

Exploring Essential Components: Physical Activity, Nutrition, and the Young Adolescent

- National Data
- Children, Adolescents, and School
- Child Nutrition Act and Resources



For the students that are before us each day, there is no better time than now to develop a school climate that is safe, welcoming, and emphasizes wellness and health. Too often, though, health and wellness take a back seat to the demands of curriculum and calendar. But health and wellness, especially in the forms of good nutrition, physical activity, and safety are as necessary for student success in the middle school as academic challenge, knowledgeable teachers, and high standards.

To understand the role of physical activity and nutrition in young adolescent health, development, and ability to learn, it is helpful to look at the following:

1. National data on obesity and overweight
2. The impact of physical activity and nutrition on adolescent growth and learning in school
3. Current legislation and resources

The numbers



- 64% of U.S. population overweight or obese
- Obesity soon to be #1 preventable cause of death
- \$100 billion in health care costs annually
- 300,000 deaths annually

American Obesity Association. Advocacy Updates. 2006.



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So, what do we know? The numbers are startling.

- 64% of the United States' population is deemed overweight or obese.
- Overweight and obesity are on the verge of surpassing smoking as the #1 preventable cause of death, according to the American Obesity Association.
- Fueled by processed foods and increased portion sizes, unhealthy and sedentary lifestyles result in \$100 billion in health care costs and 300,000 deaths annually.

Obesity and overweight are a national epidemic.

Behavioral Risk Factor Surveillance System (BRFSS)

- Body Mass Index – BMI
- BMI > 30 = obese
- Woman: 5'4", 165 lbs., overweight
- Man: 6', 225 lbs., obese

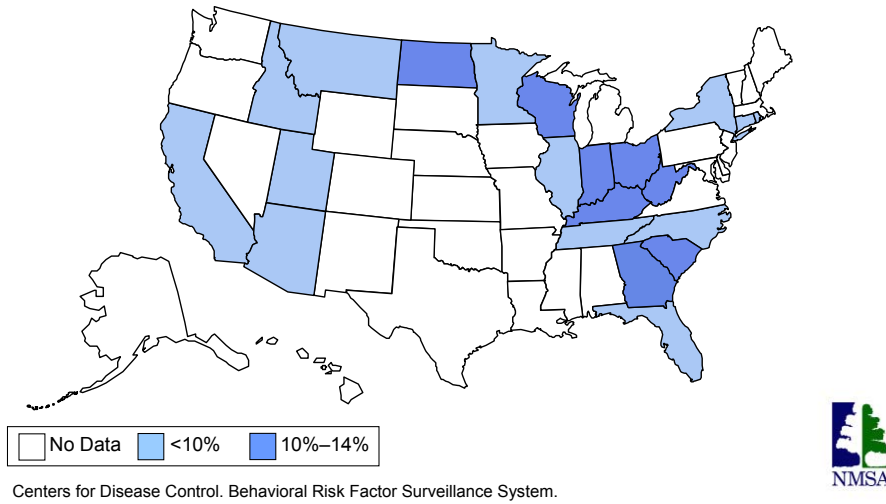


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The Center for Disease Control and Prevention at the Federal Department of Health and Human Services has been collecting and analyzing data regarding factors that influence healthy living for many years. One of the tools that the CDC has been using since 1991 is the Behavioral Risk Factor Surveillance System, or BRFSS. Among the data this tool collects from each state is data on obesity.

The BRFSS uses the Body Mass Index, the calculation of the relative percentage of fat and muscle mass, as a measurement tool. A BMI of 30 or more is considered obese. According to BMI, a woman who is 5 feet, 4 inches tall, and 30 lbs overweight is obese, and a six-foot tall man who weighs 225 pounds is obese.

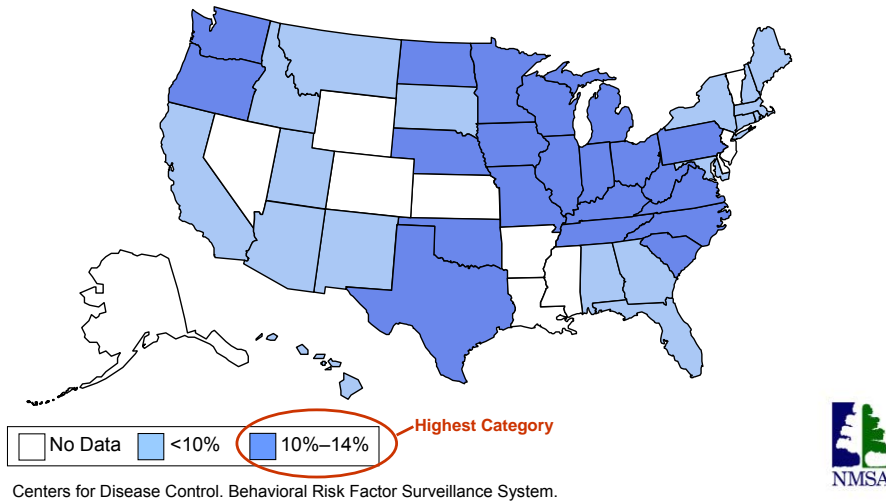
Adult obesity trends: BRFSS 1985



In 1985, only 21 states administered the BRFSS – those states in blue. Of those 21 states, eight, those in darker blue, indicated that 10 to 14% of their total population was obese.

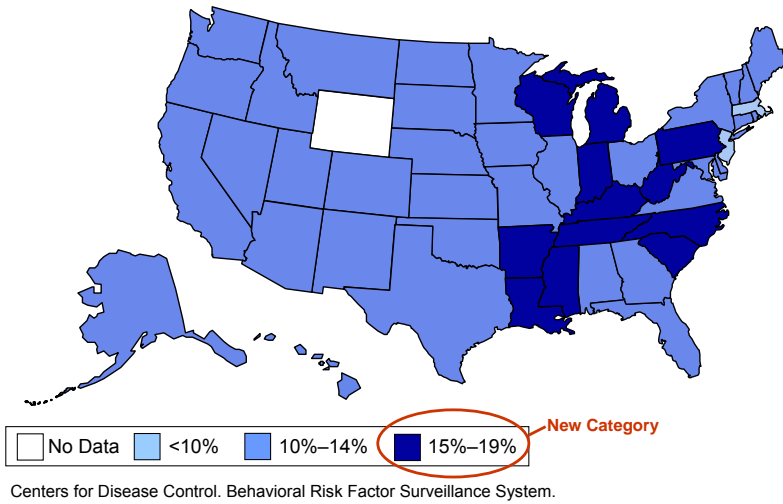
The remaining 13 states, those in lighter blue, indicated that less than 10% of their population was obese.

Adult obesity trends: BRFSS 1989



In 1989, 43 states provided data. Roughly half of the reporting states are in dark blue, indicating that between 10 and 14% of their population was obese.

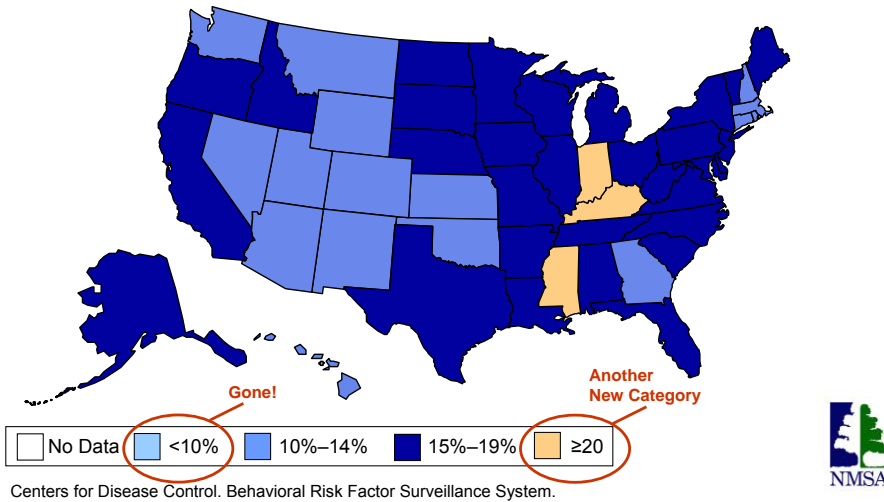
Adult obesity trends: BRFSS 1993



Four years later, in 1993, 49 states reported on the BRFSS. In 33 states, 10 to 14% of the population was obese – an increase of 12 states in 4 years.

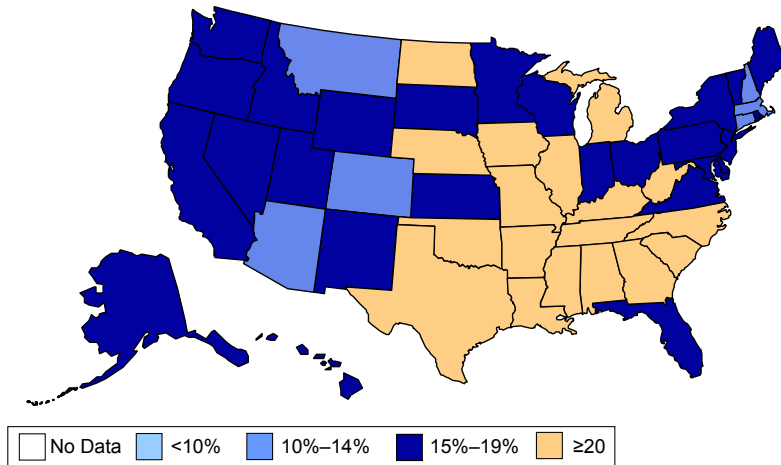
But there is a disturbing addition — a new category of obesity. Twelve states reported that 15 to 19% of their population was obese.

Adult obesity trends: BRFSS 1997



The obesity trend continued to escalate, as we see four years later, in 1997. The number of states where 15 to 19% of the population was obese increased from 12 to 31. Yet another new category was added — obesity among more than 20% of the population. By 1997, an obesity rate of less than 10% had disappeared.

Adult obesity trends: BRFSS 1999



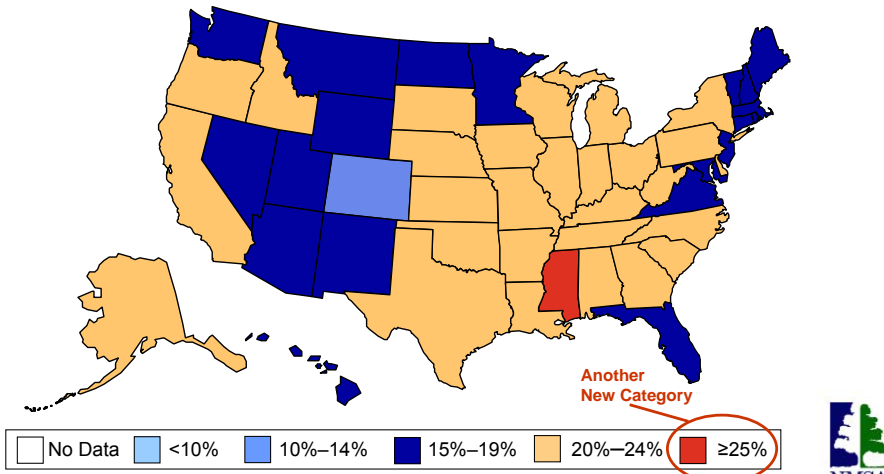
Centers for Disease Control. Behavioral Risk Factor Surveillance System.



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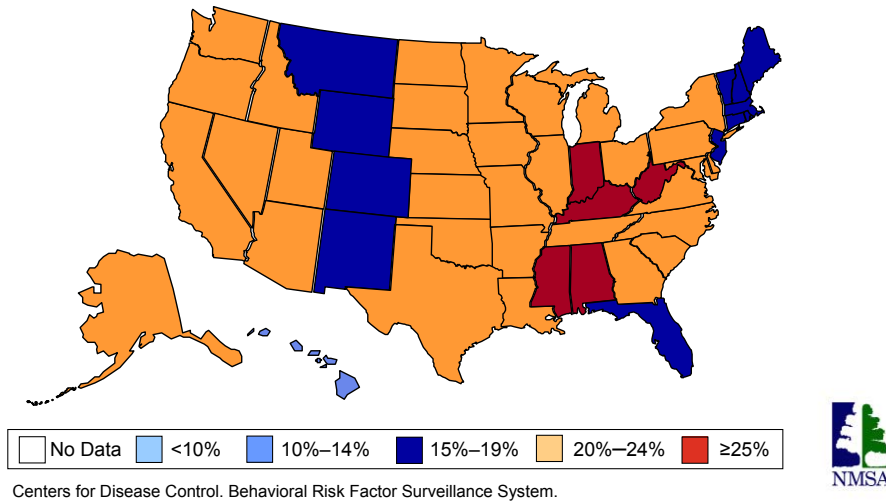
Only two years later, in 1999, more than one-third of the states reported that more than 20% of their population was obese.

Adult obesity trends: BRFSS 2001



In 2001, yet another category was added — obesity among more than 25% of the population. The majority of states reported that 20 to 24% of their population was obese.

Adult obesity trends: BRFSS 2003



Two years later, in 2003, five states reported that more than one-quarter of their population was obese. Thirty-two states reported that 20 to 24%, or one-fifth of their citizens were obese.

Childhood obesity epidemic

- 3-fold increase in overweight children and adolescents in past 20 years
- 9 million children (ages 6-19) overweight
- Poor nutrition, inactivity, overweight, and obesity impede ability to learn and interact positively with others



But obesity and overweight are not exclusive to adults. Obesity among children is now considered an epidemic in the United States. In the last two decades, there has been a 3-fold increase in overweight children and adolescents. Nearly 9 million young people between the ages of 6 and 19 suffer from obesity and overweight. Poor nutrition, inactivity, and the resulting conditions of overweight and obesity have direct, negative impacts on a young person's ability to learn and interact positively with others.

Overweight children suffer

- Depression and anxiety
- Social isolation
- Other medical complications
 - Asthma
 - High blood pressure
 - High cholesterol
 - Gallbladder disease
 - Joint problems
 - Osteoporosis
- Type 2 diabetes: a “pediatric disease”^{*}
 - 10-fold increase
 - 1 in 3 children at risk

Journal of Pediatrics, 128: 608-615



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Overweight children are more likely to suffer from depression, anxiety, and isolation from their peers.

Overweight children are likely to suffer from at least one other complicating medical problem that historically has been an adult disease. Generally speaking, more children are developing “adult” diseases as a direct consequence of overweight and obesity.

For example, “adult onset” diabetes, or type 2 diabetes, has become a pediatric disease. In one study, type 2 diabetes in adolescents increased 10-fold between 1982 and 1994. The CDC warns that one in three U.S. children born in 2000 will become diabetic, unless many more people start eating less and exercising more. By the way, diabetes is a life-limiting and life-shortening disease.

Carryover into adulthood

- 80% of overweight children become obese adults
- Children will have poorer quality of life
- Children will predecease their elders



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Not only are our children developing adult medical conditions that could be avoided, the burdens of overweight follow them into their adult years. Nearly 80% of overweight children become obese adults.

But here is a startling prediction: For the first time in the history of the United States, our children will likely have a poorer quality of life than the preceding generation, and will likely die before their elders.

Obesity

- Reduces quality of life
- Shortens lifespan
- Begins in childhood
- Can be prevented through
 - Increased physical activity
 - Good nutrition



So, why is this information important? Because obesity reduces the quality of life and shortens lifespan. Because obesity begins in childhood. And, because schools can take direct action to improve two areas that have direct impact on children's ability to learn and on the lifestyle problems of obesity and overweight – physical activity and nutrition.

Children need good nutrition, but...

- 2% consume recommended servings
- 84% exceed saturated fat guidelines
- <1/3 consume recommended dairy
 - < 1 in 10 girls and 1 in 4 boys at or above recommended calcium
 - Increase in osteoporosis and bone fractures in adolescents*

National Institute of Child Health and Human Development. Milk Matters Calcium Education Campaign. 2006.



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Children need food that is high in nutrition, and low in saturated fats and empty calories. However, only 2% of school-aged children consume the recommended number of servings from all food groups. Eighty-four percent of school children exceed the guideline for saturated fat on any given day.

Less than one-third of school children consume the recommended milk group servings on any given day, and teenagers drink twice as much carbonated soda as they do milk. In fact, fewer than 1 in 10 girls and only 1 in 4 boys ages 9 to 13 are at or above their adequate intake of calcium. Reporting increased incidents of osteoporosis and bone fractures in adolescents, hospitals are seeing the direct result of this.

Dilemmas of food insufficiency and hunger

- Limited choice
- Poor nutritional value



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For children whose lives are plagued by food insufficiency and hunger, the problem is compounded by limited and/or poor choices. Too often, the food available to young people who live in poverty is of poor nutritional value – high calories, high fat, high salt. The result: Children are undernourished despite their daily consumption of excessive calories.

Poor nutrition compounded by sedentary lifestyle

- Recommendation: 60 minutes/day of physical activity
- Realities:
 - 75% of adolescents have 20 min. activity/day
 - More than 1/3 adolescents go 4+ days/week without physical activity
 - By the time they reach their teens, 1/2 of youth are regularly *inactive**

Centers for Disease Control, Division of Nutrition and Physical Activity, 2004.



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The problems of poor nutrition are compounded by children's increasingly sedentary lifestyle. The Centers for Disease Control and Prevention recommend that young people participate in 60 minutes of moderate activity daily. However, only 75% of children get even 20 minutes daily. More than one-third of adolescents go four or more days a week without physical activity. By the time they reach their teens, nearly half of America's youth are regularly *inactive*.

Children need to move

- Early adolescence, ages 10 to 15 is time of intense physical growth and development
- Good food, water, and physical activity necessary to
 - Oxygenate body and brain
 - Increase heart and lung capacity
 - Maintain vascular elasticity
 - Decrease fat storage

Journal of Pediatrics, June 2005, p. 736.



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Yet, children are designed to move – a fact that cannot be left at the school doorstep. The period of early adolescence, between the ages of 10 and 15, is a time of intense physical growth and development. Young people need good food, water, and physical activity to fuel the growth and changes in their bodies, to oxygenate the body and brain, increase heart and lung capacity, maintain the elasticity of blood vessels, and decrease the storage of fat.

“Where unmet needs interfere with learning, it is the school’s obligation and responsibility to respond.”

Carnegie Council on Adolescent Development. *Turning Points: Preparing American Youth for the 21st Century*. 1989.

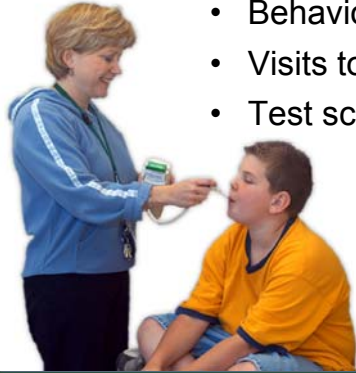


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But schools have so much to do already. Why should they also pay attention to students’ physical activity and nutrition? Because, “Where unmet needs interfere with learning, it is the school’s obligation and responsibility to respond.”

Good diet and physical activity improve students' ...

- Attention and creativity
- School attendance and tardiness
- Behavior
- Visits to school nurse
- Test scores



Action for Healthy Kids. *The Learning Connection: The Value of Improving Physical Activity and Nutrition in Our Schools*. 2004.



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To begin with, children can't learn at school if they are home sick, depressed or anxious, or tired. And when they are in school, they need to be alert, focused, healthy, ready, and able to learn.

When students eat healthy foods, maintain good dietary habits, and engage in sufficient physical activity, their attention and creativity improve; their school attendance increases, while tardiness rates diminish. Their behavior improves and disruptions decrease. Visits to the school nurse decline. And, of interest to many, test scores improve.

School is ...

- Where young people spend their day
- Students' place of "work"
- Students' place of social life
- A place of influence
- Where young people learn to participate in the larger world



School is where young people spend many hours of the day. It is their place of "work," and social life. School is a place of influence. Kids learn from each other, and they learn from the institution and the adults with whom they spend their day. School is also the place where young people learn to participate in the larger world.

Financial cost to schools when students are not healthy



State funding based on attendance

- 9 states serve more than 1/3 of all U.S. students
- \$9 to \$20/day/absent student



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There are financial reasons for schools to address physical activity and nutrition. Schools currently bear avoidable or reducible costs due to students' poor nutrition, inactivity, and weight problems. In many cases, state funding is calculated on the basis of student attendance.

State funding for schools in nine U.S. states is determined on average daily attendance — the number of students that show up for school. Collectively, these nine states serve more than one-third of all students in the United States. On a daily basis, school districts in these states lose between \$9 and \$20 per absent student. These dollars add up quickly.

Financial cost to schools when students are not healthy

Finance Project projections

- 16% of children have health problems directly related to overweight
- If 16% of students miss one day/month:
 - TX school district loses \$95,000/yr.
 - CA school district loses \$160,000/yr.
 - NYC school district loses \$28 million/yr.
 - Chicago school district loses \$9 million/yr.



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In an effort to determine the potential cost of poor nutrition, inactivity, and weight problems on these districts, The Finance Project made projections based on the 16% of American children that are overweight to a degree that affects their health. If 16% of students miss one day of school each month...

- An average-size school district in TX loses \$95,000 per year.
- An average-size school district in CA loses \$160,000 per year.
- The New York City school district loses about \$28 million each year
- Chicago's schools lose \$9 million annually

Keep in mind that these are estimates. Actual costs in some cases are higher.

Hidden costs

- Programs for underachieving students
- Programs to improve student behavior
- Staff time to dispense medications
- Rising health care costs
- Absenteeism and lower productivity

Action for Healthy Kids. *The Learning Connection: The Value of Improving Physical Activity and Nutrition in Our Schools*. 2004.



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Finally, there are indirect or hidden costs to poor nutrition, physical inactivity and resulting weight problems among school age children. For example, there are increased staff time and money for programs designed to help underachieving students and those with behavior problems. Staff have to dispense medications for the wide variety of physical and emotional problems associated with poor nutrition, inactivity, and weight problems. In schools that do not have professional health or nursing staff, teachers, secretaries, even the school principal is often in the position of dispensing medications.

And, of course, school districts are burdened by the rapid rise in health care costs for their staff who suffer from medical problems associated with poor nutrition, inactivity, and weight problems, and costs associated with absenteeism and lower productivity as consequences of poor nutrition, physical inactivity, and weight problems.

Reauthorized Child Nutrition Act

- Schools receiving funds for food service programs
- Wellness policy by 2006 – 2007
- Opportunity to include wellness in school policy and conversation



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Finally, schools must pay attention to nutrition and physical activity for students because it is the law. The Reauthorized Child Nutrition Act requires every school receiving funds for food service programs, such as school lunch and school breakfast programs, to adopt a wellness policy by the beginning of the 2006-2007 school year.

The Act does more than articulate the law, it creates an opportunity to include wellness in the conversation and development of school policy.

Wellness policy requirements

- Goals for nutrition education, physical activity, wellness promotion
- Nutrition guidelines
- Evaluation plan
- School and community involvement



According to the Reauthorized Child Nutrition Act, a school's wellness policy must include –

- Goals for nutrition, education, physical activity, and other school-based activities that are designed to promote wellness.
- Nutrition guidelines for all foods available on the school campus, with the objectives to promote student health and reduce childhood obesity.
- An evaluation plan for measuring implementation of wellness policy, including the designation of one or more persons with operational responsibility.

The Child Nutrition Act makes it clear that developing and implementing a wellness policy is a school and community task. Parents, community based organizations, students, the school board, school administration, and school food service personnel must be represented in the policy development and implementation process. These groups must also be represented on an ongoing school health advisory council, whose job is to provide focus and ensure involvement of all stakeholders.

Reauthorized Child Nutrition Act

- Find out what you need
- Discover where you are
- Determine where you want to go
- Take action



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So, how is a school to respond? What do you need to do?

You must meet the requirements of the Reauthorized Child Nutrition Act and ensure a high level of policy implementation. The best way to go about this is to follow four steps. First, find out what you need. Second, discover where you are. Next, determine where you want to go. And finally, take action.

Step 1 – Find out what you need



Resources to develop and implement a Wellness Policy that meet the needs of students and staff

www.ActionforHealthyKids.org

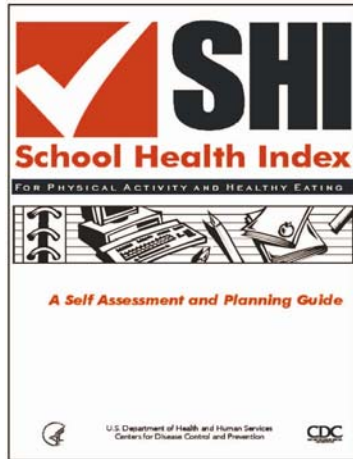
Click on Wellness Policy Tool



So, to begin: find out what you need.

The best resource for this step is the Action for Healthy Kids website, at www.actionforhealthykids.org. The Action for Healthy Kids Wellness Policy Toolkit explains how to develop your team and provides ways to assess your district needs.

Step 2 – Discover where you are



Assess your school's physical activity and nutritional environment

School Health Index

www.cdc.gov/HealthyYouth



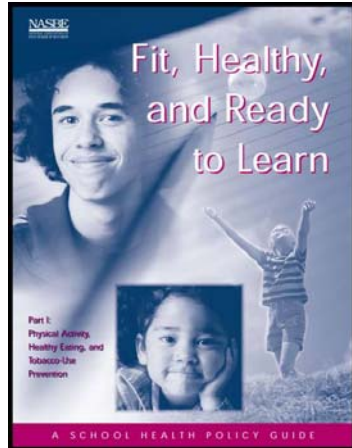
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The School Health Index from the CDC is the best source to assist you in discovering where you are. The SHI is a free, online survey instrument that helps a school answer such questions as –

- What are our current strengths regarding nutrition and physical activity?
- What are concerns that we have not considered in the past?

The SHI also has an action planning function that kicks in as building or district data is entered.

Step 3 – Determine where you want to go



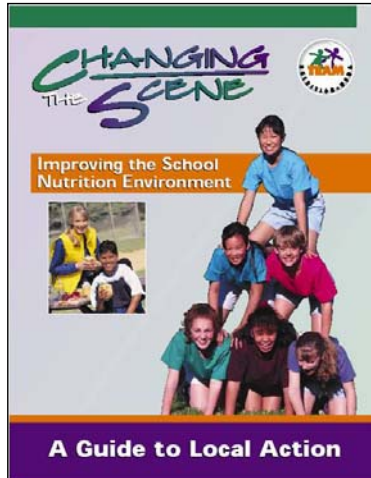
Fit, Healthy, and Ready to Learn

www.nasbe.org



The National Association of State Boards of Education's *Fit, Healthy, and Ready to Learn* is a school health policy guide that provides sample policies, research findings, excerpts of actual policies, and resource lists.

Step 3 – Determine where you want to go



Changing the Scene: Improving the School Nutrition Environment

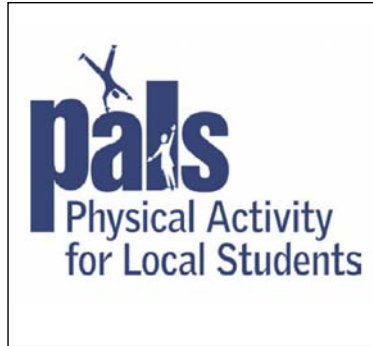
www.fns.usda.gov/tn



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The Changing Scene: Improving the School Nutritional Environment is a free resource from the U.S. Department of Agriculture. This toolkit includes a variety of materials to raise awareness about school nutrition and school environment issues that influence students' eating and physical activity practices.

Step 3 – Determine where you want to go



PALS: Physical Activity for Local Students

Available free from
www.nmsa.org
Site search = PALS



Physical Activity for Local Students is a facilitation guidebook to assist communities in assessing physical activity options for young adolescents and making plans for improvement. This free resource is available through National Middle School Association.

Step 3 – Determine where you want to go



Kids Walk to School

[www.cdc.gov/nccdphp/
dnpa/kidswalk/index.htm](http://www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm)



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Kids Walk to School is a community based program to increase students' physical activity through walking or bicycling to and from school. The program encourages collaboration with community resources and agencies such as PTA, local police department, parks and recreation, and civic organizations.

Remember to develop an evaluation plan as part of determining where you want to go. An evaluation plan enables you to demonstrate to others the outcomes of your actions and potential solutions to identified concerns.

Step 4 – Take action



Making it Happen! ***School Nutrition Success Stories***

Downloadable or hard copy

**[www.cdc.gov/healthyyouth/nutrition/
Making-It-Happen/](http://www.cdc.gov/healthyyouth/nutrition/Making-It-Happen/)**



...And now to action! Seek assistance, ask questions, and begin the process on behalf of young adolescents. There are a variety of resources to help you take action.

Making it Happen! is a compendium of success stories of positive change. This resource can encourage and reveal possibilities. *Making It Happen!* is available in hard copy or downloadable from the CDC website.

Step 4 – Take action



National School Boards Association

www.nsba.org

Click on School Health Programs



Another available resource is the National School Boards Association Website, nsba.org. NSBA maintains an extensive clearinghouse of current materials related to school health promotion.

Step 4 – Take action

- State Department of Education
 - Physical Activity, Nutrition, Tobacco Consultant
 - Coordinated School Health Consultant
 - Health Education Consultant



State departments of education in each state are working to assist schools. Position titles vary from state to state, so listed here are titles of positions designed to help schools promote health and academic success.

To fashion a middle level school where emphasis on health, wellness, and safety permeates . . .

- Seek assistance
- Ask questions
- Begin the process



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Fashioning a middle level school in which “an emphasis on health, wellness, and safety permeates the entire school” is no less important than the other characteristics of a developmentally responsive middle level school.

Although there is much to do, there are also sources of information and guidance. Seek assistance, ask questions, and begin the process on behalf of young adolescents.



***There is
no better time
than now!***



For the students that are before us each day, there is no better time than now to develop a school that is safe, welcoming, and emphasizes wellness and health.

Acknowledgments

National Middle School Association

Writer

Jean Schultz

Producer

Mary Henton

Editor

Cheri Howman

Graphic Designer

Dawn Williams

Webmaster

Ryan Gauntz



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