): 226-7.

Coon, K.A., & Tucker, K.L. (2002). Television and children's consumption patterns: A review of the literature. *Minerva Pediatr.* 54(5): 423-36.

*Powell, L.M., Harris, J.L., & Fox, T. (2013). Food marketing expenditures aimed at youth: Putting the numbers in context. *Am J Prev Med.* 45(4): 453-61.

Beverage Intake Among School-Aged Children in the U.S., 1989-2008



As you can see from this chart, consumption of fruit drinks and soda remains high, and consumption of high-fat, high-sugar milk (such as chocolate milk) and sports drinks is increasing.

SOURCE

Lasater, G., Piernas, C., & Popkin, B.M. (2011). Beverage patterns and trends among school-aged children in the US, 1989-2008. *Nutr J.* 10: 103.

Sugar-Sweetened Beverage Consumption and Overweight

- **Sugar-sweetened beverages contribute to childhood obesity incidence and to adult obesity and type 2 diabetes.**
- **Reducing intake of sugar-sweetened beverages can reduce overweight among youth.**

Studies have demonstrated a strong link between sugar-sweetened beverage consumption and childhood obesity. One study found that middle school students who increased their consumption of soft drinks also increased their chance of becoming obese over the 18-month study. For each additional serving consumed per day over the baseline intake, the odds of obesity increased 60%.* Sugar-sweetened beverage consumption has also been linked to weight gain and diabetes incidence in adults.**

Reducing or avoiding empty calories from sugar-sweetened beverages may help with weight control: A school-based randomized controlled trial found that reducing the intake of sugar-sweetened beverages reduced overweight among youth after a 1-year intervention.*** Another study found that when teenagers reduced their sugar-sweetened beverage consumption by replacing sugar-sweetened beverages with non-caloric beverages, overweight teenagers lost weight.****

SOURCES

*Ludwig, D., Peterson, K., & Gortmaker, S. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: A prospective, observational analysis. *Lancet* 357: 505-8.

**Mozaffarian, D., Hao, T., Rimm, E.B., Willett, W.C., & Hu, F.B. (2011). Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med.* 23;364(25): 2392-404.

***Ebbeling, C.B., Feldman, H.A., Chomitz, V.R., Antonelli, T.A., Gortmaker, S.L., Osganian, S.K., & Ludwig, D.S. (2012). *N Engl J Med.* 367(15): 1407-16.

****de Ruyter, J.C., Olthof, M.R., Seidell, J.C., & Katan, M.B. (2012). A trial of sugar-free or sugar-sweetened beverages and body weight in children. *N Engl J Med.* 367(15): 1397-406.

Turning the Tables: Why Schools Need to Be Part of the Solution!

What can we do to reverse the trends we've just discussed? Why do schools need to be part of the solution?



Physical activity and eating behaviors are clearly individual choices. However, they are clearly influenced by the environment we live in, as well as policies, cultural norms, and lifestyles.

Most interventions that are aimed at getting people to eat healthy food and be physically active focus on changing individual behaviors. They educate people—give people the facts (What is healthy eating? Why is it important? People join health clubs, weight-loss programs, get a personal trainer.). These types of interventions give people an opportunity to practice healthy choices with the hopes that they will change their habits and incorporate healthy eating and activity into their everyday lives. In most cases this doesn't work. Fifty percent of the people who start an exercise program quit after 6 months.

As the U.S. continues to fight an obesity epidemic, scientists have begun to realize that we need to take a public health approach to encourage people to eat well and keep moving and to prevent obesity. We need to create environments and enact policies that support healthy lifestyles at home, in school, and in the community. Then we need to encourage people to LIVE healthy lifestyles by increasing their routine physical activity, walking to school, taking the stairs, watching less TV, and drinking water instead of soda.

We need to encourage these behaviors in children—so that we help them establish life-long health habits.

This approach has already seen success in tackling other public health problems, like smoking.

SOURCE

Nestle, M., & Jacobson, M.F. (2000). Halting the obesity epidemic: A public health policy approach. *Public Health Reports* 115: 12-24.

Surgeon General's Recommendation: School-Based Action

A comprehensive wellness plan that includes effective health education for all.

- A sequential health education curriculum, a school wellness policy, professional development for teachers and staff, partnerships with families, and external community members
- Nutrition: Ensure availability of healthy foods at every eating occasion at school, promote healthy choices, limit vending machine access, provide adequate time to eat meals, ensure availability of water throughout the day
- Physical Activity: Daily PE, recess, extracurricular PA opportunities, active transportation programs, community use of facilities for out of school time hours

In 2001, the Surgeon General of the United States published a report on the epidemic of obesity and the long-term potential effects on the health of our citizens. The report made recommendations about what can be done to help reduce and prevent overweight in children and young people in the school setting. In 2010, the Surgeon General expanded upon this initial report, emphasizing the importance for schools to establish a comprehensive wellness plan that includes effective health education for all.* The plans should include (*Read bullets.*)

The Institute of Medicine, in 2005, also called for schools to play a crucial role in preventing child obesity, by providing “a consistent environment that is conducive to healthful eating behaviors and regular physical activity.”**

SOURCES

*U.S. Department of Health and Human Services, Office of the Surgeon General. (2010). *Surgeon General's Vision for a Healthy and Fit Nation: Creating Healthy Schools*. Retrieved December 17, 2014, from <http://www.surgeongeneral.gov/initiatives/healthy-fit-nation/obesityvision2010.pdf>

**Institute of Medicine of the National Academies. (2005). *Preventing Child*

Obesity: Health In The Balance. Washington, DC: The National Academies Press.

Healthy Eating and Physical Activity Are a Critical Part of Learning and Achievement

- Brain development and function require an adequate supply of nutrients.
- Eating breakfast increases academic test scores, daily attendance, concentration, and class participation.
- Children learn through movement.
- Physical activity increases alertness.
- Schools that offer intensive physical activity programs see no negative effects on standardized academic achievement scores even when time for physical education is taken from the academic day.
- Children spend more time reading and doing homework when parents set limits on TV viewing and other recreational screen time.

(Read the slide title and read bullets.) The finding on intensive school physical activity programs (*the next to the last bullet*) disputes the concerns of school administrators that spending more time on physical education will interfere with academic performance.

SOURCES

Center on Hunger, Poverty, and Nutrition Policy. (1995). *Statement on the link between nutrition and cognitive development in children*. Medford, MA: Tufts University School of Nutrition.

Meyers, A.F., et al. (1989). School breakfast program and school performance. *American Journal of Diseases of Children* 143: 1234-9.

Food Research and Action Center. (2014). Breakfast for learning. Retrieved December 17, 2014, from <http://frac.org/wp-content/uploads/2009/09/breakfastforlearning.pdf>.

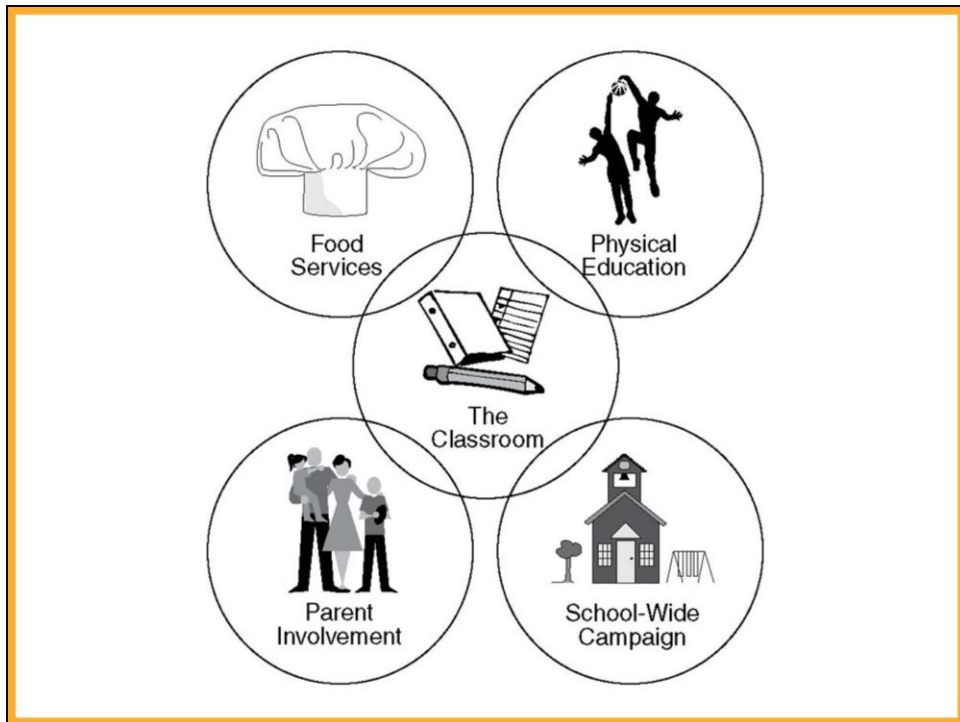
Pollitt, E., Leibel, R.L., & Greenfield, D. (1981). Brief fasting, stress, and cognition in children. *American Journal of Clinical Nutrition* 34: 1526-33.

Sallis, J.F., McKenzie, T.L., Kolody, B., Lewis, M., Marshall, S., & Rosengard, P. (1999). Effects of health-related physical education on academic achievement: Project SPARK. *Res Q Exer Sport* 70(2): 127-34.

Trudeau, F., & Shephard, R.J. (2008). Physical education, school physical activity, school sports and academic performance. *Int J Behav Nutr Phys Act.* 5: 10.

Wiecha, J.L., Sobol, A.M., Peterson, K.E., & Gortmaker, S.L. (Sept.-Oct. 2001). Household television access: Associations with screen time, reading and homework among youth. *Ambulatory Pediatrics* 1(5): 244-51.

Vandewater, E., Bickham, D., & Lee, J. (2006). Time Well Spent? Relating Television Use to Children's Free-Time Activities. *Pediatrics* 117(2): e181-e191.



Now that we've talked about the need for schools to get involved to reverse these worrisome nutrition and physical activity trends, let's take a brief look at each component of *Eat Well & Keep Moving*, so we can get a better understanding of *Eat Well & Keep Moving's* whole-school approach.

Faculty and Staff Wellness

The program offers the opportunity to learn more about nutrition, physical activity, stress management, and overall health.

The staff wellness program offers teachers and food service staff members the opportunity to learn about and get in touch with their own health and well-being.

Surveys help determine the health issues teachers and staff members are most interested in, and wellness sessions are designed with their responses in mind.



Eat Well & Keep Moving uses the cafeteria as a learning lab for nutrition. The cafeteria not only reinforces the messages learned in the classroom but also provides students with the opportunity to put their knowledge into practice.

With many communities already working to place healthful choices in schools, one focus of *Eat Well & Keep Moving* is to promote these choices to students. Unfortunately, putting healthy choices on menus doesn't mean children will eat them. The healthy foods must be marketed to students.

One way of promoting healthful choices is the set of Eat Well cards.

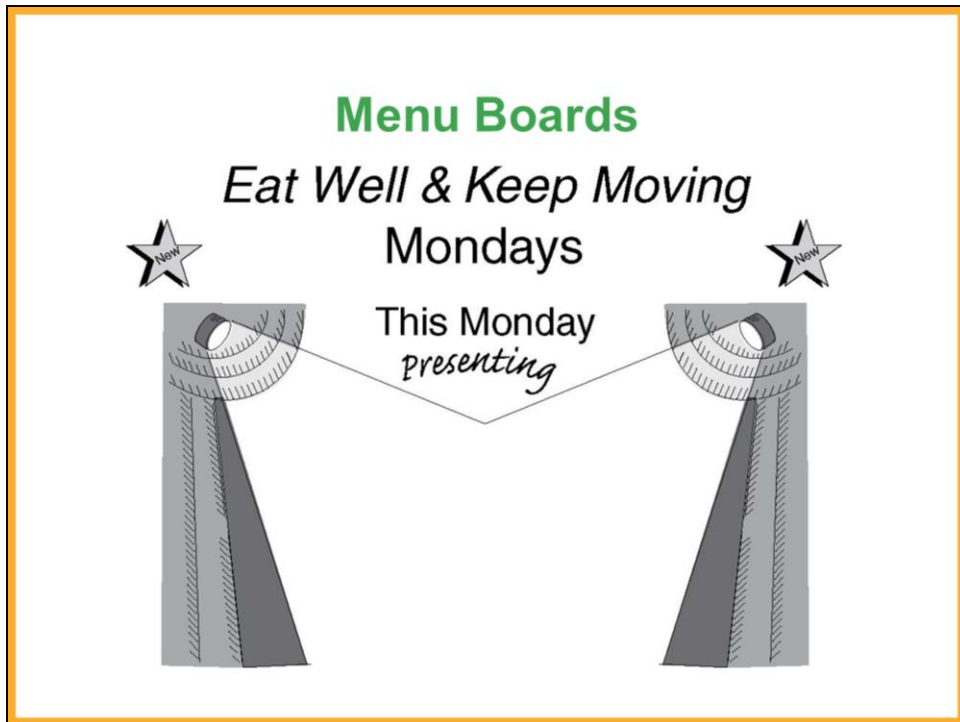
Eat Well Card: Stir-Fry With Healthy Oils!



Promotional materials, such as these Eat Well cards, provide an important link between the cafeteria and the classroom. These cards highlight foods (especially fruits, vegetables, and whole grains) served in the lunchroom and promote student discussion on the days the particular items are served.

This approach piques the students' interest in trying foods (particularly vegetables) served in the cafeteria.

In addition to being placed on the cafeteria line, Eat Well cards are used by teachers in the classroom. Linking the cafeteria to the classroom is very important to get students to eat well.



In Baltimore, *Eat Well & Keep Moving* chose Fridays to heighten student awareness that healthy food choices taste good.

The menu boards highlight a different dish each week and are coordinated with Eat Well card presentations in the classroom. Such an effort ensures that the students receive a consistent, weekly message encouraging them to try the healthy offerings the food service prepares.

The Classroom: Lessons on Nutrition and Physical Activity

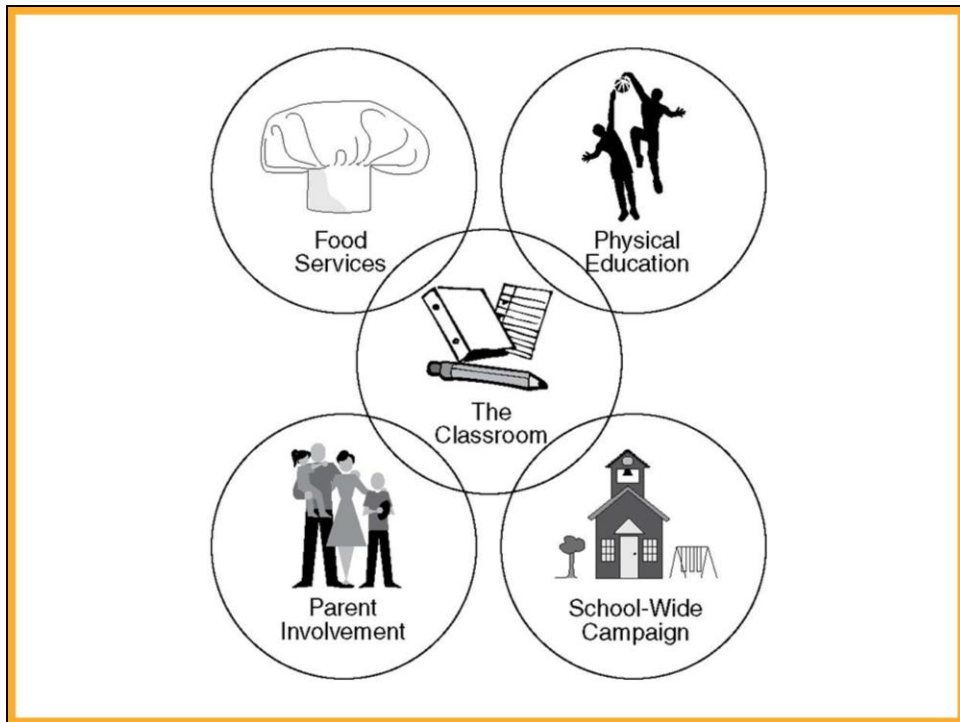
- **28 lessons**
- **Teacher friendly**
- **Manageable teacher training**
- **Format familiar to educators**
- **Adaptable to all students**
- **Lessons meet education standards**

Staff from the Harvard Department of Curriculum and Instruction played a major role in developing the classroom materials for *Eat Well & Keep Moving*. The third edition contains 28 classroom lessons—14 each for both the fourth and the fifth grades.

These lessons can fit into the social living component of the comprehensive health curriculum as well as into core subjects such as math, language arts, social studies, and science.

The lessons were designed to

- be teacher friendly,
- contain a substantial amount of reference and resource material,
- require a manageable amount of teacher training,
- be in a format familiar to educators,
- encourage the use of critical thinking and cooperative learning, and
- meet education standards.



The classroom activities make valuable links to the other components of *Eat Well & Keep Moving*.

Students learn in the classroom about the new menu items available in the cafeteria *before* they experience them.

Physical education lessons in the gym include nutrition concepts such as getting 5 or more servings of fruits and vegetables each day and healthy snacking.

Bulletin boards throughout the school and cafeteria promote healthy eating tips as part of a school-wide campaign.

Additionally, parents learn about the issues taught to their children through newsletters and programs featuring *Eat Well & Keep Moving* tips.

Parent Involvement

- **Parent newsletter**
- **Parent Fun Nights (at school) focused on healthy eating**
- **Community health coalition**
 - Cooking and nutrition classes
 - Walking programs

Parents are vital in shaping children's behavior. What children learn at school should be reinforced at home.

Eat Well & Keep Moving can help foster parent involvement by organizing parent nights at school with their children and printing information in parent newsletters.

It can also help schools form a community health coalition that offers services and programs to parents.

Examples of organizations that offered programs to parents in the Baltimore pilot are the Maryland Cooperative Extension, Maryland Food Committee, American Cancer Society.

School-Wide Promotional Campaigns

- **Get 3 At School and 5+ A Day**
- **Freeze My TV**
- **Class Walking Clubs**

One way to mobilize children to take positive action is to make learning and doing *fun*.

Therefore, *Eat Well & Keep Moving* uses a number of school-wide promotional campaigns that provide students a fun way to put their learning into practice.

These are the program's largest promotions, and each campaign is an extension of classroom lessons:

- Get 3 At School and 5+ A Day, which promotes eating fruits and vegetables, uses graphing and math skills.
- Freeze My TV helps students reduce the total number of hours they spend on TV and other screen time through graphing and journal writing (which use math and language arts skills).
- The Class Walking Clubs promotion has students use geography and map skills.



Questions?

Any questions?

Let's take a 10-minute break. When you return, we will start a session on wellness.