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Special Focus: Nutrition and Physical Activity

Preventing Obesity Among Children

OBESITY is not a benign condition for children, nor one that they are likely to outgrow. In fact, 60% of overweight 5- to 10-year-old children already have at least one risk factor for heart disease. Even though few long-term studies have followed obese children into adulthood, the metabolic changes that come with obesity make it more difficult to lose weight, say nutrition and fitness experts. In addition, dietary and activity habits adopted during childhood may be difficult to change. In other words, it's easy to get fat and hard to go back to being thin. Steve Gortmaker, PhD, Senior Lecturer of the Harvard School of Public Health, calls this phenomenon the "fat ratchet." For these reasons, "Prevention is the treatment of choice for obesity among children," he said.

Risk Behaviors and Their Causes

The reasons for the obesity epidemic have not yet been sorted out, but poor dietary habits, increased consumption of calorie-dense foods, and fewer opportunities for

physical activity contribute to the problem. One concern is that children have become much more sedentary in the last 30 years, largely because of the time they spend watching television. Children watch so much television that the American Academy of Pediatrics (AAP) issued guidelines recommending that parents limit their children's TV viewing to no more than 1 to 2 hours of quality programming a day. There are few well-controlled studies of the effects of TV viewing, but it clearly squeezes out other activities, and increases sedentary behavior and risk of obesity, Dr. Gortmaker said.

TV viewing also affects what children want to eat. "We know it affects patterns of food consumption," said William H. Dietz, MD, PhD, Director of NCCDPHP's Division of Nutrition and Physical Activity. "Children eat the foods they see advertised on TV. If you've seen any children's shows, you know that these foods tend to be fast foods, sugared breakfast cereals, and snacks. TV is a behavioral health hazard."

The percentage of young people who are overweight has more than doubled in the last 30 years. Between 10% and 15% of young people aged 6–17 years are considered overweight. Because obese children are likely to become obese adults, a key public health strategy focuses on increased obesity prevention efforts targeting children.

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention



Commentary Commentary Commentary

Battling Obesity: Notes From the Front

William H. Dietz, MD, PhD
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IN the field of public health, the details of the obesity epidemic have become familiar. Between 1980 and 1994, the prevalence of obesity among adults increased by more than 50%; according to NHANES III, 20% of men and 25% of women are more than 30 pounds overweight. Furthermore, 3% of adults are now 100 pounds or more overweight. Among adults, obesity is associated with a variety of risk factors for cardiovascular disease, such as elevated cholesterol, hypertension, and type 2 diabetes, as well as an increased risk of cancer and other diseases. Obesity accounts for approximately 300,000 deaths annually, second only to tobacco. The costs of diseases associated with obesity have been estimated at almost \$100 billion per year, or approximately 8% of the national health care budget.

The effects of the epidemic on young people are even more alarming. Ten percent to 15% of children and adolescents are overweight. The prevalence of obesity among children and adolescents has more than doubled between 1980 and 1994. Sixty percent of 5–10-year-old obese children already have at least one risk factor for cardiovascular disease, and 25% of obese children have two or more.

Because the prevalence of obesity has increased so rapidly, we know its origin is not genetic. The gene pool did not change rapidly during the course of the epidemic. Although genetic research may yield more effective drug therapy for obesity, experience with fenfluramine/phentermine and the newer drugs indicates that drug therapy for the near future will likely be only modestly effective, expensive, and potentially harmful. Because treating everyone affected by obesity will bankrupt the health care system, our only realistic option is to invest in obesity prevention.

The goals of obesity prevention and control are twofold: prevention of weight gain for the entire population and weight loss for those who are overweight.

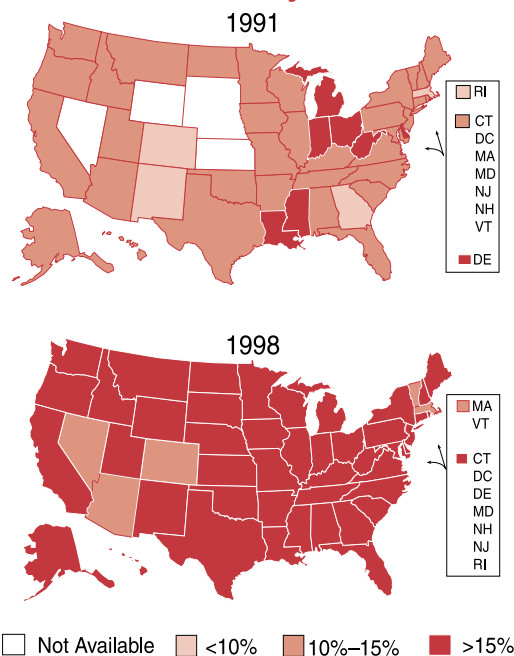
These goals represent a critical public health challenge. The first goal, which involves preventing weight gain among the nonobese, the weight gain that accompanies aging, and further weight gain among the already obese, will arrest the progression of the epidemic and the development of the illnesses associated with obesity. The obesity epidemic developed concurrently with changes in the food supply, such as increased consumption of fast food and soft drinks, extraordinary serving sizes, and a surfeit of food products. Therefore, strategies to change food consumption include promoting fruit and vegetable consumption, substituting water for juice and soft drinks, and reducing our reliance on high-calorie fast foods. Because a variety of indicators suggest that physical activity declined over the same time period, sedentary behavior is

also a contributing factor to the increase in obesity.

Increased physical activity offers an important strategy for weight control. Therefore, environmental changes to promote physical activity are essential: we must restore physical education in schools, develop and promote worksite-based physical activity programs, and adopt alternatives to car use in communities.

The obesity epidemic offers a unique opportunity for both programmatic efforts to halt its spread and an applied research agenda that examines the effectiveness of these approaches. If we are successful, our efforts will not only stem the obesity epidemic but also take us much closer to fulfilling CDC's vision: healthy people in a healthy world. ☀

Percentage of Adults Who Are Obese,* by State



*Approximately 30 pounds overweight or BMI \geq 30.
 Source: CDC, Behavioral Risk Factor Surveillance System. Revised August 1999.

Preventing Obesity Among Children

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According to Dr. Gortmaker, children need more after-school programs to increase their opportunities for being physically active. “It’s a prime time of day for physical activity,” he said. “And it’s not that difficult to get kids to do other things than watch TV. They don’t enjoy their TV time that much. Some children simply do not have safe opportunities for physical activities.” Interventions such as Dr. Gortmaker’s Planet Health, a school-based program for middle-school children in Boston, Massachusetts, can increase physical activity and promote consumption of fruits and vegetables, and decrease the time spent watching TV. As a homework assignment, students in Planet Health are asked to interview an older adult about children’s activities before TV was available.

The Role of Schools

Because children spend much of their time at school, schools can play a vital role in improving students’ eating habits and increasing their opportunities for regular physical activity.

Food service. According to Dr. Dietz, health concerns conflict with other priorities for school food service directors. School lunch programs are run on a very tight budget, and food service directors are pressured to keep them in the black, he noted. Dr. Dietz observed, “Putting more money into these programs would enable them to make healthier choices. For example, pizza is a popular school food; choosing a brand that’s low in fat and sodium would be an easy step to improving school lunches. But cost continues to take precedence.”

Peggy Agron, MA, RD, California Department of Health Services, agrees that schools are not filling children’s dietary needs. Although schools must provide some foods from the National

School Lunch

Program’s monitored list, the cafeteria lines are long and may also have the stigma of being for the poor. “Access to healthy food at schools is a problem. Most kids get their lunch from vending machines or food carts. They mostly eat tacos, pizza, chips, and french fries,” said Ms. Agron.

Ms. Agron is Codirector of the California Project LEAN (Leaders Encouraging Activity and Nutrition), which conducts general nutrition programs for low-income populations. The Project’s *Food on the Run* program, which aims to

Viewpoint

If we help children get in the habit of replacing time spent sitting in front of the television with more regular physical activity, and making healthy food choices, we help improve their health and well-being.”

—Karen Peterson, ScD
Harvard School of
Public Health

Promoting Lifelong Healthy Eating Among Young People

Everyone can

- Set a good example by eating a balanced diet high in fruits, vegetables, and whole grains.
- Find out what schools are doing to promote healthy eating.
- Join a school health or nutrition advisory council and guide nutrition policy.
- Provide positive suggestions to food service managers.

Parents or guardians can

- Provide healthy snacks for school parties and special events.
- Help school staff plan activities where students can sample healthy foods.
- Involve children in selecting and preparing food.
- Offer children a variety of healthy foods, keep healthy snacks on hand, and make mealtime enjoyable.

Students can

- Set goals for healthy eating and monitor progress.
- Make healthy choices in the school cafeteria or when packing their lunch.
- Encourage friends and family members to eat healthy foods and be physically active.
- Help plan school and family menus.

Source: NCCDPHP Division of Adolescent and School Health.

Promoting Lifelong Physical Activity

Everyone can

- Advocate for convenient, safe, and adequate places for young people to play and take part in physical activity programs.
- Encourage school officials to support daily physical education and other school programs that promote lifelong physical activity, not just competitive sports.
- Set a good example by being physically active, making healthy eating choices, and not smoking.

Parents or guardians can

- Encourage their children to be physically active.
- Learn what their children want from physical activity programs and help them choose appropriate activities.
- Volunteer to help their children's sports teams and recreation programs.
- Limit television viewing to no more than 1 or 2 hours a day.

Students can

- Set goals for increasing their physical activity and monitor their progress.
- Encourage friends and family members to be physically active.
- Use protective clothing and proper equipment to prevent injuries and illnesses.

Source: NCCDPHP Division of Adolescent and School Health.

increase healthy eating and physical activity among underserved teenagers, is active in 30 California high schools. Ms. Agron is working with schools to involve teenagers in developing healthy menus that feature "modified fast foods," such as wraps, smoothies, and other healthy choices. She noted that the major obstacle for schools is financial: "Selling unhealthy foods keeps them in the black."

Soda consumption. Although soda may not be available at elementary schools, the familiar vending machines can be found in many middle and high schools. Some schools have "pouring contracts," agreements with soft drink companies that allow them to share in the profits from sales of particular brands. Other schools ban soda but allow the sale of sports drinks, which are equally high in sugar. "Kids who


consume soft drinks often consume a huge amount of sugar and hence, excess calories, with zero nutritional value," said Dr. Gortmaker.

Physical activity and education. "Schools are one of the few supervised locations where children can be physically active," said Dr. Dietz. Yet the amount of physical activity offered by schools has decreased. For instance, daily participation in high school physical education classes dropped from 42% in 1991 to 27% in 1997. Parents need to urge schools to restore daily physical activity. With community support, schools may also be able to offer children and adolescents a safe location for after-school and evening activities.

Walk to School. In many communities, children are not able to be active by walking or biking to and from school. Fear of crime, lack of sidewalks and bike paths, and increasing distances between schools and homes are contributing factors. Yet even children who live within a mile of their school are unlikely to walk. CDC is sponsoring KidsWalk-to-School, a program that promotes physical activity and allows children to walk safely to school in the company of one or more adult volunteers. As part of the program, CDC is developing a community action guide to help communities organize walk-to-school programs in their neighborhoods.

For more information about Project LEAN, contact California Project LEAN, P.O. Box 942732, MS-675, Sacramento, CA 94234-7320, telephone 916/323-4742; fax 916/445-7571, or visit www.dhs.ca.gov/lean.

For more information about Planet Health, visit www.hsph.harvard.edu/Academics/mch/home/planet.htm

For more information about KidsWalk-to-School, call Jessica Shisler at 770/488-5085. 

Meeting the Challenge of the Obesity Epidemic Among Young People

THE percentage of young people who are overweight has almost doubled in the last 20 years.

Much of this increase is attributable to insufficient physical activity and unhealthy diets. CDC's 1997 Youth Risk Behavior Survey found that

- More than one-third of high school students (36%) did not participate regularly in vigorous physical activity, more than half (51%) were not enrolled in physical education classes, and daily participation in physical education classes by high school students had dropped from 42% in 1991 to 27% in 1997.
- More than two-thirds of high school students (71%) did not eat the recommended five daily servings of fruits and vegetables.

According to Lloyd J. Kolbe, PhD, Director of NCCDPHP's Division of Adolescent and School Health (DASH), schools can play an important role in addressing the epidemic of obesity among young people. Schools are a logical place to promote lifelong healthy behaviors: every school day, 50 million young people attend more than 110,000 schools in the United States. Research has shown that well-designed, well-implemented, school-based physical activity and nutrition programs can be effective.

CDC currently funds 16 states for coordinated school health programs that include physical activity and nutrition components. More states are expected to be added soon. In addition, CDC works closely with a variety of national nongovernmental organizations, including voluntary agencies and professional associations, to develop products and services that can help schools carry out effective physical activity and nutrition programs. With the recent launch of a

national initiative to enable the nation's schools to prevent heart disease, cancer, and diabetes, CDC has greatly intensified its efforts to ensure that schools meet the challenge of improving the dietary and physical activity habits of young people.

Surveillance Is Key

CDC monitors young people's physical activity and nutrition behaviors and school programs to improve these behaviors through two surveillance systems: the Youth Risk Behavior Surveillance System (YRBSS) and the School Health Policies and Programs Study (SHPPS). The YRBSS monitors priority health-risk behaviors, including physical activity and dietary behaviors. It includes a school-based survey of a nationally representative sample of high school students conducted by CDC, as well as state, territorial, and local school-based surveys conducted by education and health agencies. National surveys have been conducted every two years since 1991. The 1999 survey was modified to give a more precise estimate of fruit and vegetable intake and to provide student self-reports of height and weight. YRBSS data are used extensively for determining behavioral trends and identifying disparities among different groups.

SHPPS monitors school health policies and programs, including those related to physical education and food service, in a nationally representative sample of schools. Originally conducted in 1994, SHPPS is being conducted for the second time in early 2000. This more extensive version is assessing all eight components of the CDC Coordinated School Health Program model in elementary, middle, and high schools.

Synthesizing Research to Develop Guidelines

In 1996 and 1997, CDC released guidelines for schools on how to effectively

promote lifelong physical activity and healthy eating among young people. Developed in collaboration with experts from other federal agencies, state agencies, universities, voluntary organizations, and professional associations, these guidelines are based on an extensive review of research and practice. The school health guidelines include recommendations on policies, curriculum and instruction, family and community involvement, food service, extracurricular physical activity programs, and program evaluation. According to Howell Wechsler, EdD, MPH, Health Scientist, NCCDPHP's Division of Adolescent and School Health, the guidelines are at the core of CDC's efforts to ensure quality school nutrition and physical activity programs.

Helping Schools Implement the Guidelines

In April, CDC announced the release of three important new tools that can help all states put CDC's guidelines for school health programs into effect. The first of these is the *School Health Index for Physical Activity and Healthy Eating: A Self-Assessment and Planning Guide*, which provides schools with a set of questionnaires for rating their own policies and programs against the standards of the CDC guidelines. The *School Health Index* will help schools identify the strengths and weaknesses of their health promotion policies and programs and develop an action plan for improving student health. One of the most important features of the *Index*, according to Dr. Wechsler, is that it provides a vehicle for involving teachers, parents, students, and community members in improving school programs and services.

The other two new tools focus on helping schools adopt and carry out effective policies. *Fit, Healthy, and Ready to Learn: A School Health Policy Guide*, developed with CDC support by the National Association of State Boards of

Education, features sample policy language on physical activity, nutrition, and tobacco-use prevention, as well as data to support the policies and practical suggestions for putting them into action. *The School Health Resource Database*, developed and managed by the National School Boards Association with support from CDC, provides sample district policies and background information, consultation, and referrals to experts on policy issues.

"The CDC school health guidelines were developed with a vision in mind: to help schools implement the most effective practices available to improve the dietary and physical activity habits of young people," said Dr. Wechsler. "These three new tools will make it much easier for schools to achieve this vision."

A CDC Initiative

These efforts to improve nutrition and physical activity among young people are part of a larger CDC initiative to reduce the prevalence of the major chronic disease killers—cardiovascular disease, cancer, and diabetes—by targeting risk factors usually established during youth: tobacco use, diets that contain excessive amounts of fat and calories, inadequate physical activity, and obesity. Once these risk factors become established during childhood, they are difficult to modify during adulthood. CDC will use the following four interrelated strategies to help schools develop policies and programs to promote lifelong physical activity and healthy eating and prevent obesity and tobacco use:

- Monitor critical health events and school policies and programs.
- Synthesize and apply research to improve school policies and programs.
- Enable constituents to help schools develop effective policies and programs.

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The Hidden Hunger: Micronutrient Malnutrition

ALTHOUGH our bodies need only tiny amounts of vitamins and minerals (micronutrients), the effect of not getting those tiny amounts is huge. “For example,” said William H. Dietz, MD, PhD, Director, Division of Nutrition and Physical Activity, NCCDPHP, “children with insufficient vitamin A can have serious eye problems, including blindness. Pregnant women without enough iodine can give birth to infants with severe mental retardation. And children with iron deficiency can suffer attention deficit, developmental delays, and increased capacity to absorb heavy metals such as lead. In extreme cases, children with severe iron deficiency anemia can die of heart failure.”

“And these clinical manifestations are just the tip of the iceberg,” said Glen F. Maberly, MD, FRACP, Professor, Rollins School of Public Health, Emory University. “The more subtle effects on the whole population are reduced intellectual capacity, decreased resistance to infection, and decreased work productivity. Hence micronutrient malnutrition is also known as hidden hunger.”

Not only are the effects of micronutrient malnutrition huge, but the number of people affected worldwide is also huge. For example, about one-third of the world’s population (about 2 billion people) suffers from iron deficiency. As another example, in the early 1990s, The World Bank estimated the effect of micronutrient deficiency on a country with a population of 50 million at the rates that exist in South Asia: in such a country *each year* 20,000 people die, and 11,000 children are born with severe mental retardation or become blind before they reach school age.

“Obviously, then, the socioeconomic benefit to eliminating this hidden hunger is great,” said Dr. Maberly. “According to The World Bank estimates, it can lead to an increase in gross domestic product of 5% in countries where the problem exists.”

CDC’s Role

For more than a decade, CDC has used its core funds to work with government and private partners to combat this global problem. This year, however, Congress appropriated \$5 million specifically for CDC to conduct global activities to eliminate micronutrient malnutrition. “We want to use these funds to fill in the gaps in the international programs that already exist,” says Ibrahim Parvanta, MS, Public Health Nutritionist, Division of Nutrition and Physical Activity, NCCDPHP. “We’ll use our epidemiologic expertise to help countries and international agencies such as UNICEF and WHO to assess the extent of micronutrient deficiencies, develop appropriate interventions, and evaluate the effect of those interventions. At first, we’ll help generate data and do epidemiologic assessments. For the long-term, however, we’ll help train public health professionals in epidemiologic techniques so that countries can eventually generate their own data and evaluate their own programs.”

CDC is also planning to set up a micronutrient laboratory. According to Christine M. Pfeiffer, PhD, Visiting Scientist with CDC’s Division of Laboratory Sciences, National Center for Environmental Health, this new laboratory will have three main functions: providing reference services for micronutrient laboratories throughout the world, training scientists in other countries to set up and operate their own micronutrient laboratories, and developing new

technology—in particular devices that can measure micronutrient levels in the field. “Field devices are important,” said Dr. Pfeiffer, “because in some countries getting blood samples to a laboratory is extremely difficult.”

Solutions

Although the effects of micronutrient deficiency are terrible, the technology to relieve the problem is relatively simple and inexpensive. According to The World Bank, “Probably no other technology available today offers as large an opportunity to improve lives and accelerate development at such low cost and in such a short time.” In other words, investing in programs to reduce micronutrient deficiency gives a lot of bang for the public health buck.

According to Dr. Maberly, there are essentially four ways to reduce or prevent large-scale micronutrient malnutrition:

- Get the affected people to eat a balanced diet. In developing countries, however, this solution is often impractical because a wide variety of foods, especially animal products such as eggs and meat, is unavailable or unaffordable. Even in developed countries such as the United States, processing sometimes depletes foods of their natural micronutrients, which means that people need some other method of getting their daily requirement of vitamins and minerals.
- Fortify or enrich staple foods with micronutrients. The key to this type of intervention is to add the micronutrient to a food that is eaten by almost everyone with little day-to-day change in the amount consumed. For example, vitamin A is added to flour in the Philippines, folic acid and iron is added to cereal in the United States, and iodine is added to salt in many countries including the United States.
- Eliminate the underlying cause of the micronutrient deficiency. For example, unsanitary conditions can cause children to get hookworms, which deplete the body’s store of iron by causing gastrointestinal bleeding. Therefore, improving sanitary systems will reduce children’s risk of getting hookworms, which in turn reduces their risk of being iron deficient.
- Give doses of the deficient micronutrient to certain high-risk groups (especially young children and pregnant women) and to persons at immediate risk for disease or death. For example, vitamin A deficiency can worsen the effects of infectious diseases; therefore in developing countries, children with diseases such as measles or malaria are often given doses of vitamin A to reduce their risk of dying. In the United States, pregnant women take iron supplements to prevent adverse birth outcomes.

Sound Economic Policy

Eliminating micronutrient deficiency worldwide is not only sound public health policy, it is also sound economic policy. People who suffer from micronutrient malnutrition are often unable to work or reason at the same level as people who are healthy. “Preventing micronutrient malnutrition is no panacea for the problems of many Third World countries, problems such as famine, political strife, and poverty,” said Dr. Maberly. “However, resolving these larger problems requires that citizens have normal intellectual functioning and the good health associated with micronutrient sufficiency.”

Unfortunately, in some countries the problem of micronutrient malnutrition is getting worse, not better. “For example,”

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Micronutrient Deficiency in the United States

In this country, the problem of micronutrient inadequacy is not nearly as severe as it is in developing countries. Nevertheless, the problem is serious—particularly with regard to iron and folic acid. “And we may have to add iodine to the list,” said Laurence Grummer-Strawn, PhD, Scientist with NCCDPHP’s Division of Nutrition and Physical Activity. “The iodine levels of the U.S. population in 1988 through 1994 were lower than in 1976 through 1980. The levels are not dangerously low, but the fact that they are decreasing is of concern. We are watching iodine levels closely through CDC’s ongoing National Health and Nutrition Education Survey (NHANES) to see if they continue to drop.”

What Can States Do?

“One of the most important things that states can do is support the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC),” says Ibrahim Parvanta, MS, Public Health Nutritionist, Division of Nutrition and Physical Activity, NCCDPHP. “Largely because of WIC, most children in this country no longer have anemia. And the program must continue to get support if this success is to continue.”

For adult women, however, the story is not as positive. Despite routine iron supplementation, low-income pregnant women’s rates of anemia have not declined. “And among women of childbearing age, the levels of iron deficiency have actually increased,” said Mary E. Cogswell, DrPH, Epidemiologist, Division of Nutrition and Physical Activity, NCCDPHP. “They increased by 50% between NHANES II (1976–1980) and NHANES III (1988–1994).” Dr. Cogswell continued: “States should follow CDC’s recommendation that all nonpregnant women of childbearing age be screened and treated for anemia every 5–10 years—annually if they have risk factors for iron deficiency.”

CDC also recommends that all pregnant women take at least 30 mg of iron per day after the first prenatal visit to a physician and that women with anemia take 60–120 mg of iron per day. The Institute of Medicine, however, recommends that women take iron supplements according to each woman’s individual need, this need being determined by a test to measure the woman’s store of iron. “CDC is comparing the two sets of recommendations through two randomized control trials, one in Ohio and another in North Carolina,” said Dr. Cogswell. “We’ll evaluate the efficacy of both approaches to reducing adverse health outcomes among pregnant women and their newborns, and we hope to have results later in 2000.”

“States should also help implement recommendations with regard to folic acid,” said Barbara A. Bowman, PhD, Chief of NCCDPHP’s Chronic Disease Nutrition Branch. “All women of childbearing age—who could become pregnant—should take 400 mg of folic acid daily to prevent neural tube defects among their offspring.” CDC is monitoring the effects of this recommendation through NHANES. “However, some small studies already show that folic acid supplementation and fortification have improved the levels of folic acid among people living in United States,” said Dr. Bowman.

“Another good thing for states to do is promote the National Cancer Institute (NCI) *5 A Day* program,” Dr. Bowman continued. “Eating at least five servings of fruits and vegetables daily not only increases one’s chances of getting an adequate supply of micronutrients, it also reduces the risk for heart disease, cancer, and hypertension.”

The Hidden Hunger: Micronutrient Malnutrition

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said Dr. Maberly, “Russia used to fortify salt with iodine but stopped doing so. As a result, the health and economic well-being of a whole generation of Russians could be affected: the incidence of goiter could increase, and average intellectual capacity could decrease.


“But there’s also good news,” Dr. Maberly continued. “China has greatly increased its production of iodized salt. In 1990 less than 5% of Chinese salt had iodine; now about 90% does. This change should reduce the incidence of goiter and will also possibly increase the average intelligence level of the population.”

“There’s good news with regard to Russia too,” added Mr. Parvanta. “Just recently, with support from UNICEF and the Kiwanis Club, Russia started producing iodized salt again.”

For further information, contact Ibrahim Parvanta, MS, Division of Nutrition and Physical Activity, Mail Stop K-25, National Center for Chronic Disease Prevention and Health Promotion, CDC, 4770 Buford Highway, NE, Atlanta, GA 30341-3717. E-mail: ipravanta@cdc.gov

For copies of CDC’s recommendations on folic acid and iron, call (800) 843-6356. The charge is \$5 per copy. They can also be downloaded from the following Internet sites:

<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00051880.htm> (iron)

<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00019479.htm> (folic acid) 

Hemochromatosis and Food Supplements

WHEN it comes to food supplements, too much of a good thing can sometimes be a problem. For people with hemochromatosis, for example, taking vitamin or mineral supplements with iron can be harmful. Hemochromatosis is most often a genetic condition in which the body accumulates too much iron. In people born with the disorder, excess iron builds up to a toxic level after a period of years, generally by middle age, and can damage healthy tissues. People with hemochromatosis do not have to avoid eating iron-rich foods, but the American College of Pathologists strongly recommends they not take vitamin-mineral dietary supplements that contain iron and vitamin C.


Hereditary hemochromatosis is one of the most common diagnosable genetic disorders in the United States. Whites of northern European descent are at highest risk, and men are more commonly affected than women, whose iron loss through menstruation and pregnancy might reduce the net iron burden. People with this condition can remain asymptomatic for years, even decades. Diagnosis is difficult because the early symptoms are nonspecific, but if left untreated, the iron build-up can cause serious illnesses—cirrhosis of the liver, liver cancer, diabetes, heart disease, joint disease, chronic abdominal pain, severe fatigue, or certain infections. Death may result from cardiac arrhythmia, congestive heart failure, diabetes, or diseases of the liver.

Hemochromatosis is one of the few genetic diseases that can be treated simply and effectively—blood is removed from the patient (a process called phlebotomy) to lower the level of iron. When phlebotomy is begun early in the course of the illness, it can eliminate most symptoms and prevent later complications. Even when phlebotomy is started late, however,

it can improve the patient's quality of life and prolong life expectancy.

Because effective screening for the disease is not yet available, the best approach to early detection is to increase awareness about hemochromatosis among both physicians and the public. CDC recommends that people talk with their regular physicians about the possibility of being evaluated for hemochromatosis if they have a close blood relative with the disorder or if they show signs and symptoms compatible with the condition—severe weakness or fatigue; unexplained joint or abdominal pain; signs of liver disease, diabetes, or heart problems; or elevated iron levels. If an initial blood test shows elevated iron levels, a repeat test is conducted, followed by additional tests and, in some cases, a liver biopsy.

“In the United States, 2 to 5 people per 1,000 are estimated to be affected by hemochromatosis, which can cause significant health problems,” says Michele Reyes, Ph.D., CDC's team leader for hemochromatosis studies. “Iron overload can be treated, but treatment is often delayed, resulting in irreversible organ damage. Greater physician awareness of the condition may help reduce the occurrence of illness and death associated with primary iron overload.”

Interest in hemochromatosis has grown in the health community over the last 15 years as knowledge about the condition has increased. Although hereditary hemochromatosis is the most common form of the disease, some people may become iron-overloaded after years of iron ingestion or repeated blood transfusions, although why this happens is not clear. Studies are under way to help researchers understand this issue and many other complex issues surrounding the disease, including how it progresses in people who test positive. CDC currently is developing educational materials to heighten physician awareness of hemochromatosis and to inform patients about the disorder. 

5 A Day for Better Health

EXPERTS agree that eating five servings or more of fruits and vegetables daily may reduce the risk of getting cancer and other chronic diseases. In 1991, *5 A Day for Better Health* was launched nationwide to



encourage Americans to increase their daily consumption of fruits and vegetables. This program—an unprecedented collaboration between the National Cancer Institute (NCI) and the Produce for Better Health Foundation—has developed an extensive network of local partners to conduct community-level *5 A Day* activities in all U.S. states and territories. Their efforts appear to be working; results from NCI's Omnibus Survey of Adult Americans indicate that the percentage of adults who reported being aware of the recommendation to eat five servings or more of fruits and vegetables each day rose from 8% in 1991 to 39% in 1997. “We know that not only can we change awareness but, more importantly, we can change behavior with well-planned, channel-specific interventions,” says Gloria Stables, MS, RD, Program Director of NCI's *5 A Day* program activities. “There have been significant positive increases in fruit and vegetable consumption in our nine *5 A Day* community studies. The effect size ranges from about a one-serving increase

to about a one-plus serving increase in intervention compared with control participants.”

CDC's Role

From 1994 to 1999, NCI collaborated with CDC to award 31 one-year *5 A Day* program evaluation grants to state health departments. Although these projects primarily focused on school nutrition programs, they also evaluated *5 A Day* efforts in food assistance programs, media channels, grocery stores, and workplaces. Findings generally show improvements in communities where the interventions were conducted; for example, in Colorado, which received evaluation grants 2 years in a row, students in second through fourth grade who participated in the program ate significantly more fruits and vegetables, had higher good nutrition knowledge scores, and had better attitudes toward the school lunch program than those who did not participate.

The most recent *5 A Day* grants were awarded in September 1999 for projects to evaluate nutrition intervention programs targeted through community channels to primarily minority populations in the following states:

Alaska

The Alaska Department of Health and Social Services will conduct and evaluate a nutrition education project designed to increase consumption of fruits and vegetables to at least 5 servings per day by Native Alaskans who live in rural areas. Because growing or importing fresh fruits and vegetables is difficult in rural Alaska, the emphasis will be on eating canned and frozen fruits and vegetables, which are available year-round at local grocery stores. Project officers will select six rural communities—three intervention and three control—whose populations are predominantly Native Alaskan. In the intervention communities, local grocery

stores will participate in *5 A Day* activities, radio stations will play public service announcements, and community newspapers will run advertisements encouraging people to eat more fruits and vegetables. In addition to measuring changes in people's knowledge and consumption of fruits and vegetables, researchers will monitor changes in the volume of fruit and vegetable sales at local grocery stores.

California

The California Department of Health Services, with support from the Public Health Institute, will evaluate the effects of the *California Latino 5 A Day* Campaign on fruit and vegetable consumption and related behaviors among Latinos, who currently represent approximately one-third of the state's population. The intervention will be conducted from June through September 2000. Messages will be delivered in both Spanish and English to promote *5 A Day* activities via Latino-specific television, radio, and print media and at booths at large ethnic festivals and farmers' and flea markets in Latino neighborhoods.

Surveys done in California over a period of years showed a decrease in Latinos' fruit and vegetable consumption. The 1997 California Dietary Practices Survey found that 65% of the state's Latinos were not eating the recommended 5 servings of fruit and vegetables a day and that many of their other dietary practices were not healthful.

“These findings suggest that the public health community needs to implement innovative, field-tested approaches that reach the Latino population with intense *5 A Day* messages,” said Desiree Backman, DrPH, MS, Director of Nutrition Marketing in the department of health service's Cancer Prevention and Nutrition Section, who is principal investigator for this research project. “This is an unprecedented study of

Latino-specific *5 A Day* marketing activities. Findings and recommendations from the study will guide the development of future *California Latino 5 A Day* Campaign activities and may provide direction for other programs targeting similar Latino communities.”

Colorado

This *5 A Days* school-based project is designed to identify the role of special resource teachers and other variables in influencing schools' and teachers' decisions to participate in a *5 A Day* program. The classroom intervention consists of 26 consecutive weekly lessons that are integrated with language arts and math instruction. Outcomes for students with teachers who had no previous involvement in the program will be compared with outcomes for students whose teachers observed special resource teachers delivering the hour-long lessons the year before. The student outcome measurements include the amount of fruits and vegetables left uneaten at lunch and nutrition-related knowledge and attitudes. Teacher information will be collected through classroom observations, surveys, and interviews.

Massachusetts

This project seeks to expand and evaluate a successful middle school pilot project, “Healthy Choices,” designed to increase fruit and vegetable consumption, physical activity, and fitness levels and to decrease intake of high-fat foods, time spent watching television, and absenteeism or tardiness. Approximately 75 to 100 fifth-through eighth-grade students from 4 schools will participate in either the intervention or a matched control group. One part of the evaluation will focus on the physical characteristics, physical activity levels, and eating habits of students, and another part will focus on school staff members (for example, how

well they carry out the program, what they thought about it, and which program areas require external assistance).

Texas

The Texas Department of Health is working with the Texas Education Agency, the Texas Department of Agriculture, and Southwest Texas University to conduct a school-based intervention designed to encourage low-income minority children, predominantly Hispanic, to start eating more fruits and vegetables and to continue eating them after the program ends. The evaluation will help determine whether linking classroom *5 A Day* lessons and food service activities with outside activities conducted by a community-based coalition is better than conducting school-based activities only. Approximately 1,200 second- and third-grade students will participate in two matched school districts (one with school lessons only and one with community support in addition to the in-school activities). The evaluation will compare differences in related knowledge, attitudes, and behaviors of the students and their parents in the two groups. Additionally, the evaluation will compare the effectiveness of providing *5 A Day* materials to schools via the Internet and by direct mail.

Utah

The Utah Department of Health will examine the effectiveness of a school-based social marketing campaign to improve fruit and vegetable consumption and healthy eating skills among students in seventh and eighth grades. Improvements at the school receiving the social marketing intervention will be compared with those from two other schools, one that offers a classroom-based *5 A Day* curriculum only and a control school where no additional nutrition programs

New York's Low-Fat Milk Campaign

THROUGH CDC's cardiovascular disease program, the New York State Department of Health and its partners in the dairy industry conducted a successful campaign to increase the consumption of low-fat milk in the state. After a kick-off event that was widely covered by the local news media, the campaign continued for 9 weeks with television and radio commercials and milk taste tests at local grocery stores and schools. The end result was a marked increase in low-fat and overall milk sales.

New York's Governor George Pataki and Health Commissioner Antonia C. Novello, MD, MPH, support these efforts because they understand that eating right and exercising will lead to better health for New Yorkers.

"Cardiovascular disease is the number one cause of death in New York State, and high-fat diets are a significant risk factor," said Amy Jesaitis, MPH, RD, a chronic disease nutritionist in the state's Healthy Heart Program. "By simply switching from whole to skim milk, the average New Yorker would bring his or her saturated fat intake down from 12% to 10%, in line with the *United States Dietary Guidelines for Americans*."

Other factors prompting the development of this campaign were concerns about low-calcium consumption and decreasing milk sales. According to national surveys, calcium intake for all females older than 12 years, all adolescents except non-Hispanic white males, and all men older than 60 years is significantly below recommended levels, increasing the risk for osteoporosis. In addition, dairy products account for 60% of the agriculture market in New York, and steady declines in milk sales were adversely affecting both the health of New Yorkers and the welfare of the state's dairy farms.


The promotion was modified from the "1% or Less" low-fat milk campaign developed by the Center for Science in the Public Interest (CSPI). The initial planning committee for the campaign included representatives from the American Dairy Association and Dairy Council, Inc. (ADADC); the CSPI; New York's Farm Bureau and Department of Agriculture and Markets; and the state department of health's Healthy Heart Program and Division of Nutrition.

The broadcast commercials, paid for by the state department of health and the ADADC, aired during prime time and were aimed at primary grocery shoppers (women aged 18–55 years). They were designed to address three common beliefs identified by dairy association research as barriers to drinking low-fat milk: (1) all milk is fattening; (2) low-fat, light-colored milk tastes bad; and (3) many nutrients are skimmed off milk when the fat is removed.

Low-fat milk promotions and taste tests were conducted at 3 supermarket chains (11 stores), 3 high schools, and 4 elementary schools, where people—wearing sunglasses to eliminate visual cues—sampled all 4 kinds of milk to see if they could taste a difference. The primary message was, "If you like the taste of low-fat milk and you can't tell the difference, why not switch to low-fat milk and reduce your fat intake?"

By all measures, the campaign was successful. Overall milk sales increased by more than 5.5% from January to April 1998, fat-free milk sales increased by 11%, and 1% milk sales increased by 21%. At the same time, sales of whole milk and 2% milk decreased.

"This intervention shows that a positive health message can influence purchasing practices related to milk type," Ms. Jesaitis said. "It also demonstrates how collaborations between the public and private sectors can achieve complementary goals that benefit both communities."

For additional information about this campaign, call Amy Jesaitis at 518/474-6683 (fax 518/474-3356) or E-mail atj01@health.state.ny.us. 

Zuni Wellness Clinic

THE Zuni Wellness Center, in Zuni, New Mexico, is a nationally recognized success story that started as an Indian Health Service (IHS) diabetes prevention initiative and now incorporates a wide range of physical activity programs. For the last 13 years, this tribally run community-based effort has been dedicated to improving the overall health of the Zuni people. It also maintains its emphasis on diabetes control and prevention, collaborating with other area agencies to reduce the impact of the disease in this population by promoting healthy eating, regular exercise, and other health habits.

Diabetes is a serious problem in the United States, and Native American populations have been especially hard hit. About one-third of all adult Native Americans are affected by diabetes, and more women than men have the disease. At Zuni, 25% of people aged 30 years or older and 46% of those older than 50 have diabetes. The fitness programs offered by the Wellness Center limit the effect of diabetes in the community and also reduce the risk for other health problems such as cancer, heart disease, and high blood pressure.

The Wellness Center's 7 paid staff members and 13 volunteer certified fitness training instructors maintain close ties with the Zuni IHS Hospital medical staff, taking part in weekly diabetes clinics and offering free blood sugar and blood pressure testing before and after each

fitness session. A wide variety of classes are offered each week, including aerobic dance, weight training, and cardiovascular cross-training. To increase participation, the classes are conducted not only at the Wellness Center, but also at schools, the hospital, the Senior Citizens Center, and other convenient locations. People of all ages and health conditions are included—Head Start preschoolers as well as elders, people in good health as well as people with diabetes.

“Community empowerment is necessary to create a successful wellness campaign,” says center director Leatrice Lewis. Community ties and cultural traditions are strengthened through the Center's year-round programs and special community events, which emphasize Zuni traditions that promote good health. *The Human Race* is an ongoing fitness challenge; the *Holiday Eating Learning Program* (HELP)

offers prizes and gifts to encourage healthy weight loss. Last August, the Center sponsored a 2-day conference for young people, “*Keeping Healthy Through Our Traditions*,” that featured a rope course, lectures, running events, discussions, and an aerobics exhibition.

The 18th annual Zuni Fitness Series will begin May 20, 2000, and continue one day each month throughout the summer. Races and other festive fitness activities will be conducted, including 5- and 10-kilometer runs, a half marathon, combined mountain biking and running events, a youth biathlon, and aerobics dance classes. Prizes and gifts are offered as an added incentive—last year, more than 1,300 people participated.



The graphic for the Zuni Fitness Series was designed by a Native American artist.

The Zuni Wellness Center also supports other organizations in the community. Staff members have provided assistance in writing grants, operating health fairs, and conducting intensive fitness training and assessment for local firefighters and police officers. They also give classes to community groups using the *Strong in Body and Spirit* program, a five-part diabetes education and healthy lifestyle curriculum developed by the Native American Diabetes Project at the University of New Mexico. The curriculum uses cultural stories to emphasize strength and courage in combating unhealthy behaviors and to promote hopeful outlooks through healthy lifestyles.


Rounding out the Center's community involvement is the *Zuni DWI Program*, a special collaboration with the tribal courts, police, and local recovery center that began with a "Wellness Beyond Abstinence" grant in 1989. Through this program, people convicted of driving under the influence of alcohol must complete 20 hours of Wellness Center fitness activities, in addition to alcohol education, therapy, and community service, before their driver's license can be reinstated.

"Our greatest strength in developing programs is that we connect to naturally formed groups," said Ms. Lewis, citing the DWI program and fitness training and assessments for firefighters as examples. "The wellness movement is spreading throughout Indian communities everywhere—we try to stay connected."

A big part of staying connected, she says, is providing assistance to, and learning from, other tribal communities. These experiences, she believes, contribute to the Wellness Center's "small successes" in improving the overall health of the community. For the last 2 years she has attended wellness conferences for aboriginal women in Canada. The theme

of the 1999 meeting in British Columbia was "The Legacy We Leave Our Children"; the 1998 conference theme was "The Woman's Drum."

"When we hear the drum beat, we think of a heartbeat. In the olden times, the heartbeat of our Zuni people was the rhythm of the village. Somewhere along the line, the heartbeat became irregular. We lost the drumstick," Ms. Lewis said. "Today, we are once again holding the drum and drumstick, connected and beating out our own destinies. When the *Ashiwi* (Zuni people) are healed and are well, the whole community undergoes a healing. This is our aim at the Zuni Wellness Center."

For additional information, contact the organization by mail at Pueblo of Zuni Wellness Center, P.O. Box 308, Zuni, NM 87327-0308, or telephone 505/782-2665. 

Improving the Health of Uninsured Women Through WISEWOMAN

IN 1996, one of every eight U.S. women aged 20–64 years was uninsured. Uninsured women are more likely to be of races other than white, to have less education, and to be poorer than insured women. Their ability to pay for health care is limited. Uninsured women may be especially vulnerable to cardiovascular disease and other chronic diseases because they are more likely to smoke cigarettes, be overweight, be sedentary, and be less aware of their high cholesterol than women who are insured.


In 1995, to improve access to chronic disease prevention programs for uninsured and financially disadvantaged women, the Centers for Disease Control and Prevention (CDC) developed and funded WISEWOMAN (Well-Integrated Screening and Evaluation for Women

Across the Nation). WISEWOMAN projects are built on the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), an already existing program that recruits uninsured and financially disadvantaged women for breast and cervical cancer screenings. At funded sites, women who receive services in the NBCCEDP are also offered WISEWOMAN screenings for obesity, sedentary behavior, poor dietary habits, high blood pressure, high cholesterol, and other conditions that affect women. A primary goal of all WISEWOMAN projects is to test the effectiveness of various lifestyle interventions aimed at these especially vulnerable women.

The projects were initially located in three states: Massachusetts, North Carolina, and Arizona. Almost 10,000 women aged 50 years and older have been screened thus far through WISEWOMAN. From 50% to 75% of all participants had either high blood pressure or high cholesterol and were provided appropriate follow-up services. Assessment and intervention are directed at behavioral risk factors that can affect both cardiovascular

disease and breast cancer: physical inactivity, overweight, and dietary factors that contribute to overweight. Each of the three states tested somewhat different interventions to discover the most effective interventions for their unique populations. Specific interventions have included the following:

- A structured counseling tool called New Leaf . . . Choices for Healthy Living.
- Physical activity classes.
- Nutrition classes.
- Walking groups.


In its first year, WISEWOMAN demonstrated that offering screening tests for chronic disease risk factors to women in the NBCCEDP was feasible and very well-accepted by providers and participants. Interventions directed at these risk factors were helpful. Because many other women in the NBCCEDP are likely to have undetected hypertension and hypercholesterolemia, WISEWOMAN is needed at other sites. In fiscal year 2000, WISEWOMAN will be expanded to serve up to 10 NBCCEDP-funded states, territories, and tribes. 

The Obesity Epidemic

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- Evaluate to improve school policies and programs.

For more information, contact the Resource Room, Division of Adolescent and School Health, NCCDPHP, Centers

for Disease Control and Prevention, Mail Stop K-32, 4770 Buford Highway, NE, Atlanta, GA 30341-3717; 770/488-3168 or visit the DASH Web site at <http://www.cdc.gov/nccdphp/dash>. 

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Communications

CDC's Annual "Choose Your Cover" Campaign

Skin cancer is the most common form of cancer in the United States. This year, more than 1 million cases of basal cell and squamous cell carcinomas, the most curable types of skin cancer, will be diagnosed, and an additional 47,700 new cases of the more serious malignant melanoma are expected. Research shows that sunburns early in life increase skin cancer risk. The "Choose Your Cover" campaign targets adolescents and young adults to increase skin cancer prevention awareness and improve behaviors related to sun exposure. Specific campaign goals include increasing the use of sunscreen (SPF 15 or higher) and using other protection such as sunglasses and a hat. This year's campaign, to be launched in late spring, emphasizes that "you can still have fun in the sun while protecting your skin." For more information on the Choose Your Cover initiative, call Sarah Pierce at 770/488-4229 or visit <http://www.cdc.gov/chooseyourcover>.

Patient Care Diary for People With Diabetes

The Diabetes Control Program of the Florida Department of Health has developed a diabetes care diary to help patients manage their diabetes. The diary, which folds into the size of a credit card, outlines recommended diabetes care and treatment measures, such as annual eye and foot examinations, influenza immunizations, and quarterly hemoglobin A_{1c} tests. Also included is a patient flow sheet to be placed in a patient's medical record as a tool for health care providers. Patients are encouraged to use the diary as a self-management tool along with blood glucose logs. A follow-up survey will be conducted to determine the diary's effectiveness. For more information, call Bonnie Gaughan-Bailey or Barbara Fowler in the Florida Diabetes Control Program at 850/245-4330.

Conferences

Pregnancy Risk Assessment Monitoring System (PRAMS) 2000

The PRAMS 2000 National Conference will be held June 7–9, 2000, at the Empire State Plaza in Albany, New York. Representatives from CDC and states that participate in PRAMS will discuss PRAMS operations, findings, and future directions. This biennial meeting is an opportunity for networking among PRAMS participants and is open to others interested in PRAMS. For more information, contact either Nedra Whitehead at nsw1@cdc.gov or Mary Lyn Gaffield at meg4@cdc.gov or call 770/488-5227.

The Face of a Child—Surgeon General's Conference on Children and Oral Health

The Surgeon General's Conference on Children and Oral Health will take place June 12–13, 2000, at the Hyatt Regency Hotel in Washington, D.C. The conference will include plenary sessions, panels, and discussion groups that address oral health as an indicator of social and health problems among children. For registration information, call Estella Lazenby at 301/588-6000, or E-mail elazenby@kevr.com. For additional information, visit <http://www.nidcr.nih.gov/sgr/children/childre.htm>.

11th World Conference on Tobacco OR Health

The World Conference on Tobacco OR Health, designed to promote a future without tobacco and to strengthen global leadership in tobacco control and prevention, will be held August 6–11, 2000, in Chicago, Illinois. This international conference gives participants the opportunity to network with health, education, government, and environmental leaders; learn about new technology; and build skills in community organization, mobilization, intervention, and advocacy. The conference is hosted by the American Medical Association, the American Cancer Society, and The Robert Wood Johnson Foundation. Sponsors include the American Heart Association, the American Lung Association, Centers for Disease Control and Prevention, and the National Cancer Institute. For more information, call 312/464-5159, or contact conference organizers at 11thWCTOH@ama-assn.org, or visit <http://www.wctoh.org>.

cdnotes cdnotes cdnotes cdnotes cdnotes cdnotes**15th National Conference on Chronic Disease Prevention and Control**

The National Center for Chronic Disease Prevention and Health Promotion will host its 15th annual conference November 29–December 1, 2000, at the Hilton Washington and Towers in Washington, D.C. Participants will learn about the latest emerging chronic disease issues, data applications, and intervention research; network with health and other professionals; develop new working relationships; and discover what others are doing in communications, training policy, and partnership development. For more information, call Dale Wilson at 770/488-5885 or E-mail dnw3@cdc.gov.

Sixth Annual Maternal and Child Health Epidemiology Conference

The 2000 Maternal and Child Health Epidemiology Conference will be held December 12–13, 2000, in Atlanta, Georgia. The theme for this year's conference is "Reducing Disparities in Maternal and Child Health Outcomes." For more information, visit <http://www.uic.edu/sph/dataskills/mchep99/>, or call Jan Gray at 770/488-5187.

Information Sources**Cardiovascular Health Web Site**

CDC recently launched a new Web resource for cardiovascular health information that features information on the recently released publication *Women and Heart Disease: An Atlas of Racial and Ethnic Disparities in Mortality*. Visit <http://www.cdc.gov/nccdphp/cvd>.

National Program of Cancer Registries—Cancer Surveillance System (NPCR–CSS)

Now on-line, a new policy resource document, *National Program of Cancer Registries—Cancer Surveillance System (NPCR–CSS) Rationale and Approach*, presents CDC's plan for using cancer data from states funded by NPCR. The NPCR–CSS provides cancer incidence data for public health surveillance. For more information, visit <http://www.cdc.gov/cancer/npcr/new.htm>.

New CDC Guidelines Newsletter Available

The first issue of *Update: Tips for Implementing CDC School Health Guidelines* is now available on-line at <http://www.eta.aed.org/>. The Academy for Educational Development offers the newsletter under its contract with CDC. The newsletter provides assistance and support to state and local efforts to carry out CDC guidelines on promoting lifelong physical activity and healthy eating and preventing tobacco use and addiction. Each issue will focus on one of the three guideline topics. The premier issue focuses on the "new" physical education, a new philosophy centered on getting young people interested and involved in physical activity for a lifetime. For more information, call Susan Stine at 202/884-8839.

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5 A Day for Better Health

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will be offered. At the school participating in the social marketing campaign, a student advisory committee will be established to help tailor the intervention activities, events, and education programs, which will be implemented over a period of 4 months. One year later, a follow-up survey will be completed to evaluate the intervention's long-term effectiveness. An evaluation of parents' awareness of the *5 A Day* recommendation and consumption of fruits and vegetables is planned to assess the "trickle up" effect of the intervention.

For additional information on the *5 A Day for Better Health* programs, visit the NCI Web site at <http://dccps.nci.nih.gov/5aday>. 

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