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IMPROVING NUTRITION AND HEALTH THROUGH LIFESTYLE MODIFICATIONS

HEARING

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

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MONDAY, FEBRUARY 17, 2003

U.S. SENATE,
SUBCOMMITTEE ON LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION, AND RELATED AGENCIES,
COMMITTEE ON APPROPRIATIONS,
San Francisco, CA.

The subcommittee met at 10:30 a.m., in the University of California at San Francisco Conference Room, 3333 California Street, San Francisco, CA, Hon. Arlen Specter (chairman) presiding.

Present: Senator Specter.

OPENING STATEMENT OF SENATOR ARLEN SPECTER

Senator SPECTER. Good morning, ladies and gentlemen. The Field Hearing of the Appropriations Subcommittee on Labor, Health and Human Services, and Education will now begin. We commence by expressing our thanks to the University of California at San Francisco. We are very pleased to be here for many reasons, among the foremost is that there are 2 feet of snow in the East.

We are functioning here on a skeleton staff. Todd Averette is my skeleton.

The staff is all in Washington, where airports are not open and travel is impossible. Fortunately, Joan and I came out a few days early, so we are able to be with you here today.

We have, I think, a very important hearing on improving health through lifestyle modifications. The issue of cardiovascular disease is one which our subcommittee has been working on very intently for more than two decades, from my personal experience in the U.S. Senate, and the statistics are really overpowering. Cardiovascular disease afflicts 63 million Americans, killing almost a million—960,000 each year. The economic losses are more than any other disease, over $330 billion in medical expenses and lost productivity annually. The cost of cancer, the dreaded disease, is about half that amount.

Cardiovascular disease kills almost as many Americans as the next seven leading causes of death combined. It kills more women than men. Six times as many women die from heart disease as from breast cancer. The impact of obesity is tremendous, as we will hear in some detail in today's hearing. In the past two decades, obesity has increased by 100 percent among children and adolescents. More than 16 percent of children are overweight and, during the 1990s, the prevalence of diabetes has increased by some 50 percent among adults.

On the issue of improving health through lifestyle modifications, there have been very substantial increases in funding. Senator Harkin and I have made an NIH funding the principal, the number one priority for our subcommittee which funds three departments—Health & Human Services is in competition with Education, which is America's major capital investment, and Worker Safety and Labor.

Since I became chairman of Appropriations in 1995, I have been on the subcommittee—chairman of the Appropriations Subcommittee on Health and Human Services. With Senator Harkin's concurrence, we have increased the funding from $12 billion to $27 billion. Initially, we asked the Budget Committee for $1 billion and we were turned down, so we took it to the Floor for a fight, and we lost 63–37. But we got out our sharp pencils and found other items to cut to make NIH a priority. So having lost in our effort for $1 billion, the next year we asked for $2 billion, which is the way of Washington. And again, we lost—and this time 52–48. We went back to the Budget and established the priority and put in the $2 billion.

Now it has become fashionable, at least up until last year, when the administration asked for $3.4 billion and we added a little to that to $3.7, so now we are at $27 billion. Next year, the administration has asked for a very slight increase, and that is a difficult matter with budget constraints, but Senator Harkin and I, and the Subcommittee, and the full committee, Senator Stevens being our full committee chairman, are determined to review everything we can to increase the funding for the National Institutes of Health. Now that increase in funding has reflected itself with obesity research funding moving from $128 million in 1998 to over $320 million this year, and in nutrition research moving from under $500 million in 1998 to almost $1 billion this year, and CDC Nutrition and Physical Activity funding moving from $11.5 million in the year 2000 to over $27 million now, and the overall NIH Heart Disease Research funding moving from $75 million in 1999 to $1.9 billion this year. So you can see the enormous increases.

We have some leading experts in the field today, and I will particularize them in more detail as we move through the hearing. We are delighted to have with us today as our lead witness Dr. Julie Gerberding, who is the Director of the Centers for Disease Control and Prevention, a very, very important agency with so many jobs, Bioterrorism, I think, being at the top of the list. The CDC in Atlanta is a premier installation, and 3 years ago, I visited the CDC and was amazed to see a leading scientist in the hallways, and very important research substances in corridors in the closets. And I went back to Washington and put up $170 million as emergency funding. Two years ago, we increased that to $255 million. And I think we are at about $250 million this year.

The reason I say "I think" is because we passed the bill last Thursday night, and it is a thousand pages and I have not read it all yet.

In fact, nobody has read it all. That is one of the luxuries of a democracy.

STATEMENT OF DR. JULIE L. GERBERDING, DIRECTOR, CENTERS FOR DISEASE CONTROL AND PREVENTION, DEPARTMENT OF HEALTH AND HUMAN SERVICES, ATLANTA, GA

Senator SPECTER. The CDC is really an enormously important asset for America today. So thank you for joining us, Dr. Gerberding, and thank you for bringing so much of your staff with us. The traditional time is the 5-minute opening statement, leaving more time for question and answer. I recently attended the memorial service for Ambassador Annenberg, and the time limit for speeches was set at 3 minutes, and former President Ford was limited to 3 minutes, and Secretary of State Colin Powell was limited to 3 minutes, and so was I and 14 other speakers, so I want you to know what a generous time allocation 5 minutes is.

Dr. Gerberding, the floor is yours. And in the absence of staff, Todd Averette has bought a kitchen timer. Why don't you put it in front of Dr. Gerberding so that she can be harassed by the timer?

Dr. GERBERDING. Great. Thank you so much for inviting me here to participate in this hearing. I think this is a critically important topic, even in the time of Bioterrorism. We have many important programs at CDC that we will highlight in the few comments I am making, but I also really want to be on the record as thanking you for the incredible support that you and Senator Harkin have given CDC. The appropriation includes $268 million for building some facilities and about $400 million for activities at CDC promoting healthy lifestyles, and you mentioned the importance of the NIH research in all of this, but I think it is CDC that takes that research and puts it to action in the trench, so that support means everything. And thank you very much.

I am going to just touch on three issues, number (1) What is the problem; and number (2) Why is it important; and number (3) What are we doing about it now, and what should we be doing about it? So if I could have just the first graphic here, I wanted to emphasize a little bit of the comments that you were making about the importance of chronic diseases overall. You can see here in the United States the leading causes of death. You mentioned heart disease and cancer and stroke as important contributors to the cause of death, but if you look at the bottom half of this chart, it shows what the actual causes of death are. This is looking at the same data, but looking at what is the underlying cause of these conditions. And the top three here, tobacco, poor diet, and lack of exercise, are really the things that we can do something about with the kinds of lifestyle interventions that this hearing is focusing on.

I am going to be speaking particularly today about the poor diet, lack of exercise, and its relationship to the epidemic of obesity. On the next graphic, just in very simple picture framework, shows how the epidemic of obesity is progressing across the United States. Looking at this picture of the United States in 1990, the number of States where the prevalence of diabetes was evolving in 5 years, more States had a high prevalence. By 2001, more than 30 States had a prevalence of diabetes of approximately 1 in 12, or greater, so that this is an epidemic that is astonishing. As you mentioned, the number of individuals affected by this is extraordinary; but on the right-hand side, you can see one of the impacts of this epidemic of obesity, and that is the high prevalence of diabetes. So here we

see obesity, here we see diabetes, and they are tracking right along together.

Particularly astonishing is the fact that now 15 percent of kids between 6 and 19 years of age are overweight, and these children are accounting for up to 50 percent of the new cases of diabetes in many communities. So this is an astonishing and sobering problem, and one that, from a CDC perspective, has got to be the highest-priority domestic health issue that we are facing today. This week in Science magazine, there is a whole feature on the science of obesity, looking at it from a genetic perspective, looking at it from an environmental perspective, but I think we see it as a problem that gets boiled down to a couple of real simple facts, and that is that we are taking in more and more calories, and we are exercising less and less, and utilizing fewer calories.

So the gap between what we are eating and what we are expending is continuing to get larger and larger in our society. And this has the consequences that you mentioned. First of all, the chronic diseases of stroke, the cancers including breast, endometrial and colon cancer are affected by this high rate of obesity, and the diabetes that we have already talked about. But the health expenses are enormous. Some estimate that up to 8 percent of our healthcare expenses would be eliminated if we could eliminate the obesity problem, and that is just the direct expenses. If we take into consideration all the indirect costs, including some 32 million days of work lost each year from the complications of obesity, it has a tremendous impact on our society, and we really do need to do something about it.

So I would like to, on the next graphic, just talk a little bit about some of the programs that are currently in place to deal with this. We note just like we did with tobacco, that starting with kids is important. So we have coordinated school heath programs that are in many States, and on the next slide, we have illustrated a youth media campaign that is going on in several States.

PREPARED STATEMENT

Finally, just to mention that we are currently funding 12 States, including Pennsylvania, by the way, to implement programs to address the problem of obesity at the community level through community interventions and so forth. We hope in the future to work with the program that President Bush initiated, the HealthierUS Program. CDC has the lead for this at HHS, but we are working with all of the Department to implement new programs that help us take concrete steps in a broader number of States across the country to really combat obesity. And we look forward to getting those programs off the ground. So with that, I will stop and take questions. Thank you.

[The statement follows:]

PREPARED STATEMENT OF DR. JULIE L. GERBERDING

INTRODUCTION

Good morning. I am Dr. Julie Gerberding, Director of the Centers for Disease Control and Prevention. Thank you for inviting me here today to participate in this important discussion of healthy lifestyles and CDC's programs to support health promotion and disease prevention programs in States and communities.

The United States faces an epidemic of unparalleled proportion, an epidemic that is substantiated by the hard facts. Seven of 10 deaths, or more than 1.7 million each year, are caused by chronic diseases. Heart disease, cancer, stroke, chronic obstructive pulmonary disease (such as asthma, bronchitis, emphysema) and diabetes cause more than two-thirds of all deaths each year. Although 7 of every 10 deaths among Americans are due to chronic diseases, the underlying causes of these deaths are often risk factors that can be successfully modified years before they ultimately contribute to illness and death. Three such factors—tobacco use, poor nutrition, and lack of physical activity—are major contributors to the nation's leading killers. Each year 430,000 deaths (about 20 percent of all deaths) are linked to tobacco use, which causes not only lung cancer and emphysema but also one-fifth of all cardiovascular disease deaths. Obesity is a major contributor to heart disease, diabetes, arthritis, and some types of cancer. Recent estimates suggest that obesity is associated with 300,000 deaths annually, second only to tobacco related deaths.

BURDEN OF OBESITY

Today we face an epidemic of obesity—a major risk factor for heart disease and diabetes. Few of our citizens have healthy nutrition and physical activity levels. For example, only 28 percent of women and 20 percent of men eat at least five servings of fruits and vegetables per day. More than 60 percent of adults do not engage in levels of physical activity needed to provide health benefits. Large numbers of older people are physically inactive, as many as 34 percent of adults aged 65–74 and 44 percent of adults aged 75+. This is of special concern because the number of older Americans is expected to double from 35 million to 70 million by 2003. The impact of this physical inactivity on medical costs is substantial and is likely to grow unless trends in physical activity change among older adults. Currently one-third of total US health care expenditures are for older adults.

In the past 15 years, the prevalence of obesity has increased by over 30 percent among adults. In the past 20 years, prevalence in children and adolescents has increased by 100 percent. More than 15 percent of children and adolescents are overweight, and more than half of children who are overweight have at least one additional cardiovascular disease risk factor, such as elevated cholesterol or high blood pressure. Rates of overweight and obesity have increased in older Americans by almost two-thirds since 1990. Almost 90 percent of middle-aged Americans will develop high blood pressure in their lifetime and nearly 70 percent of Americans with high blood pressure do not have it under control. The cost of diseases associated with obesity has been estimated to be $117 billion per year for direct and indirect costs.

We have already begun to see the impact of the obesity epidemic on other diseases. For example, type 2 diabetes, a major consequence of obesity, has also reached epidemic proportions over the last 10 years. During the 1990's, the prevalence of diabetes increased by 50 percent in U.S. adults. This trend is expected to continue unless there is substantial public health intervention. Although type 2 diabetes was virtually unknown in children and adolescents 10 years ago, it now accounts for almost 50 percent of new cases of diabetes in some communities.

The combination of chronic disease death and disability accounts for roughly 75 percent of the $1.3 trillion spent on health care each year in the United States. Last year, the Surgeon General's Call to Action on Obesity suggested that obesity and its complications were already costing the nation $117 billion annually. By way of comparison, obesity has roughly the same association with chronic health conditions as does 20 years of aging.

The rapid increases in obesity across the population and the burden of costly diseases that accompany obesity indicate that we can no longer ignore it. The speed with which obesity has increased can be explained by changes in society that have increased calorie intake and reduced energy expenditure. Fast food consumption now accounts for over 40 percent of an average family's budget spent on food. Soft drink consumption supplies the average teenager with over 10 percent of his or her daily caloric intake. The variety of foods available has multiplied, and portion size has increased dramatically. Fewer children walk to school, and the lack of central shopping areas in our communities means that we make fewer trips on foot than we did 20 years ago. Hectic work and family schedules allow little time for physical activity. Schools struggling to improve academic achievement are dropping physical education and assigning more homework, which leaves less time for sports and other physical activity. Television viewing has increased. Many neighborhoods are unsafe for walking, and many parks are unsafe for playing. Most office buildings have inaccessible and uninviting stairwells that are seldom used. Many communities are built without sidewalks or bike trails to support physical activity.

STEPS TO A HEALTHIERUS

The President has announced the HealthierUS Initiative, which focuses on nutrition, physical activity, health screening, and behavior change. President Bush's HealthierUS Initiative is based on the premise that increasing personal fitness and becoming healthier is critical to achieving a better and longer life. The HealthierUS Initiative encourages all Americans to be physically active every day, eat a nutritious diet, get preventive screenings, and make healthy choices.

The President's fiscal year 2004 budget request includes an increase of $100 million within CDC to pursue Steps to a HealthierUS. The Steps Initiative advances President Bush's HealthierUS program by focusing on obesity, diabetes, and asthma. Through Steps to a HealthierUS, Secretary Thompson will lead the Department of Health and Human Services (HHS) to reduce the burden of these conditions by promoting healthy choices in nutrition, physical activity, and preventive health care. HHS will provide national leadership for states, communities, and schools. CDC will organize the HHS effort, with full participation by sister agencies—the Health Resources Services Administration, the Administration for Children and Families, the Administration on Aging, and the Agency for Healthcare Research and Quality.

The centerpiece of this initiative will be a single Steps to a HealthierUS cooperative agreement program. This program will be designed to stimulate and integrate public and private sector efforts to improve health. The program will make substantial awards to states and communities to implement effective public health strategies for reducing the burden of diabetes, obesity, and asthma in their populations. States, communities, and schools will also address related risk factors, including a specific emphasis on promoting healthy choices by youth and older Americans. The cooperative agreement program will work in States, communities, and schools to:

—Prevent overweight and obesity
—Prevent development of diabetes in people with pre-diabetes
—Control the complications of diabetes for those with the disease
—Promote healthy youth
—Reduce the burden of asthma

As a part of Steps to a HealthierUS, HHS has undertaken a Healthy Worksite Initiative within the Department's own agencies. Secretary Thompson has asked CDC to lead this effort. CDC welcomes this initiative because it provides the HHS workforce the opportunity to become a model for strategies that can be applied elsewhere within the federal government and by businesses across the United States. CDC is working to provide attractive stairwells in buildings with a campaign that promotes their use and healthier choices in vending machines and cafeterias. We know from our experience that modest and inexpensive changes, such as attractive stairwells with signs promoting their use, can lead to increased physical activity in everyday life. We will soon learn whether similar improvements in nutrition can be achieved by changing and promoting the products sold in vending machines. Widespread changes will not be achieved overnight. However, if we can understand how to make changes in our own workplace that improve nutrition and physical activity, we are much more likely to be successful elsewhere. Given the size of the population that we are trying to reach, both in our organization and in our nation, we cannot rely solely upon interventions that target one person at a time. Instead, the prevention of obesity and related conditions will require coordinated policy and environmental changes that affect large numbers of people simultaneously. CDC has developed effective prevention and treatment strategies through our State obesity/physical activity/nutrition programs, State coordinated school health programs, the youth media campaign, partnerships with other organizations, and an applied research agenda to develop and refine new approaches. Today I will focus on CDC's current efforts that set the stage for achieving Steps to a HealthierUS.

Preventing Overweight and Obesity.—Today we know that a few changes can improve the health of a larger number of persons. These include the development of sophisticated marketing messages designed to increase health behaviors among youth; reduce television viewing in children and adolescents; and increase physical activity for the population. We now have evidence-based strategies for the promotion of physical activity that include recommendations like physical education programs in schools or access to and promotion of recreation facilities. These approaches represent strategies that we are pursuing today, while continuing the research necessary to identify additional effective prevention approaches for States and communities. We will not successfully reduce the burden of chronic diseases without an approach that integrates nutrition and physical activity strategies across a variety of settings and populations. For example, if physicians begin counseling their patients to walk more, their patients will not be able to do so unless their neighborhood has sidewalks or is a safe place to walk. We also know that we must raise the aware-

ness of people with risk factors for Cardiovascular Disease like high cholesterol and blood pressure and emphasize the link to prevention through physical activity and good nutrition. As you may know, a study from Philadelphia has shown that the areas with the highest death rates from nutrition related diseases coincide with the areas of the city that lack supermarkets. Inner city residents of Philadelphia will not be able to increase their fruit and vegetable intake to prevent cancer and heart disease without access to supermarkets.

Currently CDC funds 12 States, at a capacity-building level (average award of $450,000) to prevent and reduce obesity and its related chronic diseases. Our support permits States to develop and test nutrition and physical activity interventions to prevent obesity through strategies that focus on policy-level changes (e.g., the State assesses and rates childcare centers for nutrition and active play) or supportive environments (e.g., competitive pricing of fruits and vegetables in school cafeterias). Examples of these approaches can be illustrated by the experience in three States.

The Pennsylvania Department of Health received funding from CDC to develop a State Nutrition and Physical Activity Program to Prevent Obesity and Related Chronic Diseases in July 2001. The Department convened stakeholders to develop a comprehensive and coordinated nutrition and physical activity plan. The plan incorporates a broad range of activities to promote nutrition and physical activity to prevent obesity. An initial outcome of the planning process was the creation of PANA (Pennsylvania Advocates for Nutrition and Activity), a statewide coalition to coordinate the implementation and evaluation of the state nutrition and physical activity plan. On February 11, PANA released a community version of the plan at a meeting of representatives from the six health regions across the state. Using the plan as a guide, PANA will focus efforts around community environments, youth and families, and healthcare practices. PANA will also coordinate communication, information advocacy, and research and evaluation for the priority areas.

The State of Rhode Island is using CDC's School Health Index as an intervention tool to address policy and environmental change within four high-risk elementary schools. Selected schools have at least a greater than 30 percent Hispanic/Latino enrollment and 50 percent or more of the student population is eligible for free or reduced lunch programs. Based on the School Health Index model, four local school advisory committees for each school will tailor school policy and program intervention components to fit within their school structure and population while maintaining a common purpose and shared activities across schools. Program expectations include increased existence of policy and environmental supports for nutrition and physical activity.

The North Carolina Healthy Weight Initiative has involved communities and an energetic statewide task force comprised of community leaders and health professionals. The group has developed a curriculum known as "Color Me Healthy" for 4 and 5 year olds that focuses on interactive learning opportunities to promote eating healthy and being active. Through an innovative collaboration with the USDA, "Color Me Healthy" is being implemented in 71 counties through cooperative extension and WIC, the Supplemental Food Program for Women, Infants and Children.

CDC is also working with the U.S. Administration on Aging to collaborate on 10 Aging State Projects to conduct health promotion demonstration projects. CDC currently funds 29 states to prevent high blood pressure and cholesterol. As an example, public health experts in Virginia are working with the American Heart Association to raise awareness among young African Americans of how high blood pressure affects your health and of why it is important to control it.

These examples illustrate the importance of starting early to impact health behaviors. In addition, improving physical activity and nutrition prevents deadly chronic diseases and also helps control their consequences in those who become ill. Nutrition and physical activity are key to reducing harm caused by heart disease, stroke, and cancer, as well as diabetes.

PREVENTING THE DEVELOPMENT OF DIABETES IN THOSE WITH PRE-DIABETES

Last year NIH's Diabetes Prevention Program demonstrated that diet, exercise, and modest weight loss decreased the incidence of diabetes in persons at very high risk for developing diabetes by almost 60 percent, which was twice as effective as the pharmaceutical therapy in the comparison group. These results emphasize the importance of lifestyle modification in the treatment of obesity and prevention of diabetes. Influencing lifestyle choices is particularly important for older Americans because of the high prevalence of diabetes in this population. In 1999, the prevalence of diagnosed diabetes among people aged 65–74 was more than 13 times that of people less than 45 years of age. We are currently working with health care organiza-

tions to begin the process of translating these approaches into strategies that can be used in primary care.

CONTROL THE COMPLICATIONS OF DIABETES FOR THOSE WITH THE DISEASE

CDC provides leadership and funding to diabetes control programs nationwide. We also work with many partners to provide data for sound public health decisions, inform the public about diabetes, and ensure good care and education for the American with diabetes. Many complications from diabetes can be prevented, such as blindness, kidney disease, amputations, and cardiovascular disease.

Timely data and public health research are essential to understanding how diabetes affects different populations and improving quality of care. CDC analyzes information from several national data sources and works to translate scientific data into higher quality care. As an example of how we work with partners in research, CDC has teamed up with managed care organizations and community health centers to assess how standards of care are applied in clinical care settings, to explore variations in the quality of diabetes care, and to test strategies to move existing care practices closer to optimal standards.

In fiscal year 2002, CDC provided $61.8 million in limited support to 34 states, and 8 territories for Core Diabetes control. An additional 16 states received support to implement Comprehensive programs. For example, in California, the Diabetes Control Program assessed the effects of case management on blood glucose levels among Medicaid patients. Results revealed that improved nutrition education, better glucose monitoring instruction, and improved instructions for care reduced blood glucose levels which decreased the risk of complications and reduced health care costs.

PROMOTING HEALTHY YOUTH

Coordinated School Health Program

We like to think of ourselves as a youthful nation focused on healthy lifestyles, but behind the exciting media images of robust athletes and Olympic Dream Teams is a troubling reality—a generation of young people that is in large measure inactive, unfit, eating poorly, and at an alarming rate, becoming obese. CDC's Comprehensive School Health Program focuses on improving health behaviors in youth.

Tobacco use remains the single leading preventable cause of death in the United States, yet a large percentage of our young people continue to smoke cigarettes. Each day, approximately 5,000 young people try their first cigarette, and 3,000 become daily smokers. Rates of smoking among high school students actually increased during much of the 1990s. Although the rates have decreased over the past few years, 29 percent of U.S. high school students currently smoke cigarettes.

Among the sectors of society that can influence young people to make sound health decisions, schools have a particularly important role. Every school day, more than 53 million young people are in our nation's 129,000 schools, which are an important source of health education and provide many opportunities for young people to practice healthy behaviors. Studies have documented that:

—School-based health promotion programs can effectively improve physical activity and eating behaviors.
—Such programs can also reduce tobacco use among youth.
—Schools can improve the nutritional quality of foods offered to and consumed by students as part of school meals.
—Schools can use creative marketing approaches to improve the nutritional quality of foods that students buy outside of the school meals program.
—Schools can increase the amount of time that students are active during physical education.

Beyond the school grounds, schoolchildren face substantial challenges to healthy living. School programs can support them in making healthy choices. CDC emphasizes the importance of a multi-component, coordinated school health approach that includes classroom health education, high-quality physical education, regular opportunities to participate in physical activity in addition to physical education, nutritious and appealing school meals, opportunities to make healthy eating choices through vending machines and other settings outside of school meals, and strong policies requiring and enforcing tobacco-free campuses. Furthermore, school-based programs are more likely to have a substantial impact on youth behaviors when they are part of a broader, comprehensive health promotion approach that includes community-based activities.

CDC currently supports coordinated school health programs in 20 States that help ensure that students receive effective health instruction in nutrition, physical activity, and tobacco use prevention, integrated into a school health program that in-

cludes health services, quality physical education, nutritious school meals, and counseling and social services that remove barriers to students' academic success. Through this program, State educational agencies work with State health departments to:

—Plan, implement, and evaluate healthy lifestyle programs.
—Provide training to educators on how to promote healthy lifestyles.
—Monitor youth lifestyle behaviors and programs to influence them.
—Develop and implement policies to support effective implementation of school health programs at the local level.
—Build effective partnerships with other government agencies and non-governmental organizations.

I would like to describe some important activities supported by CDC's comprehensive school health program.

—California has included health in new statewide standards for teacher training, and has added physical fitness test results to local school districts' accountability report cards.
—West Virginia has adopted some of the strongest standards in the nation for the nutritional quality of foods and beverages offered on school campuses, and it implements a week-long nutrition symposium for food service and other school staff, to help them implement the standards.
—The Rhode Island Department of Education has partnered with a community-based agency to provide nutrition education services and programs to more than 220 schools.
—The Wisconsin Department of Public Instruction has worked with the University of Wisconsin to institute an annual Best Practices in Physical Activity and Health Education Symposium that showcases exemplary school health promotion programs.

Youth Media Campaign

Congress appropriated $193.4 million over the last two fiscal years to develop and launch the CDC Youth Media Campaign using the same strategies used by commercial marketers to reach our target audience of 9–13 year olds. The campaign, branded as "VERB, It's what you do," uses the best principles of marketing and communications to deliver messages to young people about the importance of building healthy habits early in life with the full knowledge that today's youth are very savvy about the messages they receive. This approach has proven successful in preventing tobacco use in youth. The Youth Media Campaign was launched in June of 2002 with the focus on getting kids excited about increasing the amount of physical activity in their lives and helping their parents to see the importance of physical activity to the overall health of their kids. The early reports from the campaign's evaluation show very exciting results with over 90 percent of the target audience reporting they have seen the ads an average of almost 30 times. Most importantly, young people are not just seeing our ads and messages, they are acting on them. Out of the possible universe of 22 million young people in this age group, almost 3 million of them have already acted. They have gone to a VERB event, participated in a contest or sweepstakes, or have logged on to our website.

The Verbnow.com website—in the first four weeks of being fully live—got 1.1 million unique visitors who clicked down an average of 4.4 times. These young people report they understand the messages and intent of the campaign, and they think the campaign is "cool and fun." In addition to advertising for young people and their parents, the campaign uses events, website, viral and guerrilla marketing (essential marketing concepts for young people), and partnerships with community organizations to enhance the reach and effectiveness of these important health messages.

A nine-city tour with the Nickelodeon Show began in October 2002 and concludes in April 2003. In addition, by April 2003 the campaign will have taken part in more than 200 community and ethnic events across the country. We will have the first evaluation results in fall 2003, allowing us to assess the impact of the campaign on youth activity.

REDUCING THE BURDEN OF ASTHMA

Despite evidence that asthma death rates are leveling off and asthma hospitalization rates are declining, asthma's impact on health, quality of life, and the economy remain substantial. Rates of severe asthma continue to disproportionately affect poor, minority, inner-city populations. For example, African Americans visit emergency departments, are hospitalized, and die due to asthma at rates three times higher than rates for white Americans.

The initial onset of asthma cannot yet be prevented or cured. However, asthma can be controlled, and people who have asthma still can lead quality, productive

lives. Asthma can be controlled by following a medical management plan and by avoiding contact with environmental "triggers" such as cockroaches, dust mites, furry pets, mold, tobacco smoke, and certain chemicals.

In 1999, CDC created the National Asthma Control Program. The goals of the program are to reduce the number of deaths, hospitalizations, emergency department visits, school or work days missed, and limitations on activity due to asthma. CDC is working with over 90 partners (state health departments, school districts, and national organizations) to collect and analyze data on an ongoing basis to understand the "who, what, and where" of asthma, ensure that scientific information is translated into public health practices and programs to reduce the burden of asthma, and ensure that all stakeholders have the opportunity to be involved in developing, implementing, and evaluating local asthma control programs.

CONCLUSION

Obesity, diabetes, asthma and other chronic diseases have increased substantially over the past decade and take a heavy toll on the health of the United States. CDC programs are addressing these problems, but many are in the early stages of development. We are committed to reducing the burden of these conditions by promoting healthy choices in nutrition, physical activity, youth risk taking and preventive health care. Through Steps to a HealthierUS, we look forward to working with you to foster healthy behaviors and reduce illness and premature death.

Thank you for the opportunity to testify on this most important topic. At this time I would be happy to answer any questions.

Senator SPECTER. Thank you very much, Dr. Gerberding. I very much appreciate your service at the CDC, and the outstanding record you bring to the position. I think it important to note for the record that you are also Associate Clinical Professor of Medicine at Emory, went to Case Western for both your bachelor and MD, and were the chief medical resident right here at University of California at San Francisco, and had your masters of public health at the University of California at Berkeley.

When you specify the final budget figure of $268 million, the budget process is very complicated, so that I was unable to give you a precise figure as in so many lines because I think we started in excess of $270 million, and then there were across-the-board cuts, and then there was reinstatement. And then some items were exempted from the cuts, like veterans. We completed the budget in 10 days. We did not fight on the budget on anything but Defense last year on only two bills—the Department of Defense and Military Construction.

I was recently in the Middle East and talked to the new Finance Director of the Palestinian Authority where they have a budget, but last year, the U.S. Senate did not have a budget—a curious contrast—so that when we finally finished this bill very late last Thursday evening, which enabled us to come out here ahead of the snow, the 1,000 pages is sort of notorious because it was reported all around, and nobody had read the 1,000 pages as the process was put together and staff—I have a very extraordinary staff—Betty Lou Taylor is one of the most knowledgeable—perhaps the most knowledgeable of all the staffers on Capitol Hill, and our section was under a very careful control, as was each of the others, but in terms of somebody going through the 1,000 pages.

So I am pleased to find out what your budget is here at $268 million on the construction alone, and I know how important that is, so we are going to be providing in excess of $1 billion. We have gotten three pretty good starts going up another 3 years. I would like you to put the chart back up which had all the factors of tobacco, diet, in descending order, as to the causes of death. What progress

do you think we are making, Dr. Gerberding, on the tobacco issue, on reducing the use of tobacco?

Dr. GERBERDING. Well, we have mixed news. Over the decade of the 1990s, youth tobacco use, which is one measure we track through a survey that we do in all the States, actually increased. But over the last couple of years now, we are beginning to see some modest reductions in the proportion of kids in high school who smoke. I think, overall, about a third of kids have ever used tobacco at least once in their high school, but the number who would be characterized as smoking has gone down just a few percentage points.

We think this might be in part due to the school education programs that have been implemented, and also to the fact that the price of a pack of cigarettes has gone up substantially. We know that is an important factor in influencing tobacco use really in all ages, but particularly in kids who do not have pocket change.

Senator SPECTER. Joan and I were in Palm Springs, and we went into Rite Aid, and they had a sign up—you get carded for buying cigarettes up to 40—and my wife was very offended she was not carded.

I asked the clerk, "How do you card up to 40?" And the answer was, "Well, they do not want arguments." If you card at 18, a lot of people argue with you, but if you card up to 40, nobody can argue with you. What more should we do?

We just had enormous settlements in litigation, lots of money going to the States, more than $11 billion to Pennsylvania. One of the concerns I have is that in some States, the money is being used for other than health purposes, some for highway construction, and I think that is a bad deal if you produce all this money for tobacco settlements. But what more can be done? What more should our subcommittee take the lead on in trying to discourage the use of tobacco, especially among young people?

Dr. GERBERDING. Yes, this is a complex problem, and it requires a lot of different solutions from a lot of different directions. From a Federal perspective, I think enhancing the educational and the school-based programs is a very, very important component, and we can do more in that regard. We have programs in all States, coordinated tobacco programs in all States. But the penetration and the level of support in individual jurisdictions is still variable. We know that the younger you intervene and the more kids grow up with a culture that does not support tobacco use, the more likely they are to sustain abstinence from tobacco as they get into the teenage years.

So I would say if there was one thing we could do, it would be to focus on more school-based programs.

Senator SPECTER. And what is the right age to start?

Dr. GERBERDING. I do not think there is an age that is too young when it comes to tobacco. So as soon as kids are in school, those messages about the health consequences——

Senator SPECTER. Should have the message start with "Healthy Start?"

Dr. GERBERDING. Yes.

Senator SPECTER. 3?

Dr. GERBERDING. I think as soon as kids are old enough to understand what tobacco is, they ought to know that it is bad.

Senator SPECTER. Earlier than 3?

Dr. GERBERDING. Well, I do not think we have programs in place to address that, but it would be at least worth asking the question.

Senator SPECTER. If we do not have programs in place, that is what we are here for.

Dr. GERBERDING. Exactly, exactly.

Senator SPECTER. To put programs in place. Poor diet and lack of exercise, that is number 2. What did you think of the law suit as to McDonald's for making people fat?

Dr. GERBERDING. The fast food industry——

Senator SPECTER. The case was dismissed, but it was brought on the analogy of putting out a product for consumption with a reckless disregard for the safety of the people who are going to buy the product, which is the tobacco theory, even though the warnings are on it. Do you think that was the right decision, or should there be a public duty on restaurants like fast food chains to take care not to feed unsuspecting people food which is going to be injurious to their health?

Dr. GERBERDING. We do not have scientific evidence that links fast foods, per se, to obesity. So right now, the science is not there to say that is an important component of the problem.

Senator SPECTER. Need an extra appropriation?

Dr. GERBERDING. We could discuss it.

Senator SPECTER. We have not had evidence yet to link Agent Orange to many of the maladies that came out of the Vietnam War.

Dr. GERBERDING. Yes. And I think that we certainly support that consumers need to understand what is in the food that they are eating, including what is in the fast food. But what we are doing with the fast food industry that I think is a very proactive thing is to engage them in creating fast foods that are healthier choices for people. Secretary Thompson had——

Senator SPECTER. What are you doing to engage them?

Dr. GERBERDING. The first thing is to just sit down with the leaders of those industries——

Senator SPECTER. Are you doing that?

Dr. GERBERDING. Yes, we are doing that. The Secretary met with them a few weeks ago in Washington, and we are looking at ways that they can help us. For example, they know an awful lot about why people make certain food choices, and if we had that kind of information, it might help us get people to make healthier food choices. So there is a lot of knowledge that they have and can share with us, and so far, it looks very optimistic that they would be willing to deal with this problem in a constructive way, rather than through a punitive or a regulatory manner. So that is the direction we are going right now.

Senator SPECTER. So they—your point is, one of which is pretty obvious, they do research to figure out how to attract people to certain foods?

Dr. GERBERDING. Exactly.

Senator SPECTER. Yes.

Dr. GERBERDING. And if we knew—if we had that information, or we were able to do that kind of public health research at CDC, it

would certainly help us understand what would make the right foods more attractive, particularly for kids.

Senator SPECTER. Are they willing to share some of their trade secrets?

Dr. GERBERDING. Well, I do not know if we have gotten that far in the negotiations, but I think it will have to come down to the level where somebody has got to have that information and we need it.

Senator SPECTER. That might be a good subject for a hearing in Washington with the fast food people.

Dr. GERBERDING. I agree.

Senator SPECTER. You might have to be the lead witness again.

Dr. GERBERDING. Well, I am getting some practice at it.

Senator SPECTER. Well, it would be interesting to be privy to what they have found on what attracts people, and how you attract people to other foods. That is something we are going to be exploring later with Dr. Ornish in some greater detail, but it would be interesting to bring them in.

That law suit against McDonald's drew a lot of ridicule and was dismissed, but it is not too far-fetched, especially as there is more information developing. And if their research showed that there are ways to encourage people to eat other kinds of food, and if they definitely want a way to make it cheaper and more profitable without regard for health, that could be a factor—like the Pinto case where they put the gas tank in the back at a cost of $4, where to move it up front would cost $8. That kind of engineering in food might be very informative as well.

Without going into all of the details now, Dr. Gerberding, our subcommittee would be interested in what your recommendations would be on the entire list going down—alcohol, firearms, motor vehicles, illicit drug use, et cetera—as to what might be undertaken to change behavior on those lines. Would you put up the other chart on Steps to Better Health?

You have there "Prevent the Development of Diabetes." How do you do that?

Dr. GERBERDING. Well, the first important component of that is to prevent obesity because obesity is the number one risk factor for at least adult onset diabetes, and now, increasingly, for that kind of diabetes among children. So the big ticket item here is to prevent obesity. But even if we have an obese population, improving fitness will reduce the onset of diabetes, and will reduce the complications of diabetes.

Senator SPECTER. Do you know the cause of diabetes?

Dr. GERBERDING. Well, there are many causes. One important etiology of the early onset diabetes is probably genetic and immunologic. But in the older population, the theory is that the cells become resistant to the effects of insulin, in part because of the obesity and probably the changes that are occurring at the receptors for the insulin hormone, so that people with adult onset diabetes have insulin in their bodies, but their cells do not react to it normally. So it takes more insulin to control blood sugar than it really should. When you lose weight then, in many people, you can restore that sensitivity to the insulin, and so they do not have dia-

betes, or they have fewer complications with controlling their blood sugar.

Senator SPECTER. You had a line in your testimony about a diet and its impact on colon cancer. Can you be specific as to a cause of colon cancer related to diet?

Dr. GERBERDING. Well, there are various ways in which diet can affect colon cancer. We got clues to this in looking at populations that seemed to be at higher risk for colon cancer, like people in this country whose diet is very different from people in, for example, some Asian countries that have a lower risk. There are certain foods, you know, the cruciferous vegetables like Brussels sprouts, cauliflower, and broccoli that seem to be associated with a lower colon cancer risk.

Senator SPECTER. How do you quantify that statistically, scientifically?

Dr. GERBERDING. Well, that is part of the kind of public health research we do at CDC where you can, for example, look at people who have colon cancer, and compare them to similar people who do not, and then compare their diets. And if you see that, in the people with the cancer, there are fewer of these good vegetables being taken in, that is a pretty strong hint that the diet can be a factor. And by doing that kind of research in larger populations, and repeating it in different kinds of people, over time you develop a body of evidence that is increasingly strong that diet really is an important risk factor for colon cancer.

Senator SPECTER. So when you talk to people about their diet and they tell you that they eat Brussels sprouts, are they that specific, really? Cauliflower?

Dr. GERBERDING. Well, there are tools. There are tools that are developed to get very precise information about people's dietary intake. Of course, we always remember what we have eaten in the last 24 hours better than what we have eaten in the last 3 days or 3 months. But there are valid scientific methods for really getting a picture of people's diets, both from the standpoint of kinds of foods, but also how foods are prepared and what the caloric and fat and micronutrient composition of those foods might be. And you can also do it in a prospective sense by giving people a food diary and then asking them to carefully record on a daily basis the kind of food intake that they are having.

Senator SPECTER. How much of an educational effort is there in this country generally on trying to influence people on their diet on these issues?

Dr. GERBERDING. You know, one of the ironies of this is that at any given time, about half of the women in America are trying to lose weight. And we have a large capacity to be concerned about the cosmetic implications of how we look or what we eat, but I do not think the emphasis has been on the health aspects of our diet and our weight. I think we need to do a lot more to educate people about the importance of nutrition and the kinds of consequences that poor nutrition really has. I mean, this obesity is malnutrition. It is just a different kind of malnutrition in the developed world—and people do not get it. They do not understand how critical this is, not just to their appearance, but to the kinds of diseases that we are talking about here.

Senator SPECTER. What role should the Federal Government play in trying to promote that education?

Dr. GERBERDING. I think we have a lot more that we can be doing about getting the word out. There is a great need for research, for public health research on what are the determinants of people's food choices, what are the determinants of their——

Senator SPECTER. Research on determinants for people's food choices?

Dr. GERBERDING. Their food choices, exactly.

Senator SPECTER. Well, what research have you undertaken so far on that?

Dr. GERBERDING. Well, part of this is just getting off the ground. CDC does not have a large research enterprise in this particular area, but we do collaborate with NIH.

Senator SPECTER. Why not?

Dr. GERBERDING. Well, I think part of it is a budget issue. As you——

Senator SPECTER. How much more money do you need?

Dr. GERBERDING. I will have to get back to you for the record on that because it is not something that I have really had a costing-out——

Senator SPECTER. Will we have to give you an earmark?

Dr. GERBERDING. I think we would like to be able to describe for you the priorities of what needs to be done and have a discussion about what it would take to do it——

Senator SPECTER. If we give you an earmark, then the subcommittee will be criticized for politicizing scientific choices.

Dr. GERBERDING. We can get back to you with some ideas on how to go forward on this.

Senator SPECTER. There is tremendous competition among all the ailments—Alzheimer's, cancer, Parkinson's, and we stay away from the effort to tell you anything——

Dr. GERBERDING. I appreciate that——

Senator SPECTER [continuing]. Specifically about how you divide up your budget, on the ground that we are not competent to do that.

Dr. GERBERDING. One of the ways that I think about this——

Senator SPECTER. Of course, we are competent to go to war, but not to tell you, not to tell you how to allocate your budget.

Dr. GERBERDING. One of the ways that I would think about this is not so much what do we need to do for diabetes or heart disease, or any of these things, but the kind of public health research that we need answers to are: "What is the best way to engage people in healthier decisions for a variety of these issues? What are the best ways to communicate with kids?" You know, kind of the cross-cutting ways of deploying the health information that our research at NIH gets out. How can we take advantage of that and implement it? And that is kind of a cross-cutting framework for this, that we are actually working on how to get that across to——

Senator SPECTER. Do you have any clinical trials on these issues?

Dr. GERBERDING. We do not have any prospective clinical trials. We have intervention projects. We are going into communities and trying things that we think are going to work.

Senator SPECTER. What is an intervention project?

Dr. GERBERDING. For example, if we go into a school and try to work with the principal to change the vending machines and change the menu in the school cafeteria, engage the PTA and the parents' organizations in changing the culture of eating in that school, that can lead to improvements in nutrition, and——

Senator SPECTER. How much of that do you do?

Dr. GERBERDING. Well, we have programs like that right now in 12 States where we are experimenting with different strategies——

Senator SPECTER. Pennsylvania and Ohio, and what other 10 States?

Dr. GERBERDING. Pennsylvania is one of the States, California is one of the States, and I can tell you in a second—the other States are Colorado, Connecticut, Florida, Maine, Michigan, Montana, North Carolina, Rhode Island, Texas, and Washington State.

Senator SPECTER. Does Senator Harkin know that Iowa is not included?

Dr. GERBERDING. I will make sure he does.

Senator SPECTER. No, you better make sure he does not.

Well, thank you very much, Dr. Gerberding. This is a much more relaxed hearing than the subcommittee in Washington.

Dr. GERBERDING. I agree.

Senator SPECTER. You have testified many times there, but you have never testified this long, have you?

Dr. GERBERDING. No, sir.

Senator SPECTER. Well, there was no ringing of the bell for votes—one of the advantages of being in the field. Thank you very much.

Dr. GERBERDING. Thank you.

Senator SPECTER. I will call Panel 2, Dr. Dean Ornish, Mr. Glenn Perelson, Mr. Mel Lefer, Dr. Judith Stern, Dr. Adam Drewnowski, Dr. Naomi Neufeld, Ms. Danielle Bailey, Ms. Lee Ida Boyd-Bailey, and Ms. Leslie Mikkelsen.

STATEMENT OF DR. DEAN ORNISH, PRESIDENT AND DIRECTOR, PREVENTIVE MEDICINE RESEARCH INSTITUTE, SAUSALITO, CA AND PROFESSOR OF MEDICINE, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, SAN FRANCISCO, CA

ACCOMPANIED BY:

GLENN PERELSON, NATIONAL MARKETING DIRECTOR, LIFESTYLE ADVANTAGE

MEL LEFER, PENNGROVE, CA

Senator SPECTER. Our lead witness is the world-renowned Dr. Dean Ornish, founder, president and director of the Preventive Medicine Research Institute in Sausalito, California, and Clinical Professor of Medicine at the University of California at San Francisco. He earned a bachelor's degree from the University of Texas in Austin and received his medical training at the Baylor College of Medicine, Harvard Medical School, and Massachusetts General Hospital. We had a hearing at the subcommittee last May on "Reversing Heart Disease" and the impact of stress. Dr. Ornish is the author of many books, three of which I have read, and has a program for reversing heart disease, and has a branch of it called CADRe at Walter Reed Hospital, which I personally participated in. Dr. Ornish, thank you for joining us and the floor is yours.

Dr. ORNISH. Well, thank you, Senator. It is a great pleasure being here. I just want to begin by applauding you for bringing so much awareness and attention to this area that I think is so important for the health of our country, both physically and metaphorically. As you know, for the last 25 years, I have directed a series of studies demonstrating first that the progression of even severe heart disease often can begin to reverse if people make much bigger changes in diet and lifestyle that, until then, people had been recommending.

We have been able to show in a series of studies, ironically using very expensive, high-tech, state-of-the-art measures, how powerful these very simple and low-tech and low-cost interventions can be, and how quickly they can occur, that within weeks, people who are having severe chest pain or angina become essentially pain-free. And Mel Lefer is one of the people who went through one of our early studies who is here today to put a more human face on that.

Part of what we have learned is what really works and what does not work, as Dr. Gerberding was talking about in terms of what really motivates people to make and maintain changes in diet and lifestyle. And part of what we have learned does not work is fear of dying because people just do not want to think about it, it is too scary. Whereas fear of dying does not work that well, joy of living does. And part of what we have learned is that when people make changes in their diet and quit smoking and exercise and manage stress better, they often feel so much better so quickly that it re-frames the reason for making these changes from prevention and risk factor reduction, which so many people think are really boring, especially kids, to feeling better.

Of course, there is no point in giving up something that you like unless you get something back that is better, and quickly.

So what we have been able to show is that heart disease is reversible. Beginning in 1993, we began training hospitals around the country through our non-profit institute. We have trained about 30 so far, and we found that this was not only medically effective, but also cost-effective, and that one of the problems in going to insurance companies was that they were saying: "Well, we do not want to pay for diet and lifestyle because that is prevention and we do not pay for prevention because it takes too long to see the benefits. And 30 percent of people change insurance companies every year, so why should we spend our money today for some future benefit that someone else is going to get?"

We re-framed that by saying that, for people who choose this as a direct alternative to things like bypass surgery and angioplasty, the cost savings occur dramatically and immediately. The skepticism was, could people make these changes? And we were able to show that almost 80 percent of the people who were eligible for a bypass or angioplasty were able to safely avoid it, and the insurance companies in this case, Mutual of Omaha, saved almost $30,000 a patient.

Then, more recently, Highmark Blue Cross/Blue Shield in your home State of Pennsylvania began not only covering the program and reimbursing it, but also providing it. And they found—and Glenn Perelson will talk more about this—that in their first 350 people, 348 avoided surgery and they saved more than $17,000 a

patient. And as you know, and in part because of your leadership, Medicare is now reimbursing 1,800 patients to go through this program. And we are hoping that if Medicare finds the same cost savings and medical outcomes that we have already shown in two earlier demonstrations, that they will make this a defined benefit, and then all Americans will have access to it. And other insurance companies will follow their lead.

I will be presenting at the American Neurological Association's Annual Scientific Meeting in Chicago in April the results of a study we have been doing the last several years to see if early prostate cancer can be reversed through making similar changes in diet and lifestyle, and our early data indicate that it may.

Senator SPECTER. What was that that could be reversed?

Dr. ORNISH. Prostate cancer. We found that—we took men that had biopsy proven prostate cancer who had elected for reasons unrelated to our study not to be treated. We randomly divided them into two groups. Half of them went on our program and half of them did not. And what we found was that PSA levels, Prostate-Specific Antigen, a marker, as you know, for prostate cancer, improved or went down in the group that made these changes, and went up or got worse in the control group. The differences between the groups were highly significant and one of the interesting findings was, just as we found in the cardiac studies where we found a dose response correlation between adherence to the lifestyle program and changes in the amount of blockages in their coronary arteries, we found a direct correlation between adherence to the lifestyle program and changes in their PSA.

We then added the serum of these patients to a standard line of prostate tumor cells growing in tissue cultures around the country called the LNCaP cell, and we found that the patients who made lifestyle changes inhibited the growth of prostate tumors much more than those who did not—also in direct proportions of their adherence. And there was a 10-fold difference between the two. And finally, I have been consulting recently with McDonald's and with Pepsi to try to encourage them to make healthier foods, and if you are interested, we can talk more about the kind of receptivity that I am finding now that did not exist even 1 or 2 years ago, in part because of the fear of litigation that you talked about. That is my 5 minutes.

[The statement follows:]

PREPARED STATEMENT OF DR. DEAN ORNISH

INTRODUCTION AND BACKGROUND

Mr. Chairman, distinguished colleagues, thank you very much for the privilege of being here today. My name is Dean Ornish, M.D., founder and president of the nonprofit Preventive Medicine Research Institute and Clinical Professor of Medicine at the School of Medicine, University of California, San Francisco (UCSF).

For the past 25 years, my colleagues and I at the Preventive Medicine Research Institute have conducted a series of scientific studies and randomized clinical trials demonstrating, for the first time, that the progression of even severe coronary heart disease often can be reversed by making comprehensive changes in diet and lifestyle, without coronary bypass surgery, angioplasty, or a lifetime of cholesterol-lowering drugs.

These lifestyle changes include stress management techniques (yoga-based stretching exercises, breathing techniques, meditation, imagery, and progressive relaxation); a very low-fat, plant-based, whole foods diet; moderate exercise; smoking

cessation; and psychosocial support groups. When these lifestyle causes are addressed, then improvement in coronary heart disease may begin to occur much more quickly than had previously been documented.

We tend to think of advances in medicine as a new drug, a new surgical technique, a laser, something high-tech and expensive. We often have a hard time believing that the simple choices that we make each day in our lives—what we eat, how we respond to stress, whether or not we smoke, how much we exercise, and the quality of our social relationships—can make such a powerful difference in our health and well-being, even in our survival, but they often do.

When we treat these underlying lifestyle causes of heart disease, we find that the body often has a remarkable capacity to begin healing itself, and much more quickly than had once been thought possible. On the other hand, if we just literally bypass the problem with surgery or figuratively with drugs without also addressing these underlying causes, then the same problem may recur, new problems may emerge, or we may be faced with painful choices—like mopping up the floor around an overflowing sink without also turning off the faucet.

For example, one-third to one-half of angioplastied arteries restenose (clog up) again after only four to six months, and up to one-half of bypass grafts reocclude within only a few years. When this occurs, then coronary bypass surgery or coronary angioplasty is often repeated, thereby incurring additional costs. Over $30 billion were spent in the United States last year just on these two operations, many of which could be avoided by making comprehensive changes in diet and lifestyle, including stress management techniques.

In our research, we use the latest high-tech, expensive, state-of-the-art medical technologies such as computer-analyzed quantitative coronary arteriography and cardiac PET scans to prove the power of ancient, low-tech, and inexpensive mind/body interventions. Below is a summary of some of our scientific studies:

CAN LIFESTYLE CHANGES REVERSE HEART DISEASE?

We began conducting research in 1977 to determine if coronary heart disease is reversible by making intensive changes in diet and lifestyle. Within a few weeks after making comprehensive lifestyle changes, the patients in our research reported a 91 percent average reduction in the frequency of angina. Most of the patients became essentially pain-free, including those who had been unable to work or engage in daily activities due to severe chest pain. Within a month, we measured increased blood flow to the heart and improvements in the heart's ability to pump.[1 2] And within a year, even severely blocked coronary arteries began to improve in 82 percent of the patients.[3] The improvement in quality of life was dramatic for most of these patients.

These research findings were published in the most well-respected peer-reviewed medical journals, including the *Journal of the American Medical Association, The Lancet, Circulation, The New England Journal of Medicine, The American Journal of Cardiology,* and others. This research was funded in part by the National Heart, Lung, and Blood Institute of the National Institutes of Health.

In the Lifestyle Heart Trial, we found that most of the study participants were able to maintain comprehensive lifestyle changes for at least five years. On average, they demonstrated even more reversal of heart disease after five years than after one year. In contrast, the patients in the comparison group who made only the moderate lifestyle changes recommended by many physicians and agencies (i.e., a 30 percent fat diet) worsened after one year and their coronary arteries became even more clogged after five years.[4 5]

Thus, instead of getting worse and worse, these patients who made comprehensive lifestyle changes on average got better and better. Also, we found that the incidence of cardiac events (e.g., heart attacks, strokes, bypass surgery, and angioplasty) was 2.5 times lower in the group that made comprehensive lifestyle changes after five years. Cardiac PET scans revealed that 99 percent of these patients were able to

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[1] Ornish DM, Scherwitz LW, Doody RS, et al. Effects of stress management training and dietary changes in treating ischemic heart disease. *JAMA.* 1983;249:54–59.

[2] Ornish DM, Gotto AM, Miller RR, et al. Effects of a vegetarian diet and selected yoga techniques in the treatment of coronary heart disease. *Clinical Research.* 1979;27:720A.

[3] Ornish DM, Brown SE, Scherwitz LW, et al. Can lifestyle changes reverse coronary atherosclerosis? The Lifestyle Heart Trial. *The Lancet.* 1990; 336:129–133.

[4] Ornish D, Scherwitz L, Billings J, et al. Can intensive lifestyle changes reverse coronary heart disease? Five-year follow-up of the Lifestyle Heart Trial. *JAMA.* 1998;280:2001–2007.

[5] Gould KL, Ornish D, Kirkeeide R, Brown S, et al. Improved stenosis geometry by quantitative coronary arteriography after vigorous risk factor modification. *American Journal of Cardiology.* 1992; 69:845–853.

stop or reverse the progression of their coronary heart disease.[6] A one-hour documentary of this work was broadcast on NOVA, the PBS science series, and was featured on Bill Moyers' PBS series, *Healing & The Mind.*

These research findings have particular significance for Americans in the Medicare population. One of the most meaningful findings in our research was that the older patients improved as much as the younger ones. The primary determinant of change in their coronary artery disease was neither age nor disease severity but adherence to the 5 recommended changes in diet and lifestyle. No matter how old they were, on average, the more people changed their diet and lifestyle, the more they improved. Indeed, the oldest patient in our study (now 86) showed more reversal than anyone. This is a very hopeful message for Medicare patients, since the risks of bypass surgery and angioplasty increase with age, but the benefits of comprehensive lifestyle changes may occur at any age.

These findings also have particular significance for women. Heart disease is, by far, the leading cause of death in women in the Medicare population. Women have less access to bypass surgery and angioplasty. When women undergo these operations, they have higher morbidity and mortality rates than men. However, women seem to be able to reverse heart disease more easily than men when they make comprehensive lifestyle changes.

MULTICENTER LIFESTYLE DEMONSTRATION PROJECT

The next research question was: how practical and cost-effective is this lifestyle program?

There is bipartisan interest in finding ways to control health care costs without compromising the quality of care. Many people are concerned that the managed care approaches of shortening hospital stays, decreasing reimbursement, shifting from inpatient to outpatient surgery, and forcing doctors to see more and more patients in less and less time may compromise the quality of care because these approaches do not address stress and other lifestyle factors that often lead to illnesses like heart disease.

Almost ten years ago, my colleagues and I established the Multicenter Lifestyle Demonstration Project. It was designed to determine (a) if we could train other teams of health professionals in diverse regions of the country to motivate their patients to follow this lifestyle program; (b) if this program may be an equivalently safe and effective alternative to bypass surgery and angioplasty in selected patients with severe but stable coronary artery disease; and (c) the resulting cost savings. In other words, can some patients avoid bypass surgery and angioplasty by making comprehensive lifestyle changes at lower cost without increasing cardiac morbidity and mortality?

In the past, lifestyle changes have been viewed only as prevention, increasing costs in the short run for a possible savings years later. Now, this program of stress management and other lifestyle changes is offered as a scientifically-proven alternative treatment to many patients who otherwise were eligible for coronary artery bypass surgery or angioplasty, thereby resulting in an immediate and substantial cost savings.

For every patient who chooses this lifestyle program rather than undergoing bypass surgery or angioplasty, thousands of dollars are immediately saved that otherwise would have been spent; much more when complications occur. (Of course, this does not include sparing the patient the trauma of undergoing cardiac surgery.) Also, providing lifestyle changes as a direct alternative for patients who otherwise would receive coronary bypass surgery or coronary angioplasty may result in significant long-term cost savings.

Is it safe to offer intensive lifestyle changes as an alternative to revascularization?

Bypass surgery is effective in reducing angina and improving cardiac function. However, when compared with medical therapy and followed for 16 years, bypass surgery improved survival only in a very small subgroup of patients (about 2 percent of those undergoing bypass surgery): those with reduced left ventricular function and lesions of the left main coronary artery of at least 60 percent. Median survival was not prolonged in patients with left main disease <60 percent and normal

[6] Gould KL, Ornish D, Scherwitz L, Stuart Y, Buchi M, Billings J, Armstrong W, Ports T, Scherwitz L. Changes in myocardial perfusion abnormalities by positron emission tomography after long-term, intense risk factor modification. *JAMA.* 1995;274:894–901.

LV function even if a significant right coronary artery stenosis >70 percent was also present.[7 8 9 10]

Angioplasty was developed with the hope of providing a less invasive, lower risk approach to the management of coronary artery disease and its symptoms. Though widely utilized, there has never been a randomized trial comparing angioplasty to medical therapy in stable patients with coronary artery disease, therefore the mortality and morbidity benefits of angioplasty are unknown. In low-risk patients with stable coronary artery disease, aggressive lipid-lowering therapy is at least as effective as angioplasty and usual care in reducing the incidence of ischemic events.[11]

The use of various types of stents during angioplasty may slow the rate of restenosis, but there are no randomized controlled trial data supporting the efficacy of these approaches. Compared to balloon angioplasty patients, coronary stent patients have no statistically significant differences in regard to additional percutaneous coronary intervention or coronary artery bypass during a six-month follow-up period, although they did have fewer heart attacks.[12] The use of the left internal mammary artery in bypass surgery may reduce reocclusion, but vein grafts also must be used when patients have multivessel disease. Thus, in addition to the costs of the original bypass or angioplasty there are often costs of further procedures when restenosis and reocclusion occur.

The majority of adverse events related to coronary artery disease, MI, sudden death and unstable angina are due to the rupture of an atherosclerotic plaque of less than 40–50 percent stenosis (blockage). This often occurs in the setting of vessel spasm and results in thrombosis and occlusion of the vessel.[13] Bypass surgery and angioplasty usually are not performed on lesions <50 percent stenosed (blocked) and do not affect non-bypassed or non-dilated lesions, whereas comprehensive lifestyle changes (or lipid-lowering drugs) may help stabilize all lesions, including mild lesions (<50 percent stenosis). Also, mild lesions that undergo catastrophic progression usually have a less well-developed network of collateral circulation to protect the myocardium than do more severe stenoses.

Bypass surgery and angioplasty have risks of morbidity and mortality associated with them, whereas there are no significant risks from eating a well-balanced low-fat, low-cholesterol diet, stopping smoking, or engaging in moderate walking, stress management techniques, and psychosocial support.

TABLE 2.—COMPARISON OF INTENSIVE LIFESTYLE CHANGES (ILC), ANGIOPLASTY (PTCA), AND BYPASS SURGERY (CABG)

	ILC	PTCA	CABG
Rapid ↓ angina	X	X	X
Rapid ↑ myocardial perfusion	X	X	X
↓ cardiac events	X		X (subset)
Continued ↓ in stenosis over time	X		
Continued ↑ in perfusion over time	X		
Improvements in non-diluted lesions	X		
Improvements in non-bypassed lesions	X		
Costs	+	+ + +	+ + + + +

Through our non-profit research institute (PMRI), we trained a diverse selection of hospitals around the country. Also, Highmark Blue Cross Blue Shield of Western

[7] Alderman EL., Bourassa MG, Cohen LS, et al. Ten year follow up of survival and myocardial infarction in the randomized Coronary Artery Surgical Study. Circulation. 1990;82, 1629–1646.

[8] Varnauskas, E., for the European Coronary Surgery Study Group. Twelve-year followup of survival in the randomized European Coronary Surgery Study. New England Journal of Medicine. 1998;319, 332–337.

[9] Chaitman BR., Fisher LD, Bourassa MG, et al. Effect of coronary bypass surgery on survival patterns in subsets of patients with left main coronary artery disease. American Journal of Cardiology. 1981;48, 765–777.

[10] Coronary Artery Bypass Surgery Cooperative Study Group. Eleven-year survival in the Veterans Administration randomized trial of coronary bypass surgery for stable angina. The New England Journal of Medicine. 1984;311:1333–1339.

[11] Pitt B, Waters D, Brown WV, et al. Aggressive lipid-lowering therapy compared with angioplasty in stable coronary artery disease. Atorvastatin versus Revascularization Treatment Investigators. *N Engl J Med.* 1999;341(2):70–6.

[12] Heuser R, Houser F, Culler S, et al. A Retrospective Study of 6,671 Patients Comparing Coronary Stenting and Balloon Angioplasty. *J Invas Cardiol.* 2000;12(7):354–362.

[13] Fuster V, Badimon L, Badimon JJ, Chesebro JH. The pathogenesis of coronary artery disease and the acute coronary syndromes. New England Journal of Medicine. 1992;326, 242–318.

Pennsylvania was the first insurer to both cover and to provide this program to its members, now via Lifestyle Advantage. Mutual of Omaha was the first insurance company to cover this program in 1993. Over 40 other insurance companies are covering this approach as a defined program either for all qualified members or on a case by case basis at the sites we have trained.

A total of 333 patients completed the Multicenter Lifestyle Demonstration Project (194 in the experimental group and 139 in the control group). We found that almost 80 percent of experimental group patients were able to safely avoid bypass surgery or angioplasty for at least three years by making comprehensive lifestyle changes at substantially lower cost without increasing cardiac morbidity and mortality. These patients reported reductions in angina comparable to what can be achieved with revascularization. Mutual of Omaha calculated an immediate savings of almost $30,000 per patient. At Highmark Blue Cross Blue Shield/Lifestyle Advantage, 348 of 350 patients were able to safely avoid revascularization by making comprehensive lifestyle changes. Patients reported reductions in angina comparable to what can be achieved with bypass surgery or angioplasty without the costs or risks of surgery.

Several patients with such severe heart disease that they were waiting on the heart transplant list for a donor heart (due to ischemic cardiomyopathies secondary to coronary heart disease) improved sufficiently that they were able to get off the heart transplant list. This improvement was not only clinically but also objectively verified by cardiac PET scans and/or echocardiograms. Avoiding a heart transplant saves more than $500,000 per patient as well as significant physical and emotional trauma. Also, up to one-half of patients waiting for a heart transplant die before a donor becomes available.

We are about to begin a randomized controlled trial to determine if comprehensive lifestyle changes can prevent the need for a heart transplant in these patients. This would be a way of demonstrating quite convincingly how powerful changes in diet and lifestyle can be.

In summary, we found that we were able to train other health professionals to motivate their patients to make and maintain comprehensive lifestyle changes to a larger degree than have ever been reported in a real-world environment. These lifestyle changes resulted in cost savings that were immediate and dramatic in most of these patients, even in those who were eligible for bypass surgery, angioplasty, or a heart transplant and were able to safely avoid these operations. These findings are giving many people new hope and new choices.[14]

MEDICARE

Good science is very important but not always sufficient to motivate lasting changes in medical practice. When reimbursement changes, then medical practice and medical education often follow.

Over 550,000 Americans die annually from coronary artery disease, making it the leading cause of death in this country. Approximately 500,000 coronary artery bypass operations and approximately 700,000 coronary angioplasties were performed in the United States last year at a combined cost of over $30 billion, more than for any other surgical procedure. Much of this expense is paid for by Medicare. Not everyone is interested in changing lifestyle, and some people with extremely severe and unstable disease may benefit from surgery, but billions of dollars per year could be saved immediately if only some of the people who were eligible for bypass surgery or angioplasty were able to avoid it by making comprehensive lifestyle changes instead.

Unfortunately, for many Americans on Medicare, the denial of coverage is the denial of access. Because of the success of our research and demonstration projects, we asked the Centers for Medicare and Medicaid Services (CMS) to provide coverage for this program. We believe that this can help provide a new model for lowering Medicare costs without compromising the quality of care or access to care. In short, a model that is caring and compassionate as well as cost-effective and competent.

This approach empowers the individual, may immediately and substantially reduce health care costs while improving the quality of care, and offers the information and tools that allow individuals to be responsible for their own health care choices and decisions. It provides access to quality, compassionate, and affordable health care to those who most need it.

Because of the success of our Multicenter Lifestyle Demonstration Project, CMS conducted their own internal peer review of our program. After seven years of dis-

[14] Ornish D. Concise Review: Intensive lifestyle changes in the management of coronary heart disease. In: *Harrison's Principles of Internal Medicine* (online), edited by Eugene Braunwald et al., 1999. Also to be published in hardcover in 2002.

cussions and review, CMS is now conducting a demonstration project to determine the medical effectiveness of our program in the Medicare population. If they validate the cost savings that we have already shown in the Multicenter Lifestyle Demonstration Project, then they may decide to cover this program as a defined benefit for all Medicare beneficiaries. If this happens, then most other insurance companies may do the same, thereby making the program available to the people who most need it.

Medicare coverage also affects medical training and education. If we demonstrate the cost-effectiveness of our program in the Medicare population, we will provide a new model for lowering Medicare costs without compromising the quality of care or access to care.

Also, Congress appropriated funds via the Department of Defense for us to train the Walter Reed Army Medical Center in our program for reversing heart disease. This program began four years ago.

CAN PROSTATE CANCER BE SLOWED, STOPPED, OR REVERSED BY CHANGING LIFESTYLE?

The significant benefits of stress management techniques and other lifestyle changes extend beyond reversing and helping to prevent coronary heart disease. Other illnesses that may benefit include diabetes, hypertension, obesity, and cancers of the prostate, breast, and colon.

Five years ago, we began conducting the first randomized controlled trial to determine if prostate cancer may be affected by making comprehensive changes in diet and lifestyle, without surgery, radiation, or drug (hormonal) treatments. The scientific evidence from animal studies, epidemiological studies, and anecdotal case reports in humans is very similar to the way it was with respect to coronary heart disease when my colleagues and I began conducting research in this area over twenty-five years ago. For example, the incidence of clinically significant prostate cancer (as well as heart disease, breast cancer, and colon cancer) is much lower in parts of the world that eat a predominantly low-fat, whole foods, plant-based diet. Subgroups of people in the United States who eat this diet also have much lower rates of prostate cancer and breast cancer than those eating a typical American diet.

This study has been conducted in collaboration with Peter Carroll, M.D. (Chairman, Department of Urology, UCSF School of Medicine) and the late William Fair, M.D. (Professor and Chairman of Urology, Memorial Sloan-Kettering Cancer Center in New York). Patients with biopsy-proven prostate cancer who have elected to undergo "watchful waiting" (i.e., no treatment) are randomly assigned to an experimental group that is asked to make comprehensive diet and lifestyle changes or to a control group that is not. Both groups are studied and compared.

We enrolled 84 men with biopsy-proven prostate cancer who had elected not to undergo conventional treatment for reasons unrelated to the study. This unique design allowed us to have a non-intervention control group to study the effects of diet and lifestyle alone on cancer without confounding interventions such as chemotherapy, radiation, and surgery.

These prostate cancer patients were randomly assigned into an experimental group who were asked to make comprehensive lifestyle changes or to a non-intervention control group. The comprehensive lifestyle changes were very similar to the program that we documented could reverse the progression of heart disease, including a very low-fat plant-based diet (predominantly fruits, vegetables, whole grains, beans, and soy products), moderate exercise, stress management techniques (including yoga and meditation), and a weekly support group.

During the first year, none of the experimental group patients and seven of the control group patients underwent conventional treatments such as surgery or radiation.

After one year, PSA levels increased (worsened) in the control group but decreased (improved) in the experimental group. These differences were statistically significant after one year. This rise in PSA in the control group would have been even greater if they had not also made significant changes in diet and lifestyle. When we examined a different control group of patients at the Walter Reed Army Medical Center with similar disease severity who had not made such significant changes in diet and lifestyle, we found their PSA rose substantially more.

Of particular interest was the strong and statistically significant correlation between adherence to the lifestyle program and changes in PSA across both groups. This correlation between adherence to the lifestyle program and changes in PSA was very similar to what we found in our earlier studies when we found a strong correlation between adherence to the lifestyle program and changes in coronary artery disease.

We also measured the effects of this intervention on LNCaP cell growth to evaluate a second level of evidence. LNCaP is a standard line of prostate tumor cells growing in tissue culture in laboratories around the world and is often used to evaluate new treatments, including drug therapies. When we added blood serum of these patients to these prostate cancer cells, we found that the experimental group patients inhibited the growth six times more than the control group patients. Also, we found a dose-response correlation between adherence to the diet and lifestyle program and the degree of inhibition of the LNCaP cells. The highest tertile of adherence inhibited the growth of the prostate cancer cells ten times more than the lowest tertile of adherence.

Thus, it appears that comprehensive lifestyle changes may stop or even reverse the progression of both heart disease and prostate cancer. However, adherence needed to be very high (>88 percent) in order to stop the disease from progressing.

HOW DOES EMOTIONAL STRESS AFFECT THE HEART?

Emotional stress, in addition to diet and exercise, is one of the underlying causes of coronary heart disease. During the past ten years, increasing scientific evidence has provided a more complete understanding of the mechanisms of coronary heart disease (CHD). This understanding provides increasing justification for using intensive lifestyle changes in managing CHD.

Coronary heart disease is a much more dynamic process than had once been thought. While coronary atherosclerosis (arterial blockages) contributes to myocardial ischemia (reduced blood flow to the heart), so do other mechanisms that may change rapidly—for better and for worse. These include variations in coronary artery vasomotor tone, platelet viscosity, endothelial stability, inflammation, and collateral circulation.

Each of these mechanisms may be directly influenced by lifestyle factors, including cigarette smoking, diet, emotional stress, depression, and exercise. These changes can occur—for better and for worse—much more quickly than had once been believed.

The most common cause of myocardial infarction, sudden cardiac death, or unstable angina is rupture of an atherosclerotic plaque, often associated with localized coronary thrombosis and/or coronary artery spasm.[15] [16] Research publications since 1990 have consistently shown that intensive risk factor modification can reduce cardiac events quite rapidly by stabilizing the endothelium within a relatively short period of time, whether via comprehensive changes in diet and lifestyle or with lipid-lowering drugs, or both, even before there is time for meaningful regression in coronary atherosclerosis.[17]

In addition to these mechanisms, emotional stress often motivates people to overeat, drink too much alcohol, abuse drugs, work too hard, and engage in other self-destructive behaviors. In addition, people who are lonely, depressed, and isolated are many times more likely to get sick and die prematurely than those who feel love, connection, and community. The mechanisms for this understanding are not completely understood: we know that it is true even though we do not always know why it is true.

In this testimony, I will discuss some of these mechanisms, describe the evidence from lifestyle intervention trials, and summarize strategies that may be helpful in motivating patients to make and to maintain beneficial changes in diet and lifestyle.[18]

EMOTIONAL STRESS AND HOSTILITY

Emotional stress may lead to chest pain and heart attacks both via coronary artery spasm and by increased platelet aggregation (blood clots) within coronary arteries.[19] Stress may lead to coronary spasm (constriction of coronary arteries) mediated either by direct alpha-adrenergic stimulation (i.e., direct connections between

[15] Brown BG, Zhao XQ, Sacco DE, Albers JJ. Lipid lowering and plaque regression: new insights into prevention of plaque disruption and clinical events in coronary artery disease. Circulation. 1993;87:1781–1791.

[16] van der Wal AC, Becker AE, van der Loos CM, Das PK. Site of intimal rupture or erosion of thrombosed coronary atherosclerotic plaques is characterized by an inflammatory process irrespective of the dominant plaque morphology. Circulation. 1994;89:36–44.

[17] Gould KL. Clinical Cardiology Frontiers: Reversal of Coronary Atherosclerosis. Circulation. 1994;90(3):1558–1571.

[18] Ornish D. *Dr. Dean Ornish's Program for Reversing Heart Disease.* New York: Random House, 1990; Ballantine Books, 1992.

[19] Oliva, P. B. (1981). Pathophysiology of acute myocardial infarction. *Annals of Internal Medicine,* 94, 236–250.

the brain and the heart) or secondary to the release of hormones such as thromboxane A2 from platelets, perhaps via increasing circulating stress hormones or other mediators.[20] Both thromboxane A2 and catecholamines (stress hormones) are potent constrictors of arterial smooth muscle and powerful endogenous stimulators of platelet aggregation.[21]

Personally relevant mental stress may be an important precipitant of reduced blood flow to the heart—often silent—in patients with coronary artery disease.[22] Acute mental stress may be a frequent trigger of transient reductions in blood flow to the heart, heart attacks and sudden cardiac death.[23]

Women of postmenopausal age may have greater cardiovascular responses to stress than men or premenopausal women.[24] Atherosclerotic monkeys with chronic psychosocial disruption had coronary artery constriction in response to acetylcholine, whereas atherosclerotic monkeys living in a stable social setting had coronary artery vasodilation in response to acetylcholine, even though both groups of monkeys were consuming a cholesterol-lowering diet.[25]

In an analysis of over forty-five studies, hostility has emerged as one of the most important personality variables in coronary heart disease.[26] The effects of hostility are equal to or greater in magnitude to the traditional risk factors for heart disease.[27] Hostility and cynicism appear to be the primary toxic components of the Type A behavioral pattern. Other aspects of Type A behavior do not seem to be harmful.

DEPRESSION

Several studies have shown that depression significantly increases the risk of developing coronary heart disease. One study of 1,551 people in the Baltimore area who were free of heart disease in 1981 found that those who were depressed were more than four times as likely to have a heart attack in the next 14 years. Depression increased risk as much as did hypercholesterolemia.[28]

Depression also increases the risk of subsequent myocardial infarction in patients with existing coronary heart disease. Unfortunately, depression often goes untreated.

One study examined the survival of elderly men and women hospitalized for an acute heart attack who had emotional support compared with those patients who lacked such emotional support. More than three times as many men and women died in the hospital who had no source of emotional support compared with those with two or more sources of support. Among those who survived and were discharged from the hospital, after six months 53 percent of those with no source of support had died compared with 36 percent of those with one source and 23 percent of those with two or more sources of support. These figures did not change significantly after one year. When they looked at all patients and controlled for other factors that might have influenced survival (such as severity of the heart attack, age, gender, other illnesses, depression), men and women who reported no emotional

[20] Schiffer, F., Hartley, L. H., Schulman, C. L., & Abelman, W. H. (1980). Evidence for emotionally induced coronary arterial spasm in patients with angina pectoris. *British Heart Journal,* 44, 62–66.

[21] Moncada, S., & Vane, J. R. (1979). Arachidonic acid metabolites and the interactions between platelets and blood vessel walls. *New England Journal of Medicine,* 300, 1142–1147.

[22] Rozanski A. Bairey CN. Krantz DS, et al. Mental stress and the induction of silent myocardial ischemia in patients with coronary artery disease. New England Journal of Medicine. 318(16):1005–12, 1988 Apr 21.

[23] Bairey CN. Krantz DS. Rozanski A. Mental stress as an acute trigger of ischemic left ventricular dysfunction and blood pressure elevation in coronary artery disease. American Journal of Cardiology. 66(16):28G–31G, 1990 Nov 6.

[24] Bairey Merz CN. Kop W. Krantz DS, et al. Cardiovascular stress response and coronary artery disease: evidence of an adverse postmenopausal effect in women. American Heart Journal. 135(5 Pt 1):881–7, 1998 May.

[25] Williams JK. Vita JA. Manuck SB. Selwyn AP. Kaplan JR. Psychosocial factors impair vascular responses of coronary arteries. *Circulation.* 1991;84(5):2201–2.

[26] Miller TQ, Smith TW, Turner CW, et al. A meta-analytic review of research on hostility and physical health. *Psychological Bulletin.* 1996;119:322–348.

[27] Review Panel on Coronary-Prone Behavior and Coronary Heart Disease. Coronary-prone behavior and coronary heart disease: a critical review. *Circulation.* 1978;65:1199–1215.

[28] Pratt LA, Ford DE, Crum RM, et al. Depression, psychotropic medication, and risk of myocardial infarction. *Circulation.* 1996;94(12):3123–9.

support had almost three times the mortality risk compared with those who had at least one source of support.[29]

In another study, researchers followed 222 patients who had suffered myocardial infarction and found that those who were depressed were four times as likely to die in the next six months as those who were not depressed.[30]

Many depressed patients are, paradoxically, in a constant state of hyperarousal, causing sustained hyperactivity of the two principal effectors of the stress response, the corticotropin-releasing-hormone, or CRH, system, and the locus ceruleus-norepinephrine, or LC–NE, system. Norepinephrine may precipitate vasoconstriction, platelet aggregation, and arrhythmias. Cortisol may accelerate atherosclerosis.[31] When patients are treated for depression, these changes in CRH and LC–NE may return to normal. Beta-blockers help blunt the hyperarousal state but may exacerbate depression, whereas meditation may reduce hyper-reactivity without causing depression.

Social factors, including social support, play an important role in both adherence to comprehensive lifestyle changes and may have powerful effects on morbidity and mortality independent of influences on known risk factors. An increasing number of studies has shown that those who feel socially isolated have three to five times the risk of premature death not only from coronary heart disease but also from all causes when compared to those who have a sense of connection and community.[32 33]

For example, researchers at Duke studied almost 1,400 men and women who underwent coronary angiography and were found to have had at least one severe coronary artery stenosis. After five years, men and women who were unmarried and who did not have a close confidante—someone to talk with on a regular basis—were over three times as likely to have died than those who were married, had a confidant, or both. These differences were independent of any other known medical prognostic risk factors.[34]

EXERCISE

One of the benefits of exercise is to help reduce stress and combat depression. The role of exercise in the prevention and treatment of coronary heart disease is well-known and is supported by several reviews of the literature. Two meta-analyses indicate that the risk of death was doubled in those who were physically inactive when compared with more active individuals.[35 36] Rehabilitation programs incorporating exercise also show modest benefits of exercise in preventing recurrent CHD events. None of 22 randomized trials in the meta-analysis had the power to show a significant treatment effect, but in a meta-analysis employing the intention-to-treat analysis, there was a significant reduction of 25 percent in 1- to 3-year rates of CHD and total mortality in the patients receiving cardiac rehabilitation when compared with control patients.

Moderate exercise provides most of the improvement in longevity as more intensive exercise while minimizing the risks of exercising. In one study, investigators performed treadmill testing on 10,224 men and 3,120 women who were apparently healthy. Based on their fitness level, these participants were divided into five categories, ranging from least fit (group 1) to most fit (group 5). The researchers followed these people to determine how their level of physical fitness related to their death rates. After eight years, the least fit (the sedentary group 1) had a death rate more than three times greater than the most fit (the very active group 5). More im-

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[29] Berkman LF, Leo-Summers L, Horwitz RI. Emotional support and survival after myocardial infarction. A prospective, population-based study of the elderly. *Annals of Internal Medicine.* 1992;117(12):1003–9.

[30] Lesperance F, Frasure-Smith N, Talajic M. Major depression before and after myocardial infarction: its nature and consequences. *Psychosomatic Medicine.* 1996;58(2):99–110.

[31] Gold PW, Chrousos GP. The endocrinology of melancholic and atypical depression. *Proceedings of the Association of American Physicians.* 1999;111(1):22–34.

[32] House JS, Landis KR, Umberson D. Social relationships and health. Science. 1988; 241(4865):540–5.

[33] Ornish D. *Love & Survival*: The Scientific Basis for the Healing Power of Intimacy. New York: HarperCollins, 1998.

[34] Williams RB, Barefoot JC, Califf RM, et al. Prognostic importance of social and economic resources among medically treated patients with angiographically documented coronary artery disease. *Journal of the American Medical Association.* 1992;267(4):520–524.

[35] Berlin, J. A., & Colditz, G. A. A meta-analysis of physical activity in the prevention of coronary heart disease. *American Journal of Epidemiology,* 1990;132, 612–628.

[36] Powell, K. E., Thompson, P. D., Caspersen, C. J., & Kendrick, J. S. Physical activity and the incidence of coronary heart disease. *Annual Review of Public Health.* 1987;8, 253–287.

portant, though, was the finding that most of the benefits of physical fitness came between group 1 and group 2, particularly in men.[37]

Even substantial decreases in cardiovascular fitness resulting from decades of inactivity can be substantially reversed with modest endurance training.

PRACTICAL CONSIDERATIONS

Lifestyle factors such as diet, smoking, and emotional stress often interact. For example, people are often more likely to overeat, smoke, work too hard, or abuse drugs and alcohol when they feel lonely, depressed, or isolated. As one patient told me, "I've got 20 friends in this package of cigarettes and they're always there for me. Are you going to take away my 20 friends? What are you going to give me instead?"

Providing health information is important but not usually sufficient to motivate lasting changes in behavior unless the underlying psychosocial issues are also addressed. Thus, stress management techniques and group support may address some of these deeper concerns, thereby making it easier for patients to change diet and quit smoking.[38 39] Sometimes, patients also may benefit from referral to a psychotherapist for treatment of depression with counseling and/or antidepressants.

The conventional medical thinking is that taking a statin drug is easy and most patients will comply, but making comprehensive lifestyle changes is virtually impossible for almost everyone. In fact, less than 50 percent of patients who are prescribed statin drugs are taking them as prescribed just one year later.[40]

One might think that compliance to lipid-lowering drugs would always be much higher than to comprehensive diet and lifestyle changes, since taking pills is relatively easy and the side-effects are minimal for most patients. However, cholesterol lowering drugs do not make most patients feel better. They are taken today in hopes that there may be a long-term benefit by reducing the risk of a myocardial infarction or sudden cardiac death.

To many patients, concepts such as "risk factor modification" and "prevention" are considered boring and they do not initiate or sustain the levels of motivation needed to make intensive lifestyle changes. "Am I going to live longer, or is it just going to seem longer?"

Also, the prospect of a heart attack or death is so frightening for many patients that their denial often keeps them from thinking about it at all. Because of this, adherence becomes difficult for them to maintain. (Patients often will adhere very well for a few weeks after a heart attack until the denial returns.) Fear is a powerful motivator in the short run but not in the long run, for when it's too scary to think about something, many people simply don't.

While fear of dying may not be a sustainable motivator, joy of living often is. In our experience, paradoxically, it may be easier for some patients to make comprehensive changes all at once than to make small, gradual changes or even to take a cholesterol-lowering drug.

For example, when patients follow a Step 2 diet, they often have a sense of deprivation but not much apparent benefit. LDL-cholesterol is reduced by an average of only 5 percent,[41] frequency of angina does not improve much, lost weight is usually regained, and coronary artery lesions tend to progress. However, patients who make comprehensive lifestyle changes often experience significant and sustained reductions in frequency of angina, LDL-cholesterol, and weight; also, coronary artery lesions tend to regress rather than progress.

Patients usually report rapid decreases in angina and of ten describe other improvements within weeks; these rapid improvements in angina, well-being, and quality of life sustain motivation and help to explain the high levels of adherence in these patients. Instead of viewing lifestyle changes solely in terms of risk factor reduction in hopes of future benefit, patients began to experience more immediate benefits, thereby reframing the reason for making these changes in behavior from fear of dying to joy of living.

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[37] Blair SN, Kohl HW, Paffenbarger RS, et al. "Physical fitness and all-cause mortality." *JAMA.* 1989;262:2395–2401.

[38] Ornish D. *Love & Survival*: The Scientific Basis for the Healing Power of Intimacy. New York: HarperCollins, 1998.

[39] Ornish D, Hart J. Intensive Risk Factor Modification. In: Hennekens C, Manson J, eds. *Clinical Trials in Cardiovascular Disease.* Boston: W.B. Saunders, 1998.

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This is a particularly rewarding and emotionally fulfilling way to practice medicine, both for patients and the physicians and other health professionals who work with them. Much more time is available to spend with patients addressing the underlying lifestyle factors that influence the progression of coronary artery disease, yet costs are substantially lower.

As discussed earlier, the major reason that most stable patients undergo bypass surgery or angioplasty is to reduce the frequency of angina, and comparable results may be obtained by making comprehensive lifestyle changes alone. Instead of pressuring physicians to see more patients in less time, this is a different approach to reducing medical costs that is caring and compassionate as well as cost-effective and competent.

The physician, who is often pressed for time, need not provide all of the training in changing diet and lifestyle. He or she can act as the "quarterback," providing direction and supervision. My colleagues and I at the non-profit Preventive Medicine Research Institute and at Lifestyle Advantage have trained teams of health professionals at clinical sites around the country in this program of comprehensive lifestyle changes. These include cardiologists, registered dietitians, exercise physiologists, psychologists, chefs, stress management specialists, registered nurses, and administrative support personnel. These teams, in turn, work with their patients to motivate them to make and maintain comprehensive lifestyle changes.

In practice, patients with coronary heart disease should be offered a range of therapeutic options, including comprehensive lifestyle changes, medications (including lipid-lowering drugs), angioplasty, and bypass surgery. The physician should explain the relative risks, benefits, costs, and side-effects of each approach and then support whatever the patient decides. Whether or not a patient chooses to make intensive lifestyle changes is a personal decision, but he or she should have all the facts in order to make an informed choice.

Emotional stress affects the health and productivity of almost all Americans. Therefore, I respectfully request the Committee on Appropriations of the U.S. Senate to consider substantial increases in funding for rigorous scientific research into the effects of emotional stress on health and disease.

Those approaches that are found to be safe and effective should be covered by Medicare and other third-party payers so that these methods can be more widely available to other Americans who may benefit from them regardless of socioeconomic and demographic background. Scientific studies that find other approaches to be ineffective or unsafe will be of great value in helping to protect the American people as well as Medicare from fraud and abuse.

Thank you very much for the opportunity to share these thoughts with you today.

Senator SPECTER. Thank you very much, Dr. Ornish. The quality of your testimony exceeded your punctuality.

Dr. ORNISH. Thank you.

Senator SPECTER. And there are quite a few questions. I will be coming back to you.

Dr. ORNISH. Thank you, sir.

STATEMENT OF GLENN PERELSON, NATIONAL MARKETING DIRECTOR, LIFESTYLE ADVANTAGE

Senator SPECTER. Our second witness is Mr. Glenn Perelson, National Marketing Director of Lifestyle Advantage, a joint venture of Preventive Medicine Research Institute and Highmark Blue Cross-Blue Shield. Mr. Perelson is a graduate of the University of California. I participated just a week ago today on the program at Allegheny General Hospital in Pittsburgh, which marked the kick-off of Lifestyle with the test program for Medicare, quite an achievement to get Medicare to spend any money, directing people 65 and older who have arteriosclerosis, heart disease, to have the program. They are very difficult to deal with on many, many lines. But I think it was the prospect of saving money which brought them in there because if they can save money with their constraints, with the budget they have, they will be able to spend it elsewhere. But that is a very attractive program and I appreciate your work on it. I look forward to your testimony.

Mr. PERELSON. Thank you. And we very much appreciate your support in terms of the roll-out of our program in Pennsylvania. And just as a quick aside, in terms of the multi-center research that Dr. Ornish and colleagues have done, a full half of the people that went through that research were of Medicare age, who did as well or better than people who were not that age. And so we are looking forward to enrolling Medicare-age participants in our 10 sites in West Virginia, our nine new sites in Pennsylvania, Nebraska, and in Illinois.

Dr. Ornish asked me to speak briefly about the cost savings associated with the Ornish program and we really have needed partners in terms of looking at costs associated with the Ornish program, and our two most significant partners have been Mutual of Omaha very early in the process, and Highmark Blue Cross Blue Shield, because you can make projections based on risk factor changes, but it is much better to look at cost savings when you have full control of all the costs associated with the disease, and health plans do have that for their members. And so what I would like to talk to you about today are a number of studies that have been done by both Mutual of Omaha and Highmark looking at cost savings associated with the program.

When you look at heart disease and costs associated with heart disease and the $330 billion a year associated with heart disease and productivity costs, most of those costs are associated with the procedures—about 80 to 85 percent of those costs. And so the first study that I will note is that when we were working with Mutual of Omaha in the multi-center trial, we looked at the participants who went through the program who were subject to invasive procedures and compared them to Mutual of Omaha members who did not go through the program and went on to have procedures. In that group, those Mutual of Omaha members who had procedures experienced an additional 34 procedures, and the Ornish group who did not have the initial procedure had 57 procedures.

The notes that I have provided for the testimony, if you do the math associated with that, you end up with the $29,000 differential between the control group who did not have the Ornish program and those folks who went through the Ornish program. Again, the costs that were evaluated in terms of that did not include additional items such as emergency room visits, physician visits, or medications. It simply was a look at how much cost was avoided by going through the Ornish program for the procedures.

David Eddy, a noted health economist, also did a study in the year of 2000 basically looking at all the literature associated with our program and with lifestyle changes. And I will quote. He concluded that: "The program is at least cost-neutral and is probably cost-saving, is robust under a wide range of assumptions and sensitivity analyses. While it is never possible to know the exact financial effects of a treatment or its exact clinical effects for that matter, all available evidence suggests the comprehensive lifestyle program is highly likely to be cost-saving, and is extremely unlikely to be cost-increasing."

With our partnership in 1997 with Highmark Blue Cross Blue Shield, who, as Dr. Ornish said, was the first insurance company to both offer and pay for the program, the program has been looked

at from four different perspectives and each of those perspectives has yielded significant cost savings results. In fact, Dr. Fetterolf, who is a Senior Medical Director at Highmark actually was skeptical about the program when it was first brought on board, not from a clinical perspective, but from a cost-savings perspective. And his staff has showed in any way that you can look at the Ornish program that there are significant cost savings—from an emergency and admissions perspective, from an angina cessation perspective using diagnostic software to project what costs should be in the group; any way that the Info-matics program at Highmark has looked at the Ornish program, it shows substantial savings. And in 5 seconds will be the end of my time.

I wanted to beat you by 5.

Senator SPECTER. Well, the precedents that you establish on timing are exemplary. The third witness today is in line with the Dr. Ornish program, Mr. Mel Lefer from Penngrove, California, a former San Francisco restaurant owner who brought New York-style food to San Francisco.

Mr. LEFER. It is all true.

SUMMARY STATEMENT OF MEL LEFER

Senator SPECTER. That is quite an achievement. The information provided to me, which I am sure Mr. Lefer has approved my disclosing, is that he suffered a massive coronary in 1985 and was advised that he had less than a year to live, and he joined Dr. Ornish's Lifestyle Heart Trial in 1986 and is here to tell the tale. Mr. Lefer?

Mr. LEFER. I will try to put a human face on it, Senator. Well, my doctor called me and said this young doctor could help me, and so he came over to my house and he told me that if I ate good, exercised, I did yoga and I talked about my feelings—I would get better. He figured he could help me. And at the time, I did not know that I had only about a year to live. And actually, Dean took everybody into the program, even people worse off than I was. So at that time, I could only walk a few steps and then I would have to stop, take some Nitrol. It used to take me an hour, an hour-and-a-half to take a shower because I would have to rest.

Immediately, within 1 week or 2, I started to feel better. I started to walk more and eventually got up to 10 miles a day. I started feeling happier. Up until my heart attack, I had some terrible things happen in my life and my luck kind of went south for a while, and I learned how to open up my heart, I learned how to not let bad things—keep bad things out, put a wall around my heart. I had the most difficulty doing the yoga and so I became a yoga teacher.

My relationships with my wife and my kids improved and, I would say, nowadays I am happier than I have ever been. And my relationship with my family is closer and more loving than ever before. About 2 years ago—my wife and I travel a lot—I was hiking in the Alps at 10,000 feet. I went to the top of the mountain in a snowstorm. That was one of the highlights of my life, that I was able to do that. Nowadays, I never have to take any angina pills, Nitrol, and I am just really happy.

I am still addicted to food. At that time, I used to travel around the world, eating in all the great restaurants. I used to smoke six to seven Cubans a day. I was a couch potato. Now I usually hike every day for at least 3 miles. So I would say I feel better now than I have ever felt before, and it is amazing what a few vegetables can do.

I still have 2 minutes, but I am done.

Senator SPECTER. Well, that is very impressive, Mr. Lefer. We will come back to you for some questions.

STATEMENT OF DR. JUDITH STERN, PROFESSOR, DEPARTMENT OF NUTRITION AND INTERNAL MEDICINE; DIRECTOR OF THE FOOD INTAKE LABORATORY GROUP, UNIVERSITY OF CALIFORNIA, DAVIS

Senator SPECTER. Our next witness is Dr. Judith Stern, professor in the Department of Nutrition and Internal Medicine at the University of California, Davis, director of the Food Intake Laboratory Group at UC Davis. She received her bachelor's degree in food and nutrition from Cornell and her doctor of science degree from Harvard University, and I have been familiar with her professional work for more than a decade. Among her many accomplishments is the education of my Ph.D. son, Steven. Dr. Stern, thank you for joining us today. We look forward to your testimony.

Dr. STERN. Mr. Chairman, thank you for the opportunity to testify before you and also on behalf of the American Obesity Association, which is a non-profit lay advocacy organization that I helped to found.

In the last four decades of obesity research, progress has been made on identifying causes and treatments, but despite these research advances, children, adolescents, and adults continue to become overweight and obese in record numbers—and I gave you a few figures as a professor. Those are figures 1 through 3. But in 1999, your Senate Appropriations Committee called on the Department of Health and Human Services to develop a comprehensive research plan on obesity. This request has not been implemented and it is needed even more today. So in the absence of such research and such a research plan, there has been an explosion of searches with simple global solutions ranging from law suits against food companies to banning soft drinks from schools.

I know you have heard this refrain before, but we are simply not spending enough money on obesity research. I am going to use NIH as an example. As Mr. Chairman knows, NIH has provided a critical role in providing leadership and research support needed for meeting medical modern health problems, both great and small. And we have acknowledged that you and Senator Harkin have provided a lot of the fuel for this research, so to speak. So what I have done is I have used NIH's own criteria to set research priorities, which include healthcare needs, the number of people with disease, the number of deaths, degree of disability, economic and social impacts, the need to control the spread of the disease, and finally basic research which can have a long-term impact on health. And given NIH's own criteria, obesity should have a very high priority, but it does not based on the level of obesity research funding and the organizational level at NIH.

You can see in figure 4, NIH's obesity funding is far below other diseases. And while obesity research investment at NIH has more than doubled in the last 5 years from $128 million in 1998 to a projected greater than $300 million in 2003, it still is a small percentage of NIH's budget, and if you look at figure 6, the number of research grants are far below other important areas of research. So the gravity and urgency of this epidemic calls for obesity to be given a leading place in the NIH organizational structure. And NIH's current obesity research is really buried in organizations dedicated to other diseases. There are 27 institutes, there are centers at NIH, the lead institute for obesity research is NIDBK. NIDBK has six divisions. In one of the divisions, it has three branches. In one of the three branches, obesity has eating disorders.

So it really is on the lowest organizational rung. And I think there are at least five negative effects of this low position of obesity research in NIH. First of all, the budget is far below what it should be. Second, there are insufficient staff and time to integrate obesity questions and priorities with NIH and their developing the Human Genome Project, and also do research on stigma in healthcare, and so on. Three, there is a vacuum of leadership. And four, we really need a strong scientific leader to advise Congress and governments on sound, workable solutions. Few other areas of healthcare attract the enormous public and media attention of weight and obesity, and also a lack of strong NIH voice. And fifth, the resources at NIH need to be managed and anticipated. And we do not do that. For example, to study food intake, we need doubly-labeled water. There is a shortage of doubly-labeled water, and we simply cannot get it.

Senator SPECTER. Government labeled——

Dr. STERN. Doubly-labeled water. It is an isotope to let us do food intake research. We cannot get it and NIH did not anticipate this.

So we are recommending that there be an Institute of Obesity at NIH. This will improve the opportunities. We are anticipating, certainly, a whole bunch of criticisms against that. But my bottom line is that we really need a sense of urgency in funding obesity research. If we do not immediately adopt a proactive posture to develop these scientific resources, public policy will continue to grope in the dark for solutions to obesity and to the suffering due to obesity. The healthcare system cannot respond to the millions of new, younger cases of obesity and its associated diseases and, not to be overdone by Dean, I thank you for the opportunity to testify, and I am available to answer any questions at the end.

[The statement follows:]

PREPARED STATEMENT OF JUDITH S. STERN

Mr. Chairman and members of the subcommittee:thank you for the opportunity to testify before you on behalf of the American Obesity Association (AOA), a nonprofit corporation one of whose goals is to expand research on Obesity. I am Judith S. Stern, Sc.D., Professor of Nutrition and Internal Medicine at the University of California at Davis and Vice President and co-founder of AOA. I want to express on behalf of my colleagues our gratitude for the work of the Subcommittee in providing appropriations for biomedical science and prevention programs.

In the last four decades of obesity research, progress has been made in identifying causes and treatments. Research has provided us with a greater understanding of obesity as a chronic disease and the complex role that genetic, metabolic, behavioral, psychological and environmental factors play in the disease. Despite the advances

in research, however, children, adolescents and adults continue to become overweight and obese in record numbers.[1] Obesity is unique in that a chronic disease is increasing at rates previously only seen with infectious diseases (see Figures 1–3, data from the National Health and Nutrition Examination Surveys, NHANES). For example, the prevalence of obesity in women ages 20–29 years has more than doubled in the last 20 years (Figure 1). Over 60 percent of adult Americans are overweight or clinically obese. Fourteen percent of American children and adolescents are obese. More research is needed to understand and prevent this complex epidemic disease.

Obesity is a leading cause of mortality, morbidity, disability, discrimination in health care, education, and employment.[2–11] According to a recent RAND study, the health consequences of obesity are as significant or greater than the effects of smoking, alcohol overuse and poverty.[12] The consequences of obesity include various cancers, heart disease, stroke, type 2 diabetes, osteoarthritis, sleep apnea and problem pregnancies and childbirth.[12–19]

Obesity is poorly treated by the medical community.[20] Coverage for effective treatments is modest to poor in both governmental and non-governmental health insurance programs. As a result, patients are denied access to effective treatments including surgery, FDA approved medications, physician counseling, dietician services and behavioral counseling. Inexplicably, the very insurance programs that do not reimburse for weight maintenance do cover the costs of treating the diseases caused by obesity.[21] The desire for effective methods of weight management can lead to adverse interventions including tobacco smoking[22] and the use of ineffective or harmful consumer products.[23]

The rapid rise in obesity and its profound consequences for the health of the population have resulted in a recent explosion of searches for simple global solutions ranging from law suits against food companies[24] to banning soft drinks from schools.[25]

THE ROLE OF NIH IN OBESITY RESEARCH

The National Institutes of Health (NIH) has played a critical role in providing the leadership and research support needed for meeting modern health problems both great and small. The setting of research priorities at NIH is a complicated process involving Congress, the White House, various advocacy efforts and not least a scientific judgment of the opportunities present in each field. NIH has documented the process in its publication, Setting Research Priorities.[26] The process involves assessing health care needs, such as the number of persons with a disease, the number of deaths, the degree of disability, the degree to which a disease cuts shorts a normal, productive and comfortable life, the economic and social impacts of a disease and the need to act rapidly to control the spread of a disease. In addition, the NIH places a high priority on funding basic research which can have a long-term impact on health. The low priority given obesity can be seen in the low level of obesity research funding and by the absence of any NIH organization dedicated to obesity.

It would not be unreasonable, given NIH's own criteria, to expect that obesity would be a very high priority. Unfortunately, that is not the case. As illustrated in Figure 4, NIH obesity research funding is far below other diseases, including conditions directly caused by obesity such as cardiovascular disease and diabetes.

While the obesity research investment at NIH has nearly doubled in the last five years, this increase has barely matched the overall growth in NIH's budget (see Figure 5). While the obesity epidemic has taken hold in America, NIH's obesity research funding share has actually decreased. Accordingly, as indicated in Figure 6, research grants in obesity are far below other important areas of research.

The gravity and urgency of the obesity epidemic call for obesity research to be given a leading place in NIH's organizational structure. This is emphatically not the case today. NIH's current obesity research effort is buried in organizations dedicated to other diseases.[27]

There are five negative effects of this low position of obesity research in NIH's organizational structure.

(1) The obesity research budget is far below what it should be according to NIH's own criteria for research priorities and the obesity research budget has not benefited from the recent rise in NIH funding.

(2) There is insufficient staff and time to fully integrate obesity questions in the numerous research programs being developed by NIH such as the next phase of the human genome project to the analysis of risk data on hormone replacement therapy or research on the role of stigma in health care.

(3) There is a vacuum of the high-ranking leadership on obesity needed to develop collaborative approaches within the Department of Health and Human Services (DHHS).[28]

(4) A strong scientific leader is needed to advise Congress and guide the states and local governments on sound, workable solutions to the obesity crisis. Few governmental officials can match the influence and persuasive qualities of a Director of a NIH Institute. Obesity is burdened with public misconceptions and confusion about causes, cures, prevention and intervention strategies. Few other areas of health care attract the enormous public and media attention of weight and obesity. One only has to look as far as the invaluable role played by Dr. Anthony S. Fauci, Director of the National Institute of Allergy and Infectious Diseases on contentious debates about HIV/AIDS and bioterrorism to appreciate the need for a credible scientific voice on obesity.

(5) Research resources have to be anticipated and managed. Many excellent research efforts in studying food intake and energy expenditure, for example, have been delayed or halted by the shortage of double-labeled water. Assuring that such research resources are met is simply outside the capacity of the current structure.

We recommend that NIH, working in consultation with Congress, the Administration and the obesity research community move quickly to create and fund a National Institute on Obesity. Such an Institute would provide a remedy to the weaknesses of the current structure. The desire is not to just consolidate current obesity research in one structure. The purpose is also to provide a platform for national and international leadership and to bring new funding to meet the significant challenges of the field. We propose at a new National Institute on Obesity have seven components or divisions:

1. Basic Research on Adipose Tissue;
2. Epidemiology and Population Studies;
3. Genetics, Metabolism and Mechanisms of Disease Development;
4. Neuroscience and Behavioral Research;
5. Prevention, Therapeutic Development and Clinical Trials;
6. Economics and Health Policy; and
7. Training and Education.

These areas reflect both the needs and robustness of the obesity research field. Critical work in all these areas is going on but vastly more needs to be done. Above all, meaningful integration of the specific research areas has not occurred. In 1999, the Senate Appropriations Committee called on the Department of Health and Human Services to develop a comprehensive research plan on obesity.[29] This request has not been implemented and is even more needed today. The field of obesity research holds enormous scientific opportunities in the near future including.

—Body fat is now known to be regulated by several hormones and neuropeptides, including leptin and ghrelin.

—Food ingredients such as glucose, amino acids and fatty acids affect the production of the hormones insulin, growth hormone, insulin-like growth factor and leptin which act on specific receptors in the hypothalamic circuits that regulate feeding behavior.[30]

—The human genome program holds the promise to integrate such molecular understanding of normal body weight regulation with abnormal body weight regulation. Fresh insights on the significant racial and ethnic disparities in obesity and its comorbid conditions are foreseen.[31]

With such information, more precise and informed prevention strategies, behavioral interventions, pharmacology, and surgical interventions can be developed and tested. Such prevention and treatment strategies will give rise to questions of economic efficiency and legislative and regulatory approaches. The current lack of attention in medical training and health professional disciplines on obesity can be directly and immediately approached through programs to develop obesity researchers and health education campaigns.

We anticipate objections to a proposal to create a new NIH institute, to wit:

(1) NIH is already too big and complicated. Former directors of NIH and some members of Congress have expressed this view. Currently, this topic is under discussion by a committee of the Institute of Medicine. This objection is a serious one which is of concern to the entire research community. However, there is no reason why the concept and the needs for a National Institute on Obesity cannot be part of this debate. More importantly though, is the importance of not losing sight of what is most critical—the administrative efficiency of NIH or the public health problems caused by obesity. Experience shows that asking other organizations with other primary responsibilities to share their funding with a new area simply does not work.

(2) A new Institute is less desirable than getting all the existing components of NIH to do more on obesity as it affects their particular interest and to better coordinate research protocols and activities. This too is an important argument. For this to occur, the current low organizational level of obesity research must be changed. This approach might go far to better integrate and enhance obesity research at NIH. However, it is unlikely to provide the external leadership that an Institute Director can bring to the raging debates about the causes and cures of the obesity epidemic. In addition, this approach fails to focus on adipose tissue, obesity and its prevention and treatments. It runs the risk of the appearance of attention without actual improvements.

(3) Do higher levels of funding precede evolution of a scientific field or follow scientific insights? This 'chicken or egg' debate has been part of parcel of issues at NIH since the creation of the National Cancer Institute. Since the tragedy of September 11, Congress has decided that it would make a sudden and dramatic infusion of resources into bioterrorism and anthrax (See Figure 4). At this point in time, it appears that the research community is responding to this national emergency by changing orientation if not careers into the field of bioterrorism. It would have been inadequate if Congress and NIH had merely told the research community that it was interested in receiving more proposals without showing a commitment of funds adequate to elicit the desired response by the scientific community.

Clearly, the interest of the current leadership at the DHHS and the director of NIH and institute directors in obesity are sincere and highly welcomed. We also welcome and need input from the Center for Disease Control (CDC) and the U.S. Department of Agriculture. Our focus on NIH is because this is the major source of funds for biomedical research in the country.

What is needed is a sense of urgency. If we do not immediately adopt a proactive posture to develop the scientific resources needed, the public and policy makers will continue to grope in the darkness for solutions to the tremendous human suffering caused by obesity. It is doubtful that the health care system has the capacity to respond to millions of new, younger cases of obesity and its co morbid conditions. A National Institute on Obesity will, by itself, not prevent or cure obesity. However, it is difficult to see scientifically valid prevention strategies, more effective therapeutic approaches and better understanding and education on obesity in the absence of such an entity.

Mr. Chairman, thank you for this opportunity to testify and I am available to answer any questions.

FOOTNOTES

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[28] Collaborative approaches are need in DHHS between the Centers for Disease Control and Prevention, the Food and Drug Administration, the Centers for Medicare and Medicaid Services, the Indian Health Service and with other branches of the federal government such as the Department of Agriculture, the Department of Education, the Department of Defense and the Department of Veterans Affairs, all of which have roles to play in the prevention and treatment of obesity.

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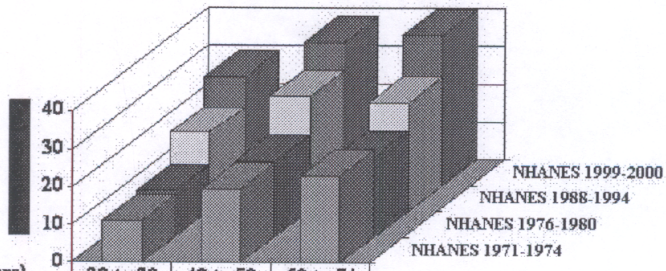
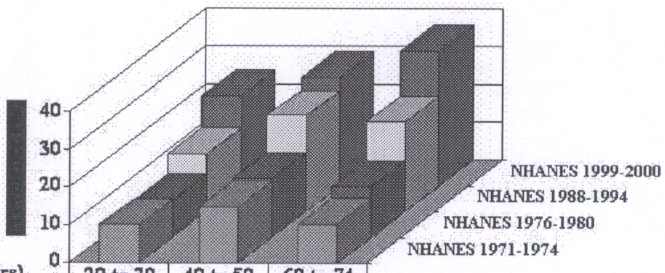
Figure 1Obesity Prevalence Trend for U.S. Women (1971 to 2000)



Age (Years)	20 to 39	40 to 59	60 to 74
NHANES 1971-1974	11.2	19.7	23.4
NHANES 1976-1980	12.3	20.4	21.3
NHANES 1988-1994	20.6	30.4	28.6
NHANES 1999-2000	28.4	37.8	39.6

Source: Flegal KM et. al. JAMA. 2002;288:1723-1727.

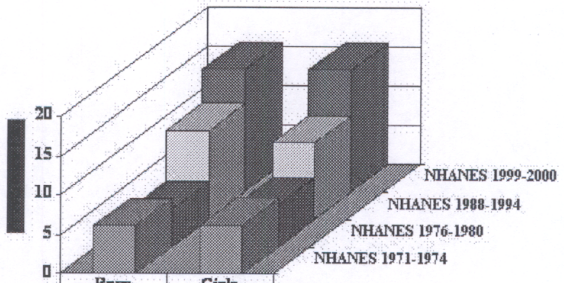
Figure 2 Obesity Prevalence Trend for U.S. Men (1971 to 2000)



Age (Years)	20 to 39	40 to 59	60 to 74
NHANES 1971-1974	10.2	14.7	10.5
NHANES 1976-1980	9.8	15.4	13.5
NHANES 1988-1994	14.9	25.4	23.8
NHANES 1999-2000	23.7	28.8	35.8

Source: Flegal KM et. al. JAMA. 2002;288:1723-1727.

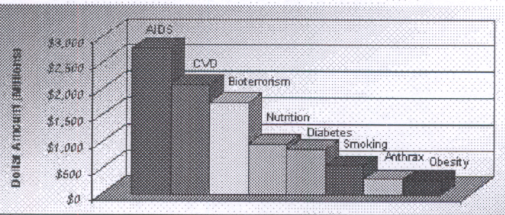
Figure 3 Obesity Prevalence Trend (1971 to 2000) for U.S. Adolescents (Aged 12 to 19)



Gender	Boys	Girls
NHANES 1971-1974	6.1	6.2
NHANES 1976-1980	4.8	5.3
NHANES 1988-1994	11.3	9.7
NHANES 1999-2000	15.5	15.5

Source: Ogden C L et al., JAMA. 2002;288:1728-1732.

Figure 4 National Institutes of Health (NIH) Budget - 2003 Estimate



AIDS	$2,770.0
Cardiovascular (CVD)	$2,064.6
Bioterrorism	$1,747.9
Nutrition	$942.7
Diabetes	$845.1
Smoking	$554.9
Anthrax	$287.4
Obesity	$274.1

Source: NIH, Office of Budget. Online: www.od.nih.gov/officeofbudget/Funding/Research/Areas.htm

Figure 5 Budget Comparison: Total National Institutes of Health (NIH) Appropriations and Obesity

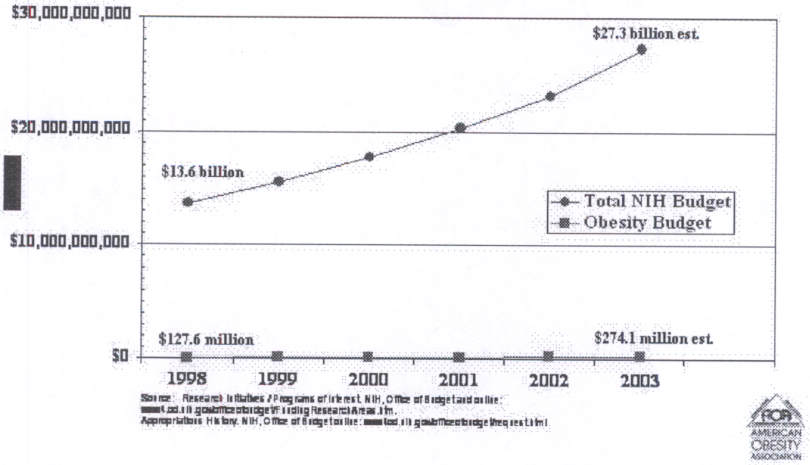
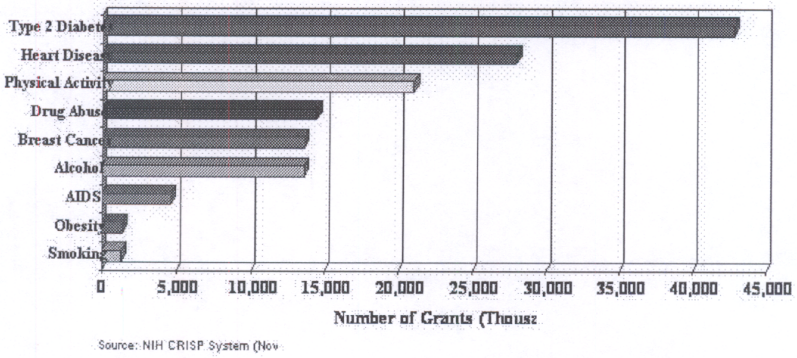


Figure 6 NIH Research Grants, 2002



Source: NIH CRISP System (Nov

Senator SPECTER. Thank you very much, Dr. Stern. I have quite a few questions. I will come back to you.

STATEMENT OF DR. NAOMI NEUFELD, PRESIDENT, FOUNDER AND MEDICAL DIRECTOR OF KIDSHAPE, INC.; PRESIDENT OF NEUFELD MEDICAL GROUP; CLINICAL PROFESSOR OF PEDIATRICS, UCLA SCHOOL OF MEDICINE

ACCOMPANIED BY:
MS. DANIELLE BAILEY, LOS ANGELES
MS. LEE IDA BOYD-BAILEY, LOS ANGELES

Senator SPECTER. Our next witness is Dr. Naomi Neufeld, president, founder and medical director of KidShape, Inc., President of the Neufeld Medical Group, and a clinical professor of Pediatrics at the UCLA School of Medicine. She received her A.B. in biology and master's in medical science from Brown University, and an M.D. from Tufts University. Dr. Neufeld is accompanied by graduates of the KidShape program, Ms. Danielle Bailey, who is 6 years old, and her mother, Ms. Lee Ida Boyd-Bailey from Los Angeles. So welcome, Dr. Neufeld, and we have an extra chair for Ms. Lee Ida Boyd-Bailey.

Dr. NEUFELD. Good morning, Mr. Chairman. Thank you for the opportunity to discuss lifestyle modification and weight control for children and families. My name is Naomi Neufeld. I am a pediatric endocrinologist in practice in Los Angeles, and serve as the Medical Director of KidShape. I am here today with Ms. Christiane Rivard, our Program Director, and the Bailey family.

The present epidemic of childhood obesity is much more serious than when I started KidShape in 1987 and it is associated with serious diseases and disabilities previously seen only in adults. This discussion is not just about obesity, but the burden of those associated diseases. We have found that the most effective way to deal with childhood obesity is a program that capitalizes on the strength of the family. KidShape is a family-based weight management program designed for overweight children ages 6 to 14. Families enroll for 8 weekly 2-hour classes. A team of physicians, dieticians, and other medical professionals wrote the KidShape workbooks, which are published in English and Spanish.

Each KidShape class includes interactive nutrition lessons designed for the entire family, discussion groups for parents and for students which meet separately, and on-site physical activity, where we teach families that physical activity can be fun. Families work together as teams.

In 1997, the KidShape program was approved by Medi-Cal, our local Medicaid, to treat eligible children. By obtaining third party reimbursement, KidShape was able to expand and maintain 20 community-based sites in Los Angeles, Orange and Ventura Counties. And last year we enrolled 1,285 families. Additionally, several KidShape sites are operating in Western Pennsylvania through Highmark Insurance, and Texas under licensing agreements. And we have received hundreds of requests to license our program throughout the country.

The cost of treating a family in the KidShape program is $400 for the 8-week session. There are nearly 400,000 children in Los Angeles and Orange Counties alone who would qualify for KidShape. If we were to reach just 10 percent of these children and

their families, the cost would be $15 million, or less than $1 per person.

Since Type 2 diabetes developing in a person before the age of 20 costs an estimated $7.1 million in lifetime expenses, the impact of such a program is considerable.

The KidShape program works. Eighty-seven percent of children lose weight during the 8-week program, 87 percent of children keep their weight off for 2½ years. We see changes in diet, exercise, and personal habits which contribute to weight loss.

However, this is not just about weight. Many children with severe obesity already have evidence of coronary artery disease, and some as young as 10 have already developed Type 2 diabetes. They show remarkable changes in blood pressure, blood lipids and insulin sensitivity, which leads to a reduction in diabetes in a period as short as 6 weeks.

This program not only improves lives, but also saves money. Juan V. was a 7-year-old boy who weighed 179 pounds, suffered from asthma and had hospital bills of $15,000 per year. He and his family enrolled in KidShape and he lost nearly 40 pounds. He no longer has recurrent asthma attacks, and his annual medical bills are now less than $400.

There is even more to this story. Juan's mother, at age 38, suffered from both diabetes and hypertension. She lost 25 pounds on the KidShape program. She no longer has high blood pressure, and her doctor is taking her off diabetes medication.

PREPARED STATEMENT

Over 40 percent of parents of KidShape participants are overweight themselves, and many suffer from diseases directly related to obesity. Family-based weight management programs are not only effective for the child, but may be even more important as a means of reaching the hard-to-treat, resistant adult population. I would like to turn this over to Danielle.

[The statement follows:]

PREPARED STATEMENT OF NAOMI D. NEUFELD

INTRODUCTION

Senator Specter, Members of the Committee and honored guests. Thank you for the opportunity to discuss lifestyle modification and weight control for children and families. My name is Naomi Neufeld. I am a Pediatric Endocrinologist in practice in Los Angeles, and serve as the medical director of KidShape®. I am here today with Mrs. Christiane Wert Rivard, KidShape Program Director and the Bailey Family, recent KidShape graduates. The present epidemic of childhood obesity is much more severe than when I started KidShape in 1987, and is associated with serious diseases and disabilities, previously seen only in adults. This discussion is not just about obesity, but about the burden of associated diseases; it is not just about the burdens of disease on patients and their families, but also the burden on a Medi-Caid system which is stretched to capacity.

We have found that the most effective way to deal with obesity in childhood is in a program that capitalizes on the strength of the family unit.

DESCRIPTION

KidShape is a family-based weight management program designed for overweight children ages six to fourteen years old. Families enroll in 8 weekly two-hour classes. A team of physicians, dietitians, social workers and psychologists wrote the KidShape® workbooks, which are published in English and Spanish.

Each KidShape class includes interactive nutrition lessons, designed for the entire family, discussion groups for parents and for students which meet separately, and on-site physical activity, where we teach families that physical activity can be fun. Families work together as teams.

AVAILABILITY

In 1997, the Kid Shape program was approved by Medi-CAL to treat eligible children, and to bill in accordance with the EPSDT (Early and Periodic Screening, Diagnostic and Treatment) Program. By obtaining third party reimbursement, KidShape was able to expand and maintain 20 community-based sites in Los Angeles, Orange and Ventura counties. Last year we enrolled 1285 children. Additionally, several KidShape sites are operating in western Pennsylvania and Texas under licensing agreements. We have received hundreds of requests from health care providers, schools and health insurance companies to license our program around the country.

To meet the demands of our clients, KidShape Foundation has expanded its program activities to reach children of all ages.

COSTS

The cost of treating a family in the KidShape program is $400 for the 8-week session. It is disheartening that despite the growing epidemic of obesity, we received less than 20 percent of authorized payments from Medi-CAL and other third-party payers last year; leaving a significant shortfall to be covered by grants and private donations. We have been successful in our goals and would like to extend the services of the program, but the present method of financing is a barrier.

OUTCOMES

The KidShape program works! 87 percent of participants lose weight within the 8-week program. 80 percent of children keep their weight off up to 2½ years after the program. Additionally, we see changes in diet, exercise and personal habits, which contribute to weight loss.

However, it is not just about weight. Many children with severe obesity already demonstrate significant coronary artery disease, and some as young as 10 have already developed type 2 diabetes. They show remarkable changes in blood pressure, blood lipids and insulin sensitivity-which leads to a reduction in the risk of diabetes, in a period as short as 6 weeks.

Here is an example of how this program not only improves lives, but also saves money. Juan V was a 7-year-old boy who weighed 179 lbs, suffered from asthma and had hospital bills of $15,000/yr. He and his family enrolled in KidShape, and he lost nearly 40 lb. He no longer has recurrent asthma attacks, and his annual medical bills are now less than $400.

But there is even more to this story. Juan's mother, at age 38 suffered from both diabetes and hypertension. She lost 25 lbs. during the KidShape program. She no longer requires her blood pressure medicine; and her doctor is considering taking her off diabetes medication.

Over 40 percent of parents of KidShape participants are overweight themselves, and many suffer from diseases directly related to obesity. Family based weight management programs are not only effective for the child, but may even be more important as a means for reaching the hard to treat, resistant adult population

CONCLUSION

I applaud your committee for addressing the most important public health issue to face this generation. Lifestyle changes result in a wise use of healthcare dollars for conditions that affect up to 40 percent of our children and nearly 70 percent of all adults; they reduce the burden of disease and can be cost-effective. The cost of such a program is relatively small compared to long-term direct and indirect benefits-personal, medical and financial. Thank you.

KIDSHAPE PROGRAM SUMMARY

KidShape is a non-profit community and family-based weight management program, which offers two effective family-based pediatric weight management programs throughout Southern California, including: (1) KidShape, serving families with children ages six to fourteen; and (2) KinderShape, serving families with children ages three to five. Each program is taught by a team of health care professionals, including: a registered dietitian, a mental health professional, a physical activity instructor and a health educator. The goal of both KidShape Foundation programs is to promote healthy lifestyles for entire families with overweight children,

focusing on healthy eating, increased physical activity, and an appreciation for oneself regardless of physical size.

Developed in 1987 by Naomi Neufeld, MD, pediatric endocrinologist, KidShape (the first program developed by the KidShape Foundation) originated out of a desperate need for effective prevention and treatment of childhood obesity. KidShape empowers families to make healthier lifestyle choices for their families and themselves. Since its inception, KidShape has provided services to thousands of families—demonstrating to each family the importance of healthy eating and physically active lifestyles.

The KidShape program utilizes a curriculum based on structured diet, exercise participation, parent support and behavior modification. It was designed to respond to the needs of the multi-cultural community in Southern California (CA), and has been available to low-income, primarily minority families, many of whom are at risk for Type 2 Diabetes. The KidShape curriculum is divided into two 4-week modules; each family attends a minimum of eight consecutive two-hour weekly culturally relevant classes. Each KidShape class is divided into three components, including: nutrition (where families participate in hands-on nutrition activities designed to promote an understanding of healthy eating), discussion groups (Parents and students meet separately; parents discuss many topics including parenting skills; students discuss body image and self-esteem; this component facilitates health behavior changes, leading families to eating healthier and becoming more physically active.), and on-site physical activity (kids are shown that physical activity can be fun!; focuses on skill building and self-efficacy and not on competitiveness). Parent participation is required in the program. KidShape's most significant accomplishment is its proven track record in helping children and their ENITRE families improve lifestyle habits, which leads to weight loss and improved self-esteem, as well as decreasing the risk factors associated with Type 2 diabetes and other debilitating diseases.

As reported in the *Los Angeles Times* in December 1997, KidShape is the only program in Southern CA offering effective family-based weight management services to all families regardless of their insurance status or their ability to pay for the program. Until 1997, KidShape had only one program site operating in Southern CA, located in West Los Angeles, and enrolled families from over a 70-mile radius from that site. Today KidShape operates 18 community-based sites throughout Los Angeles, Orange and Ventura counties in Southern CA. In addition several sites are operating in Western Pennsylvania and Texas under licensing agreements with KidShape. KidShape® Foundation is also expanded its program activities. Currently the KinderShape program is being implemented in Orange County, CA and will be expanding to Northern California and throughout the County of Riverside, CA, through additional licensure agreements. KidShape® Foundation is currently developing a program for overweight 13–18 year olds, TeenShape®.

EARLY AND PERIODIC SCREENING, DIAGNOSIS, AND TREATMENT PROGRAM (EPSDT)

EPSDT is designed to improve primary health benefits for children with emphasis on preventive care that has been a part of the federal Medicaid program since its beginning in the late sixties. After a Medicaid review in 1989, Congress moved to increase the services of EPSDT through the Omnibus Budget Reconciliation Act. States must now cover regular and periodic exams for all eligible children under the age of 21. They must also provide any medically necessary services prescribed by the exams, even those not covered in a state's Medicaid plan. This includes many assistive devices and services for individuals that are under 21 which have been excluded under the regular Medicaid program in the past.

The Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) service is Medicaid's comprehensive and preventive child health program for individuals under the age of 21. EPSDT was defined by law as part of the Omnibus Budget Reconciliation Act of 1989 (OBRA 89) legislation and includes periodic screening, vision, dental, and hearing services. In addition, section 1905(r)(5) of the Social Security Act (the Act) requires that any medically necessary health care service listed at section 1905(a) of the Act be provided to an EPSDT recipient even if the service is not available under the State's Medicaid plan to the rest of the Medicaid population.

SUMMARY STATEMENT OF DANIELLE BAILEY

Ms. BAILEY. My name is Danielle Bailey and I am 6 years old. Before I went to KidShape, kids used to call me "fat girl."

KidShape helped me change my eating habits, lose weight, and not be a fat adult. I like going to KidShape and learning about the food portion size, reading the labels, talking to Dr. Beth, and making healthier food choices.

Senator SPECTER. Ms. Boyd-Bailey, would you care to add something to this?

PREPARED STATEMENT

Ms. BOYD-BAILEY. No. I just had a good time going to KidShape. She encouraged me to go, "Mom, I want to go, I want to go," so we went. I lost weight, she lost weight, she has kept me eating healthy. She keeps me—"Danielle, do you want to go to McDonald's?" "Mom, that is not healthy."

[The statement follows:]

PREPARED STATEMENT OF LEE IDA BOYD-BAILEY

My daughter and I were both "overweight" and I was not sure how to teach a 6-year-old how to lose weight without using the word diet. That's when we met Dr. Neufeld and found out about the Kidshape program. I thought that the program would be "over my daughters head", but we went anyway and she absorbed the information like a sponge.

She enjoyed every aspect of the program: reading the nutrition facts, the exercise program, talking with Dr. Beth, keeping a food journal, learning to eat healthier meals and snacks and learning what a real serving is.

Kishape has not only effected me and my family, but family members, friends, even my co-workers. They have seen how easy it was for Danielle and I to change our eating habits and they have integrated some of the eating habit into there lives.

Danielle and I are much happier and slimmer since attending Kidshape. She tells everyone she meet what a wonderful program it is and that they should call Kidshape to help their child eat healthier, lose weight and not be a big overweight adult who can't fit through a door. (I don't have to say a word).

Senator SPECTER. So you are just a couple of kids from KidShape. We will come back to you for some questions.

STATEMENT OF DR. ADAM DREWNOWSKI, DIRECTOR, CENTER FOR PUBLIC HEALTH NUTRITION, UNIVERSITY OF WASHINGTON; MEMBER, FRED HUTCHINSON CANCER RESEARCH CENTER, SEATTLE, WA

Senator SPECTER. Our next witness is Dr. Adam Drewnowski, director of the Center for Public Health Nutrition at the University of Washington and a Member of the Fred Hutchinson Cancer Research Center in Seattle. He has his master's degree in biochemistry from Oxford University and a Ph.D. in psychology from Rockefeller University. Thank you for joining us, Dr. Drewnowski. The floor is yours.

Dr. DREWNOWSKI. Thank you, Mr. Chairman. It is a privilege to be here. Thank you for the opportunity to make these brief remarks. I will limit myself to just three points. The first one is this. It underscores what has been said here today, that obesity represents a huge societal and public health problem. It is a debilitating condition. It is linked to other chronic diseases. It increases the cost of medical care and can damage the quality of life beyond repair. We all know this. The Centers for Disease Control has done an absolutely phenomenal job in making sure the obesity epidemic is addressed at State, local and community levels.

The word "community" brings me to my second point. It is less appreciated that the obesity epidemic is really rooted in the poorest

neighborhoods. The highest rates of obesity and diabetes are found among groups with the lowest education and least income. The California Center for Public Health Advocacy has analyzed data from the California Department of Education Fitness grant and these are here. They make the point much more eloquently than I could. They show that obesity rates in the Bay Area are highest in Oakland, northern Palo Alto and that among the districts with highest proportion of unfit and overweight kids, ten of them are in Los Angeles County.

That underscores the point that obesity really is a major issue for people with the least resources, least income, least education. It really is a socioeconomic issue. And my suggestion here is that the socioeconomic aspects of the obesity epidemic deserve much more research attention. Disadvantaged communities have much fewer options when it comes to changing lifestyle, eating healthier diets, or exercising more.

At this time, there are very limited data on how education and incomes can affect diet quality and the economics of food choice. We need more research to provide the research base for fiscal and food policies, including food assistance programs. Food assistance programs have recently been criticized in the Washington Post for their alleged role in fattening the poor. And I am sorry to say there is something to that because the unfortunate fact is that healthier diets cost more. It is very difficult to eat a healthy diet if you have fewer resources.

I just want to tell you that the price of added sugar and added fat in our diet is extremely low. You can get 20,000 calories per dollar from sugar. Nutritionists equate 3,500 calories to a pound of body weight, so the cost of gaining several pounds of body weight is under a dollar. And this is why our diet is largely composed of added sugars and added fats, not natural sugars in vegetables and fruit, but added sugars; not natural fats in dairy products and meat, but added fats. There is nothing cheaper.

It is very difficult to satisfy the economic constraints, provide people with healthier diets, and address the obesity epidemic. It really is a social issue. So we do have some data on the determinants of food choice. We really ought to have more.

Then, my final point is how the various efforts by the CDC can be addressed at the local level. The CDC has immense responsibilities and coordination at the local level is critical. And here we have a number of centers that have been springing up which specifically deal with the obesity epidemic looking at policy, societal and community issues. We have a new center at the University of Washington established with vitamin antitrust settlement monies, secured for us by our Attorney General, Christine Gregoire. There is a center at Berkeley called the Center for Weight and Health that we propose to partner with. The Berkeley Center organizes the California Childhood Obesity Conference. There is a colleague of mine here representing a center at Oakland. And these centers really ought to be brought into the CDC structure.

So I propose expanding the PRC network that CDC already has, 28 centers affiliated with schools of public health, to include additional centers specifically addressing obesity. And those would parallel NIH centers for obesity nutrition research which deal with the

metabolic, physiological and medical aspects of obesity. We really need to address obesity from the public health standpoint, and expanding the CDC centers would be one way to do it.

PREPARED STATEMENT

As part of our Center, we have recently launched a small grant campaign for healthy youth, and there was a huge grassroots demand, which will remain unmet. We got 50 letters of intent for projects totalling $1.5 million. We have $100,000 to give out. There was a huge, huge interest. And projects like this really ought to be funded by the CDC, and we stand ready to work with the CDC on this topic. Thank you.

[The statement follows:]

PREPARED STATEMENT OF DR. ADAM DREWNOWSKI

Mr. Chairman, it is a privilege to appear before the Subcommittee and I thank you for giving me the opportunity to make these brief remarks.

My name is Adam Drewnowski. I am Director of the new Center for Public Health Nutrition at the University of Washington. I am Professor of Epidemiology and Medicine and Director of the Nutritional Sciences Program at the School of Public Health and Community Medicine in Seattle, Washington.

My testimony concerns the national obesity epidemic—and the strategies for improving nutrition and health at the neighborhood and community level. National data indicate that two out of three U.S. adults are overweight, and that almost one in three is obese. It is shocking to note that 15 percent of American children and adolescents (ages 6–19y) are overweight; this is three times the number we saw in 1980.

It is sometimes less appreciated that the obesity epidemic is rooted in the poorest neighborhoods. The highest rates of obesity and diabetes occur in groups with the highest poverty rates and the least education. To understand the extent of the obesity epidemic among California's children, the California Center for Public Health Advocacy analyzed the percentage of children in each Assembly District who were overweight or unfit. Data analyses were based on the California's Department of Education 2001 FITNESSGRAM test. In 1995, California mandated statewide physical performance testing for all fifth, seventh, and ninth graders at least every two years.

Across all Districts statewide, not just 15 percent—but 34 percent of Latino children were overweight and 45 percent were unfit. Twenty-nine percent of African-American children were overweight and 46 percent were unfit. Of the 16 California Assembly Districts with the highest proportion of overweight children, 10 were in Los Angeles County. Clearly, obesity represents not only a medical issue but a huge societal and public health problem—and one that is tied to economic resources, education, and income.

The upper-income groups are by no means spared. Studies by Dr. Roland Sturm, a prominent health economist at the RAND Corporation in Santa Monica show that obesity rates are increasing evenly across the board—across all education and income levels. There are suggestions that education, rather than income, can offer some degree of protection. This is an argument for supporting education in general and nutrition education in particular as the key tools in our battle against obesity.

Rates of extreme obesity among adults are exploding. Dr. Sturm found that obesity rates—defined as weight in excess of 175 lb for a woman 5′4″ (body mass index = 30)—have doubled over the past two decades. During that time, rates of massive obesity (>235 lb or BMI = 40) have quadrupled. We are not just becoming obese—we are becoming gigantic. Massive obesity is linked to well-documented—and costly—health problems.

POVERTY AND OBESITY

Socioeconomic aspects of the obesity epidemic deserve more research attention. As the CDC and other agencies develop prevention strategies, we need to address problems faced by minorities and the poor. Disadvantaged communities have more limited options when it comes to better nutrition, fitness, and the adoption of healthier lifestyles. There are limited data at this point on whether and how incomes, edu-

cation and ethnicity affect diets and fitness, to say nothing of the issue of food pricing and the economics of food choice.

More research effort in this area is badly needed to provide evidence base for fiscal and food policies, including food assistance programs.

More research is needed on the economics of food choice, food prices, and overall diet costs. Consumer decisions about what to eat, where to eat, when to eat, and how much to eat are influenced by economic resources and by the environment in which the choices are made. People also make tradeoffs between immediate satisfaction and the future promise of better health. We need to pay more attention to societal influences on eating habits and their contribution to the obesity epidemic. Some of the budget for primary prevention activities at the CDC could be devoted to social disparities and their impact on diet quality, nutritional status and body weight.

COORDINATION AT THE LOCAL LEVEL

On behalf of the Public Health community, I want to say how much we appreciate the very substantial efforts that the CDC has been making to stem the obesity epidemic nationwide. We applaud the proposed increase in funding for the Nutrition and Physical Activity initiative and for other CDC-led prevention activities.

The CDC has immense responsibilities. It is now charged with monitoring health and health behaviors at the national level, coordinating national, state and school-based programs for health promotion, developing evaluation, planning, and policy documents, media campaigns and other initiatives and programs.

These tasks are critical to the nation's health. Please allow me to suggest some ways in which CDC activities can be implemented at State and local levels. The issue before us is finding the best ways in which existing funds can be deployed to maximum effect. In the 2003 Senate Bill, the Committee noted that coordination at the local level was critical to ensure that CDC resources were used to their optimum potential and to avoid duplication. The CDC was asked to urge its grantees to establish state-level positions to oversee nutrition and physical activity programs.

OBESITY PREVENTION IN WASHINGTON STATE

I am pleased to say that, consistent with Congressional guidelines, Washington State did establish a Physical Activity and Nutrition Section within the State Department of Health. The PAN section was charged with overseeing the CDC-funded plan for preventing obesity in the State. In 2001, Washington State was one of 12 states to receive CDC funding ($726,517) for state-based nutrition and physical activity programs to prevent chronic diseases, including obesity. The State convened a diverse group of individuals with expertise in education, transportation, planning, nutrition, physical activity, agriculture, parks and recreation, and health care to develop an action plan to: (1) slow the increase in the proportion of adults who are obese; (2) reduce rates of chronic diseases that are associated with obesity; and (3) improve quality of life. The State Plan is being piloted in Moses Lake, a small community in Eastern Washington. California was another state that received CDC funding for such work.

I believe that state and local government agencies are most effective when working together with academic institutions and community groups. Our Center for Public Health Nutrition was created last year by the University of Washington, thanks to a financial settlement in a global vitamin price-fixing case. Our mission is to advance and promote public health strategies to improve nutrition and health of Washington State residents.

We believe that partnerships and alliances at the local level are the key. To carry out our mission, we formed strong partnerships with government agencies, including the State Health Department and the local health authority, Public Health Seattle & King County. We will support Washington State Department of Health in their application for a CDC Comprehensive Grant for obesity prevention. We are also working with Seattle Public Schools on environmental approaches to obesity prevention in schools, a project funded by the National Institutes of Health.

We have also reached out to the community. Using settlement funds, we are able to sponsor a small program of grants for healthy youth, destined for community based projects. The grassroots demand for such programs is overwhelming—and unmet. We received 50 letters of intent from school districts, community groups and other organizations for a number of worthwhile projects—for a sum total of $1.5 million. Our limited funds will allow us to meet one tenth of the demand. However, any solution to the obesity epidemic needs to come from the community, and we view such projects as a valuable contribution to capacity building at State, local and community levels.

PUBLIC-PRIVATE ALLIANCES

We are encouraged by the fact that we are not alone. There are other academic-based Centers on the West Coast that focus specifically on obesity prevention through lifestyle modification and structural and policy change. I want to mention specifically the Center for Weight and Health affiliated with the University of California at Berkeley that partners with California State agencies in running the biennial—and hugely successful—Childhood Obesity Conference. The Berkeley Center is the recipient of another NIH grant on schools nutrition and is engaged in numerous community projects.

Our Center for Public Health Nutrition and the Center at Berkeley share a number of common features. Both are University-affiliated and both partner with State and local agencies. Both include a policy component and community-based work. We are also reaching out to foundations and private industry to support some of our efforts.

I want to make a case for engaging academic institutions, particularly Schools of Public Health, in helping to coordinate CDC-led obesity prevention efforts at the local level. Schools of Public Health have expertise in the design and evaluation of health-related policies and programs and can help build state capacity in this area. Schools of Public Health train health professionals needed to address the obesity issue. Schools of Public Health are also engaged in the local community by taking the lead on many community based studies. Another way that Schools of Public Health can help tackle the obesity problem is through our HRSA-funded training centers for public health professionals that allow us to reach out and work with local and state health departments. Our School of Public Health serves the entire northwest region—the states of Alaska, Washington, Wyoming, Montana and Idaho.

My suggestion is to build up the existing CDC-based infrastructure. Both University of Washington and UC Berkeley host Health Promotion Research Centers, 2 out of 28 academic research centers funded by the CDC. Their mission is to improve health by conducting high-quality prevention research that can be incorporated into community practice. It would be my suggestion to expand the network of PRCs to include some new Centers specifically devoted to obesity prevention.

The obesity epidemic cuts across disciplines and involves a societal and policy component. The Center for Public Health Nutrition and the Berkeley Center could be used as models for other Centers throughout the US. Their mission and goal would be to address the obesity epidemic from the public health and public policy perspective. Such Centers would promote interactions between academia, local and state government agencies, policy makers and local communities. Providing support for such Centers would ensure that CDC funds are optimally used at the local level.

To reiterate—the obesity epidemic is a huge public health problem that needs to be addressed using public health approaches. We are willing to work with the CDC to implement obesity prevention strategies and programs at the local level.

Thank you for the opportunity to make these remarks.

I would be pleased to answer any questions that you may have.

Senator SPECTER. Thank you very much, Dr. Drewnowski. We will come back for questioning in just a few minutes.

STATEMENT OF LESLIE MIKKELSEN, MANAGING DIRECTOR, PREVENTION INSTITUTE

Senator SPECTER. Our final witness is Ms. Leslie Mikkelsen, Managing Director of The Prevention Institute. She develops new programs and strategies to place prevention in the center of efforts to improve community health and well-being. She received her Master of Public Health degree from the University of California at Berkeley. Welcome, Ms. Mikkelsen. The floor is yours.

Ms. MIKKELSEN. Thank you, Chairman Specter. I really, too, appreciate the opportunity to be here today. I was particularly enthused to read your committee report that recommended not only increased funding, but really focused on prevention. I think it is critically important that we take a prevention approach.

I am going to focus my remarks today on the need for environmental and policy approaches to really support healthy eating and activity at the community level. My own commitment to this ap-

proach really comes from my experience being a nutritionist. I worked for the New York City Food Bank, and then here across the Bay in Alameda County. And I will never forget a particular nutrition education class. It was very successful. And then lunch came, and it was a Polish hot dog, microwaved, potato chips, Hostess cupcakes, and Kool-Aid—clearly, not the foods we were discussing as an ideal nutritious meal. What might seem shocking, you know, is this was a community agency and they had wanted a nutrition class. Why did they serve this lunch?

Senator SPECTER. Where was this served?

Ms. MIKKELSEN. This was actually in Oakland.

Senator SPECTER. Where?

Ms. MIKKELSEN. In Oakland. I will not name the group, but it was a small community organization that worked with women that were recovering from substance abuse and who had young children. My point with this is that that organization had limited resources. They had no kitchen. They were dependent on donations. And what I realized with that class was that the women who I was working with, who were also very low income, were going to face similar challenges when they went out into their neighborhoods. What they were going to feed their family was not only going to come from the information I had given them, but it was going to come from what was affordable and accessible and marketed to them.

But I would say that the issue of the environment is not limited to people with low incomes. I think we all face challenges in accessing healthy food and activity at certain times, and that we are all influenced by the surrounding environment, and that this issue applies to physical activity as well as to nutrition. There are well-demonstrated links between environmental factors and physical activity levels. For example, people are far more likely to walk if they live in a mixed-use neighborhood where there is both commercial and residential close together. They are also more likely to be active if there are more parks in their neighborhood. Concerns about speeding cars and violence are keeping our seniors from being out on the streets and getting their daily activity. Likewise, parents are often afraid to let their children play on the streets. These are serious neighborhood issues that keep people from being active.

Our eating patterns are also influenced by the environment around us. I find often in my trips from Oakland to Sacramento, where I go a lot, that if I walk into a convenience store, it is very hard to find a snack that is not high-fat or high-sugar. My options are very limited. And I think we need to face that, in our schools, and workplaces, and convenience stores, high-fat and high-sugar foods are often the norm, and I think that they have become the norm in part by the billions spent on advertising. We mentioned earlier that these companies know a lot about how to sell their products. Personally, as a nutritionist, I find it very disturbing when I see an ad on TV that is promoting a very high-sugar cereal, and it implies that it is a good way to start the day. Many of these ads are targeted specifically to children, and I think it sets up a very difficult situation when a parent who is trying to do well by their children goes to the supermarket, and these products are at eye-level, they contain a toy, and their children are demanding them.

I think that these are the kind of environmental issues we need to start thinking about what we are going to do if we really want to support a major change in the eating and activity patterns in our country.

For these kinds of reasons, we have joined together in California to create a new network called the Strategic Alliance for Healthy Food and Activity Environments which is really working to make sure that, along with good educational programs, we have efforts to promote environmental change. And I will just very briefly name a couple of things we have been working on. One is we have been working across the State in many school districts to look at the quality of the food and to try to get out the soda and the high-fat snacks, and really bring in healthy options. We have also been looking at this issue of creating community environments that support physical activity, and there are some really measured steps communities can take, like design that encourages bicycling and walking. And another area that I think is very important is that government institutions have a great opportunity to be a model for healthy practices. For example, you may have been in the Health and Human Services Building in Rockville, Maryland, that has a farm stand in the lobby. These are the kinds of things that we can be doing and really change the environment so that it is easy for people to make a healthy choice.

Senator SPECTER. What do they have in their lobby?

PREPARED STATEMENT

Ms. MIKKELSEN. They have a farm stand, so that when you walk in, there are fresh fruits and vegetables from their local community. Thank you.

[The statement follows:]

PREPARED STATEMENT OF LESLIE MIKKELSEN

My name is Leslie Mikkelsen. I am Managing Director of Prevention Institute. I would like to thank you for the opportunity to be part of this very important hearing to address a serious and growing health problem in the United States.

I am very enthusiastic that The Committee on Appropriations has recognized the gravity of this public health crisis and recommended significant funding to increase physical activity, improve nutrition, and reduce the prevalence of obesity and overweight.

I would like to share with you my perspective, gained through my work as a nutritionist and public health practitioner, on effective measures necessary to turn around the frightening statistics. There are numerous factors which influence individual food and activity choices. Changing the overall pattern of these choices requires a multi-faceted approach that addresses not only individual knowledge, motivation, and skills, but also ensures the surrounding environment supports healthy behaviors.

This point was driven home for me in my work as the nutritionist for the food banks of New York City and Alameda County. An important lesson for me in this work occurred after I had led a particularly successful nutrition education session with mothers of young children, sponsored by a local community agency. The group was enthusiastic and quite interested in practical guidance about how best to nourish their children. Then lunch arrived. It consisted of a microwaved "Polish" hot dog, potato chips, cup cakes, and a fruit drink. At that moment, it was clear to me why education was only one element of the strategy to change the dietary habits of these families.

It might seem shocking that a community organization interested in nutrition would serve this lunch, but they were a small organization, without a kitchen and dependent on donations. The women who had participated in this class were operating with the same limited resources as this organization, and their ability to pro-

vide nutritious foods to their family was limited by what was accessible and affordable in their communities. This effect of the environment is not limited to low-income families, as I will discuss later on.

This experience highlighted why environmental changes are an important aspect of the strategies to achieve behavior change. It is important to recognize that people are not making decisions about what to eat and when to be active in a vacuum. Therefore it is important that public policy and health promotion efforts support the creation of an environment that makes healthy choices easy.

Turning around the obesity epidemic requires attention to this community environment along with attention to individual behavior change and provision of primary care. As noted in the Committee report, a population-based primary prevention strategy needs to include policy and environmental interventions.

A useful framework for visualizing this strategy is the Spectrum of Prevention, a public health planning tool that identifies six levels of action to achieve behavior change. This tool has been applied to major health concerns ranging from tobacco control to traffic safety, violence prevention, nutrition, and physical activity. It emphasizes the importance of including systems changes along with individual behavior change and community education.

—*Influencing Policy Legislation*.—Developing strategies to change laws and policies

—*Changing Organizational Practices*.—Adopting regulations and shaping norms

—*Fostering Coalitions and Networks*.—Convening groups and individuals for greater impact

—*Educating Providers*.—Informing providers who influence others

—*Promoting Community Education*.—Reaching groups with information and resources

—*Strengthening Individual Knowledge and Skills*.—Enhancing individual capacity

It was the recognition of the need for environmental changes to go hand-in-hand with individual behavior change efforts that led Prevention Institute to join with other prominent public health organizations to found the Strategic Alliance for Healthy Food and Activity Environments. We also work in partnership with the National Alliance for Nutrition and Activity.

Unfortunately, in many California communities, high-fat and high-sugar foods and the marketing that promotes them have a prominent place in our schools and neighborhoods, and are frequently the lowest-cost options. Physical activity has been engineered out of our lives as community design favors transportation by car over walking and biking, and many parents are afraid to let their children play outside. While meeting physical activity goals is frequently visualized as engaging in scheduled exercise, it is frequently easier to increase activity by incorporating it through one's daily life.

The limited availability of healthy options is even more pronounced in low-income neighborhoods, where families must prioritize basic needs. Unfortunately, healthy behaviors are often viewed as a luxury; the survival mechanisms used to combat poor food access and unsafe neighborhoods (i.e., consuming high-fat, fast foods, and staying indoors rather than playing on the streets) establish patterns that put children at risk for developing chronic disease.

The Alliance has identified five key sectors where we believe joint action is needed to alter current eating and activity patterns and shift the environment towards supporting healthy behaviors. These include children's environments, government, industry practices, the health care system, and the media. A complete description of this approach is attached.

Today, I would like to highlight some of our areas of focus which are being implemented in communities across the country. I urge you to work to implement similar policies nationally. Some of the most promising approaches include:

(1) Implementing Nutrition Standards for all Foods Sold in School, Pre-school, and After School Programs

A key tenet of effective behavior change is to model and reinforce healthy behaviors. Unfortunately, schools frequently provide easy access to soft drinks, high fat snack foods, and dessert through vending machines and a la carte lines. Brand name fast food is even available in some high schools.

As public institutions dedicated to children's learning, schools should serve as a model for healthy practices rather than a conduit for unhealthy habits. These should apply to all institutions serving children from pre-school, school, and after school programs.

The Alliance was involved in securing the passage of Senate Bill 19 which establishes nutritional standards for foods sold outside the National School Breakfast and

Lunch programs in elementary schools and middle schools. We are currently helping to ensure adequate technical assistance and evaluation of pilot projects taking place before the bill takes effect. At the same time, members have been involved in the passage of local school district measures to remove soda and in some cases junk food from all schools. There is great interest in this approach around the country, and we have heard from localities in states as diverse as Alaska, Hawaii, New York, and Pennsylvania that are moving towards similar restrictions. Where changes have been made, preliminary results are positive, with sales of water, 100 percent juice, and healthier snack choices yielding revenues equal or greater than those previous.

(2) Cultivating Active Community Environments

There are well-demonstrated links between community design and physical activity levels. Current land use trends have tended to increase automobile dependency and make walking and biking less practical, less convenient, less safe and less pleasant.[1] From 1960–1990, the percentage of workers with jobs outside their counties of residence tripled.[2] During the same period, vehicle miles traveled rose dramatically while walking declined.[3] Mixed land use increases the number and percentage of walking and biking trips, generating up to four times as many walk trips for trips less than one mile.[4] Access to neighborhood parks nearly doubled the likelihood that U.S. adults were physically active compared to those without access to parks. Concerns about neighborhood safety have been associated with lower activity rates among older adults.[5]

Nationwide, only 31 percent of children who live within 1 mile of school make the trip on foot; only 2 percent of school children who live within 2 miles of school travel by bike.[6] Parents are also afraid to allow their children to play outside and turn to safe, passive entertainment ranging from TV to home videos and computer games to occupy their children's free time. Children in the United States spend more hours watching television and videotapes and playing video games than sleeping; these passive leisure time activities are linked to increased risk for obesity.[7]

The Strategic Alliance is supporting a number of local and state government policies that enhance active community environments, which would benefit from support at the federal level. Measures being taken by communities to alter environments to enhance physical activity include traffic calming and routine accommodation of bicyclists and pedestrians in all transportation projects. Opportunities exist to reward local governments who promote infill development and more walkable communities with transportation incentive grants. Funding of the Safe Routes to School program has enhanced walking to school for many children. Resources also need to be made available to support maintenance and development of parks and areas for active recreation.

(3) Increasing Access to Nutritious Foods in all Neighborhoods

Anyone who has searched a convenience store for a healthy snack knows that options can be limited. Restaurants can also be a challenging place to find fruits and vegetables to contribute to 5 a day. Access to nutritious foods is even more challenging in low-income neighborhoods, where there are few supermarkets and small stores have limited quantities of high-priced fresh items.

Supermarkets have become the primary source of fresh produce for most grocery shoppers in the United States. Yet predominantly low-income neighborhoods in both central cities and rural areas are less likely to have supermarkets. A 1995 analysis of 21 major U.S. metropolitan areas found there were 30 percent fewer supermarkets in low-income areas than in higher-income areas; it also found low-income consumers were less likely to possess automobiles, further limiting their access to food choices.[8] Studies have consistently shown that prices at small grocery and convenience stores can exceed those at chain supermarkets by as much as forty-eight

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[1] A Primer on Active Living by Design. Active Living By Design Program. The Robert Wood Johnson Foundation. www.activelivingbydesign.org

[2] BTS Journey to Work trends, 2001; National Transportation Statistics Report 1999.

[3] BTS Journey to Work trends, 2001; National Transportation Statistics Report 1999.

[4] Holtzclaw J. (1994) Using Residential Patterns to Decrease Auto Dependence and costs, Natural Resources Defense Council, San Francisco, p. 16–23.

[5] Centers for Disease Control and Prevention. Neighborhood safety and the prevalence of physical inactivity-Selected states, 1996. MMWR. 1999; 48(7):143–6.

[6] Centers for Disease Control and Prevention. Calculations from the 1995 Nationwide Personal Transportation Survey.

[7] Robinson TN. "Reducing Children's Television Viewing to Prevent Obesity: A Randomized Controlled Trial." Journal of the American Medical Association, Oct. 27, 1999, 282(16): 1561–1567.

[8] Cotterill RW, Franklin AW. The Urban Grocery Store Gap. Food Market Policy Center, University of Connecticut, Storrs, CT, April 1995.

percent and smaller stores are also unlikely to offer the variety of products carried by most major supermarkets.[9] A recent University of North Carolina study has demonstrated the link between supermarket access and healthy diets, finding that residents in neighborhoods with higher concentration of supermarkets ate higher amounts of fruits and vegetables.[10]

There are models around the country for innovative approaches to increasing access to fresh produce, low-fat dairy and protein items. These include joint community partnerships to site supermarkets in low-income neighborhoods, establishment of farmers' markets, and training and equipment provided to small retailers to successfully carry produce. At the same, some community-based programs have sought to improve transportation to bring consumers to existing stores by coordinating transit services or providing van service or deliveries.

(4) Making Government and Health Care Workplaces Models for Supportive Environments

Most adults spend a large portion of the day at work. The organizational practices of their work place can make a difference in their ability to achieve healthy behaviors. California adults reported difficulty accessing fruits and vegetables at work as a key barrier to increasing consumption.[11]

It is a concern when a local hospital served donuts as the only breakfast food at a meeting on health disparities, or when fast food outlets are located in the lobby. A far better example is set by the Health and Human Services offices in Rockville, Maryland, where we were pleased to discover a farmstand with an attractive array of local fruits and vegetables set out for tasting.

Health care and government institutions have a special responsibility to model wellness-encouraging organizational practices. These offices can serve as a model ensuring availability of healthy and appealing food options in cafeterias, vending machines and whenever refreshments are served. Inspectors ensure the safety and accessibility of elevators while failing to ensure safe, hospitable stairways, which CDC has aptly described as "expensive pieces of exercise equipment." Activity levels can be enhanced through support for well-lit and safe stairwells, bike racks, lockers and showers, and incentives for walking or biking to work.

Government and health care staff should serve as spokes people for healthy food and activity practices at work and be able to proudly describe how their own workplaces reflect such practices.

(5) Restricting Marketing to Children

Children in the United States are estimated to view as many as 40,000 commercial messages each year on television.[12] More than 50 percent of these ads are estimated to be for food, predominantly promoting soda, fast foods, high-sugar cereals and high-calorie snacks. This advertising seeks to develop their brand loyalty to last a lifetime and even utilizes children's entertainment characters to promote food and beverage products. Even schools have become centers for commercial messages as soft drink companies have targeted schools for exclusive marketing contracts that prominently feature their products and sometimes lead school administrators to promote sales in order to increase revenue for the schools.[13]

The serious health consequences that are resulting from over consumption require that we look once again at the appropriateness of marketing to children. Children below the age of eight are incapable of even distinguishing commercial from noncommercial messages.[14] At a minimum, promotion of unhealthy food and beverages should be eliminated from schools which are public institutions. Further, we need to carefully consider the examples of other countries. Sweden and Norway prohibit advertising targeted to children under 12 and Australia does not allow ads during preschool programming.

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[9] Weinberg Z. No Place to Shop: Food Access Lacking in the Inner City. Race, Poverty, and the Environment. Winter 2000.

[10] Morland K, W. S., Diez Roux, A (2002). "The Contextual Effect of the Local Food Environment on Residents' Diets: The Atherosclerosis Risk in Communities Study." American Journal of Public Health 92(11): 1761–1767.

[11] Oppen M, et al. (1999). Fruit and Vegetable Consumption in California Adults; Ten-Year Highlights from the California Dietary Practices Survey 1989–1999, Public Health Institute, California Department of Health Services.

[12] Strasburger VC. "Children and TV advertising: nowhere to run, nowhere to hide." Journal of Developmental and Behavioral Pediatrics. Jun 2001;22(3):185–187.

[13] Nestle, M. Soft Drink Pouring Rights. Public Health Reports. July/August 2000, Vol. 115, 308–319.

[14] "Children, adolescents, and advertising. Committee on Communications, American Academy of Pediatrics." Pediatrics. Feb 1995;95(2):295–297.

In conclusion, I would like to say that it is very exciting to see an increase in funding to CDC devoted to nutrition and physical activity initiatives. Given the important contribution of environmental and policy changes, I would strongly recommend that a high proportion of these funds be devoted to nurturing the burgeoning movement for these changes at the state, local and federal levels. Through the synergy of individual-behavior change efforts and environmental changes, we will be able to effectively shift community norms and reduce the burden of preventable disease, disability, and premature death.

Senator SPECTER. Thank you very much, Ms. Mikkelsen. So, Danielle, who called you a fat girl?

Ms. BOYD-BAILEY. She said she did not understand what you said.

Senator SPECTER. How long ago did that happen?

Ms. BOYD-BAILEY. He said, "Who called you a fat girl."

Dr. NEUFELD. And how long ago.

Ms. BAILEY. Legend.

Ms. BOYD-BAILEY. Legend, a little boy at school. The kids at school would tease her.

Dr. NEUFELD. How long ago? When?

Senator SPECTER. How long ago? You look like a thin girl to me. When did they call you "fat girl"?

Dr. NEUFELD. Before or after KidShape?

Ms. BAILEY. Before.

Senator SPECTER. Danielle, at that rate, you are not going to use up your 5 minutes. So, Danielle, did the incident where they called you "fat girl," did that make you want to change your diet?

Ms. BAILEY. Yes.

Senator SPECTER. And when somebody mentions McDonald's, what do you say about going there?

Ms. BAILEY. I say that is not healthy.

Senator SPECTER. It is not healthy, yes. And how did you figure that out? What led you to decide that going to McDonald's was not healthy?

Ms. BAILEY. KidShape.

Senator SPECTER. Mr. Lefer, when you say you started feeling better 1 or 2 weeks later, amplify that just a bit.

Mr. LEFER. Well, the angina started getting better. I could walk farther. You feel it immediately.

Senator SPECTER. And what changes had you made in your diet in that week or 2?

Mr. LEFER. Well, I became a vegetarian. I started doing the yoga. We used to meet twice a week——

Senator SPECTER. Doing yoga can be fairly rigorous.

Mr. LEFER. Well, not the kind we do. We do a Hatha Yoga, which is a gentle yoga. It is more for older people.

Senator SPECTER. Did you ask for Dr. Ornish to do what some of the rest of us do, the less vigorous yoga?

Mr. LEFER. I did whatever he told me.

Senator SPECTER. And you say that opening your heart was a key factor, letting bad things out. That may be too personal to amplify, but if you care to comment further, we would be interested to know.

Mr. LEFER. Yeah, well, we used to meet twice a week, and at the end of the meeting—first we would exercise, then we would eat, and then we would have group support. And we would sit around

in a circle. And people would talk about what was going on in their lives and their feelings, and I just was the kind of person that would just hope nobody would ask me anything, and I was nervous that I would have to talk about what was going on in my life, and I learned how to just express and have empathy for other people's problems and, by doing that, learning how to handle my own feelings.

Senator SPECTER. And you have had reversal of your heart condition?

Mr. LEFER. Yeah. The program was for 1 year originally, but then the government gave Dean some money and it was increased to 4 years. And every year we would go down to Houston and have a Pet Scan, and the first year I went down there—the Pet Scan is the colors in the heart muscle are red and white when you get good circulation, and the first year, mine was all dark and green, and there was very little. And each year I went down there, my heart started to come back. It started to rejuvenate itself. I was not a candidate for bypass because I had so much damage that there was nothing to bypass, really. So I had to work with what I had left. And each year, the Pet Scan would show more blood flow to the muscles.

Senator SPECTER. And these were your arteries would show——

Mr. LEFER. No, no, this is my heart muscle.

Dr. DREWNOWSKI. But your arteries also show the reversal.

Mr. LEFER. Yeah, my arteries showed reversal also.

Senator SPECTER. Did you have significant weight loss?

Mr. LEFER. During the 4 years of the program, I lost about 25 pounds, yes. I am a pretty ferocious eater, though, even today.

Senator SPECTER. Even with vegetables?

Mr. LEFER. Yeah.

Senator SPECTER. On a personal level, what vegetables motivate you? I would like to find some.

Mr. LEFER. Well, I keep my weight up by eating carbohydrates, mostly. I eat too much pasta. But I still eat out quite a bit. I go to Chinese restaurants and I get steamed vegetables with tofu, with soy sauce. What I do is I cultivate places to make the food tasty. Luckily, I live in this area and there are a lot of restaurants that have Dean Ornish- or Dr. McDougall-type food on the menu. And it is pretty good.

Dr. DREWNOWSKI. Tell them what you used to serve in your restaurants.

Mr. LEFER. Oh, my restaurants—I killed thousands of people.

Senator SPECTER. You have not changed your own restaurant to incorporate all the valuable lessons you have learned——

Mr. LEFER. Oh, no, no, I sold my restaurants right after I had my heart attack. I got out of the business. Actually, I cannot stay away from it. Right now, I am working with a company that develops products for the food industry, and I am trying to develop a fat-free chocolate to cover different products. And they think they are going to be able to do it.

Senator SPECTER. A fat-free chocolate?

Mr. LEFER. Yeah, that cover products.

Senator SPECTER. Which will not have all these adverse health effects?

Mr. LEFER. Well, I am hoping to do that, yeah. And I am hoping to use, instead of sugar, sugar substitutes.

Senator SPECTER. Well, you may be interested to know that you can come to the Senate Dining Room because Dr. Ornish has entries on the menu. He does not get credit for them because that is the government way.

But we have taken some of his dishes and put them on the Senate menu, so if you are in the neighborhood and can get by the barricades, come on in.

Mr. LEFER. All right.

Senator SPECTER. Dr. Ornish, you mentioned prostate cancer on a reversal. Could you amplify how that works?

Dr. ORNISH. Sure. And I think, as you know, you can get a lot of good done in the world if you do not care who gets the credit. I think we are at a place with prostate, breast, and colon cancer very much like we were 25 years ago with heart disease. And that is, if you look at the animal data, the epidemiological data from other countries, the anecdotal case reports in humans, there is every reason to think that diet and lifestyle might affect these diseases, but nobody had really done a randomized trial until, beginning 5 years ago, in collaboration with Dr. Peter Carroll here at UCSF, who is the Chair of Urology, and the late Dr. William Fair, who at the time was the Chair of Urology at Memorial Sloan-Kettering Cancer Center in New York, we designed a study that took advantage of the fact that a certain number of men who know they have prostate cancer do not get treated for it for reasons having to do with, if you are older, you are more likely to die with prostate cancer, rather than from it. But we did not get involved in those decisions.

But from a scientific standpoint on that, we could have a group of men who all knew from biopsies that they had prostate cancer, but none of them had been treated, so we then randomly divided them into two groups, asked one to make big changes in diet and lifestyle, and the other did not, and so we could have a non-intervention control group which you could not do with breast cancer, for example, because most women get treated immediately.

Senator SPECTER. You could not do it with breast cancer. Why?

Dr. ORNISH. Because most women get treated. They get chemotherapy or surgery or other things, and so then you would not know whether the changes were due to the conventional treatment, or whether they were due to diet and lifestyle alone; whereas, in these men, none of them had conventional treatment when they started. So, after 1 year, what we found is that the control group—7 of those 84 men ultimately ended up getting conventional treatment, surgery, radiation, brachiotherapy, during the first year. But none of the people in the lifestyle change group had conventional treatment. And we found that the Prostate-Specific Antigen, or PSA, improved or went down on average in the group that made these changes, but went up in the group that did not, or they got worse.

We found a dose response correlation—the more people change, the lower their PSA went, just like we found in a study that Mel Lefer and others were in, that the more people change their diet

and lifestyle, the less clogged their arteries became using quantitative arteriography.

But in order to get the patients to get better, as in both studies, they had to make really big changes. The old saying about an ounce of prevention and a pound of cure I think is really true. To reverse disease, you have to make really big changes. To prevent it, you do not have to be so strict. And if you start at a young age, as you are doing, then you do not have to make such big changes.

So I think our findings are really giving many people new hope and new choices that they did not have before. And if it is true for prostate cancer, it will almost certainly be true for breast cancer as well, and likely colon cancer, and diabetes, and hypertension, and obesity. And a wide range of degenerative diseases are really directly linked to the diet and lifestyle choices that we make every day—for better and for worse.

Senator SPECTER. Has an effort been made to do for breast cancer what you have done for prostate cancer?

Dr. ORNISH. We would love to do a study on breast cancer as our next study if funding were available. We would be thrilled to do that. And I think one of the things that is kind of our unique little niche is that we have really learned what motivates people to make changes to this degree in the real world, and it looks like it takes that degree of change in order to show reversal.

Senator SPECTER. To the extent that you can comment, how are your consultations with McDonald's going?

Dr. ORNISH. Well, about 3 years ago, I was at a——

Senator SPECTER. Are they aware of Danielle's sentiments, by the way?

Dr. ORNISH. I think they will be soon. I will make them aware of it. I remember about 3 years ago, I was at this conference in Davos at the World Economic Forum, and I was at a breakfast and I was seated next to a guy. And I said, "Hi, I am Dean Ornish." He said, "I am Jack Greenberg." I said, "What do you do?" He said, "I am the CEO of McDonald's Worldwide." I said, "Oh."

I thought how interesting to be sitting next to the CEO of McDonald's. So I began consulting with him and encouraging him to make healthier foods. And it is interesting. There was kind of a division in the company. The company started to not do so well and there was the old guard that said: "We ought to just make cheaper burgers and that's it," and then the more visionary people there who said: "We really need to make healthier food." And the old guard won temporarily. Their stock went down by 50 percent. They have since replaced their CEO, and now they are much more open.

Senator SPECTER. As soon as you started consulting with him, he was replaced?

Dr. ORNISH. See, that is why you have a control group in science because association does not necessarily imply causation. But I have also been consulting with PepsiCo in the last year or so, and their CEO, Steve Reinemund, actually has taken a very different approach. They have committed that half of their new products in the coming year will be healthier products. And I think they are doing it for two reasons——

Senator SPECTER. How can they do that?

Dr. ORNISH. Well, that is the thing about these big companies—if the CEO wants something to happen, they do it.

Senator SPECTER. But what do you do for the taste of Pepsi? How do you make it different?

Dr. ORNISH. Oh, well, Pepsi owns Tropicana, they own Quaker Oats, they own Gatorade, they own other companies that, under those umbrellas, they can make healthier foods. We have already worked with McDonald's——

Senator SPECTER. Could they make Pepsi-Cola healthier?

Dr. ORNISH. Well, not necessarily, but the idea is, first of all, we have already gotten them to take their trans-fatty acids out of the potato chips and things like that, so they can make them healthier, if not healthy.

But the idea is that they realize two things—one is that because of the threat of litigation you talked about, as well as the fact that they see that as the baby boomers are getting older, there is a real market for healthier foods, that they cannot stop making the foods—the so-called "junk foods"—because that is a big part of their core business. But if they also make a lot of healthy foods, then they can say, "We are making an entire spectrum of choices," and also educate people how they can find their place on this spectrum because, you know, for some people, if they have indulgent foods once in a while it is not going to hurt them. For people who have heart disease, they should probably never eat those foods.

So, by having the spectrum of choices, it both protects them against litigation, as well as opening up new markets. And one of the reasons I like working with them is, as you alluded to, they know how to—I mean, in terms of behavioral modification, they are the experts. You know, they know how to influence people to eat certain ways. Unfortunately, traditionally, it has been in ways that are not very good for them. And if we can work with them to not only make healthy foods, but to make them fun, and sexy, and hip, and interesting, and all the kind of peer issues that particularly affect younger kids in what they eat, then potentially, they can find that they can make a good business out of it, as well as making foods that are going to be healthier for Americans.

Senator SPECTER. You had an interesting dichotomy—fear of dying, joy of living. How do you activate those feelings, not too relevant perhaps to say which would be more significant or more motivational, but how do you work on, say, the joy of living as a motivating factor?

Dr. ORNISH. Well, that is a very good question. I think Mel Lefer is a perfect example. When he started our program, he literally could not walk across the street without getting severe chest pain. He could not take a shower, as he indicated. He could not have sex without getting pain. And one of the things I have learned is that when people make really big changes in their diet and lifestyle, sometimes the reasons for making these changes—because there is no point in giving up something that you like unless you get something back that is better—and not 30 years later for the heart attack that does not come, but 1 week or 2, or 1 month later.

I think one of the most effective anti-smoking campaigns here in California at the Department of Health Services was not, "Smoking causes emphysema, lung cancer, heart disease" because people do

not want to think about those things. They are too terrified. But they had a picture of a guy, an actor dressed like a Marlboro Man with a limp cigarette hanging out of his mouth saying, "Smoking causes impotence." And that got people's attention because, again, when I——

Senator SPECTER. Smoking causes what?

Dr. ORNISH. Impotence. Sexual dysfunction. And you know, ironically, cigarettes are always marketed as being so sexy, just like eating high-fat foods are, but it turns out that most impotence—first of all, it is extremely common, which is why Viagra is one of the best-selling drugs of all time. And it is something that most guys do not talk about, except, I guess, one of your former Senator colleagues does on some occasions—and the point is——

Senator SPECTER. He talks about Pepsi more.

Dr. ORNISH. And when I was in medical school, we were taught that impotence was mostly in your head. We now know it is mostly in your arteries. The same mechanisms that affect blood flow to your heart also affect blood flow to sexual organs. And so when people quit smoking, when they change their diet, when they manage stress better, their blood flow to their brain improves. They get more blood, they get more oxygen, they think more clearly. Their heart disease improves. Their sexual function improves. They do not have these aches and pains oftentimes. And so those kind of immediate benefits, I find, are much more motivating than simply talking about risk-factor reduction because most people do not really think anything bad is ever going to happen to them.

Senator SPECTER. Dr. Stern, the charts you have provided are very impressive on how little attention is directed to obesity. And it is only a comparative matter, but NIH obesity has gone up from $127.6 million in 1998 to $324.3 million in 2003. Now, you are correct that, notwithstanding a very substantial percentage increase, it is still relatively modest. But how would you go about trying to persuade NIH to make an institute? And where do you end up with all of the other factors—an alcoholism institute, a tobacco institute? How do we establish those priorities for NIH?

Dr. STERN. Well, my concern, Senator, is that we are in the midst of this huge obesity epidemic. It is affecting children, it is affecting adults. The healthcare costs are out of control. And if you look at the number of people affected, certainly with adults, it is over 60 percent of our population is overweight or obese. And using NIH's criteria to establish priorities, this would be a no-brainer. So the reason why we are proposing an obesity institute is to try and increase the visibility of obesity at NIH because it is not visible at all. How would I go about it—if I were made king or queen for the day? Or if it was the real world?

Senator SPECTER. How about chairman of the Appropriations subcommittee?

Dr. STERN. Same thing.

Well, first of all, I want the Government, HHS, to come up with a plan for how to deal with obesity in terms of research. This is something you requested in 1999. And they have not done that. So it is really hit or miss. And I would hold hearings in this area to see why so little money has been—and so few grants are being spent on obesity.

I will give you an example with CDC. CDC has done a wonderful job with the amount of money that they have, but my first three figures, looking at the incidence of obesity, that comes from the National Health and Nutrition Examination Survey that CDC manages. Just a few years ago, it was in danger of really being de-emphasized because of lack of funds. And Sally Squires' article in The Washington Post within a week resulted in more money being appropriated for this.

So, first of all, we have to track what is happening to this epidemic and that is critical with the CDC. But we also have to do programs to see what works. And Dean, you are really to be congratulated. You really have done research, you have published your research, and that is really laudable. You have not gotten a lot of money in terms of grants. If you take Dean's counterpart, Dr. Atkins, there has been very little research done in that area and we do not know—we know people lose weight on it, we do not know about is it safe, does it cause people to maybe increase heart attack risks? And does it help people maintain weight? The research simply has not been done. And I think it is going to have to be NIH, USDA, CDC that actually does the research.

Then, finally, if you would ask me what prevents obesity, what do we know from the research that is out there? I would say we do not know because there has not been significant research on prevention of obesity. We think the taking of vending machines out might help, we think that de-emphasizing portion size might help, but we simply do not know. We are going ahead in the absence of research to make these changes, and if they do not work, I think people are going to be very angry.

Senator SPECTER. Dr. Stern, you have mentioned in your testimony something about the isotopes. I did not quite follow that. Could you amplify that?

Dr. STERN. Oh, sure. One of the ways you can find out what people are eating—energy balance, what they need to keep them going—is to give them a stable isotope, meaning it is not radioactive, and it is called "doubly-labeled water."

Senator SPECTER. Doubly-labeled water?

Dr. STERN. Doubly-labeled water, right. The hydrogen and the oxygen have different isotopes and it is not radioactive, and you look at what happens—how you excrete it, how it is utilized over 10 days. And it is a very valuable tool.

Well, literally, research in this area, if you do not already have a lot of doubly-labeled water in your research organization, you cannot do this research. You cannot do the appropriate research if we are looking at food intake and exercise because there is not enough doubly-labeled water. There have been some steps taken that will increase the supply of this in the next 2 or 3 years, but my comment here was, if somebody were minding the shop and anticipated this, I do not think we would be in this fix we are right now.

Senator SPECTER. Well, how do we get out of it?

Dr. STERN. Well, we need big columns to create the isotopes. I mean, it is a technology problem. Right now, it is a technology problem. We get some of our isotopes from Russia because they still produce some things, but the supply is very low.

Senator SPECTER. Well, I will pursue NIH on our recommendation. Do you think the subcommittee ought to tell them what to do, ought to mandate it?

Dr. STERN. Well, the problem, Senator, is——

Senator SPECTER. That is, the subcommittee recommend to the full Congress that it be mandated.

Dr. STERN. The problem is that it has not been done and the problem has gotten worse. You made suggestions in 1999. We are now 4 years later and how many millions of people have gotten Type 2 diabetes and gotten obese in that interim. I think that this crisis really is severe enough that I would like to see it mandated, but I am an activist and I would bow to whatever you decide.

Senator SPECTER. Well, we approach it with recommendations so that we do not give in to the politicization of having the Congress make scientific judgments. We make political judgments. But I am going to pursue that.

Dr. STERN. Well, let me just turn the question around slightly. Let us say we had something like heart disease which does kill a lot of us, or will kill a lot of us, and NIH was not doing the appropriate research on heart disease because it was not fashionable, because let us say people with heart disease were viewed as less valuable or as weak-willed, would your subcommittee at some point take action? And that is rhetorical.

Senator SPECTER. Senator Stevens, as chairman of the full committee some time ago, put in an extra $150 million for prostate cancer when he had prostate cancer, but it got thrown out.

Dr. STERN. But you asked for a billion at NIH? Or you were looking at the increase in NIH budget and it got thrown out the first year, the second year? So I——

Senator SPECTER. Well, it is true that if the chairman puts a mark, then people are afraid to take it out, but that is to NIH generally, without our telling NIH where to spend the money. You might quarrel that it is a waste of money—or it is not as high a priority item as more for the Department of Defense. Somebody might argue that.

I am just kidding.

Dr. Neufeld, you had mentioned Medi-Cal and Medicaid on your program for KidShape. Could you tell us a little more about that?

Dr. NEUFELD. Yes. In 1997, we went to meet with the Medi-Cal Nutrition Subcommittee and they provide funding through a program called EPSDT. It is the Early Periodic Screening Diagnosis and Treatment Program. It comes from the Omnibus Reconciliation Act of 1989, and it is for prevention of disability. And as a result of that, it is limited to children up to the age of 21, and it is to provide a variety of programs——

Senator SPECTER. For people up to 21?

Dr. NEUFELD. Up to 21.

Senator SPECTER. On disability?

Dr. NEUFELD. No, no, it is for all children on Medicaid, and it is money from the ORB, the 1989——

Senator SPECTER. And this was Medicaid, California? Did that come out of Washington?

Dr. NEUFELD. It came from Washington and I think each State can make a decision as to how to use it. In California, they have

used it for nutrition services, as well, and essentially, it is to identify disabilities which can be detected on a physical examination.

Senator SPECTER. Does it require a disability finding?

Dr. NEUFELD. No, no. It is to prevent disability. It is EPSD——

Senator SPECTER. Prevent disability.

Dr. NEUFELD. Right. Early Periodic Screening Diagnosis and Treatment designed to improve primary health benefits for children with an emphasis on preventive care.

Senator SPECTER. Dr. Stern, why would that not be applicable to obesity?

Dr. STERN. Well, obviously you have used it in that area and——

Dr. NEUFELD. It is available—we were lucky.

Dr. STERN. Right. It is getting the priority highlighted.

Dr. NEUFELD. So we were able to identify those funds—or the State was able to identify them and provide them to us. Now the problem is that this was done in 1997 and, from 1998 or so, we were able to do our program, as I said, and develop up to 20 sites. But over the last year, because Medi-Cal in California has taken a hit, we have been able to only obtain by reimbursement 20 percent of the charges that we bill for. So, in fact, we are Medi-Cal eligible, we can bill for our program, and had we received all the funding that we legitimately bill them for, we would be fine. But we in fact are living on charity and private donation.

Senator SPECTER. And Dr. Neufeld, you are also working with Highmark of Pennsylvania?

Dr. NEUFELD. Yes, we are. And Christiane Rivard can explain that, our program director.

Senator SPECTER. Sure. You are going to have to come forward and identify yourself for the record, and get a chair.

Ms. RIVARD. My name is Christiane Wert Rivard. I am the program director for KidShape. And Highmark contacted us because they were interested in—they were not interested in re-creating the wheel, they wanted to bring a program that was proven effective for their population. And what we developed was a licensing program so that they could operate the program. They pilot-tested it in both Erie and Pittsburgh, and Allegheny General Hospital was one of their community partners, as well as the public schools. With the two pilot programs, they were very effective. And so, for the year 2003, now they are licensing the program for ten sites throughout Western Pennsylvania because it has gone over so well and it has been so effective for the families that they served and that they provided the program for.

Senator SPECTER. Well, we are glad to see you in Pennsylvania. Thank you.

Dr. Drewnowski, you raised an interesting point, and Dr. Gerberding, I would appreciate your comment on this, about using the centers, as you articulate, to address the public health standpoint, and to try to integrate those with CDC. How would you suggest doing that?

Dr. DREWNOWSKI. The CDC has a network of 28 prevention research centers affiliated with major schools of public health around the country. And some of those centers are devoted to issues of physical activity, and others are interested in issues of body weight. There are others, still, dealing with other health prevention

and other problems. My suggestion is, we have new centers specifically devoted to obesity and specifically devoted to policy, economic, and community aspects of obesity that would not duplicate NIH work because the NIH does the network of Obesity and Nutrition Research Centers, but would add to the strategies and plans of the CDC and expand CDC resources in this area, and policy focus would be very important and also working with State and local government and the communities.

Senator SPECTER. Dr. Gerberding, do you have the flexibility to entertain such an idea?

Dr. GERBERDING. We certainly do. I think this is a great example of trying to bridge that gap between the basic science and the community application, and the schools of public health that house these centers are fine academic institutions. They have creative investigators. We can either enhance or add this activity to existing centers or create new centers with this particular focus. So I think this is something that we need to sit down and figure out how to make that happen.

Dr. DREWNOWSKI. That would be great.

Senator SPECTER. Dr. Drewnowski, you raised a very fundamental point about these foods appealing to people in the lower economic groups and with the least resources and education, as you say it. I am groping with a way to deal with it. What do you do? If Dr. Ornish cannot persuade Pepsi-Cola, what do you do?

Dr. DREWNOWSKI. Well, the problem is that the determinants of food choice—there are three of them—taste, cost, convenience, and unfortunately to a lesser extent, health and variety. So taste drives people toward sugar and fat and high, energy-dense foods. Cost, the low cost of sugar and fat drives them towards high-sugar, high-fat foods. And convenience, let us face it, the packaged foods are convenient. They contain fat, sugar and salt. So those three, like a triple-whammy—fat, sugar and salt. But cost is very, very important and those foods are low in cost.

So we need to know about the economic cost of various diets and, at this point, we do not even have a national food price database. There is not one that exists. So we have no idea what people spend on food. There is some government databases that tell us what people spend, but not what they eat, and other databases that tell us what they eat, but not what they spend. So you cannot really cross the two and price the quality of diets. And I suspect the diets high in sugar and fat are associated with obesity and, of course, diets high in vegetables, fruit, and so on, are not, but those diets may be more costly.

Dr. ORNISH. Could I just add——

Senator SPECTER. Before you take it, Dr. Ornish, I would like to follow up with Dr. Drewnowski. Are you suggesting that there could be a specific research program which would answer the issues you just raised?

Dr. DREWNOWSKI. Absolutely. And CDC, as a matter of fact, did have a September conference on the pricing of vegetables and fruits, and they are really thinking about this, and there are ways of addressing that. I would suggest a program of research to begin with, and then establish a base for fiscal food policies, and then start looking at food assistance programs, subsidies for vegetables

and fruit, farmers markets, and other approaches at the community level. But the CDC did have a price conference back in September.

Senator SPECTER. Well, Dr. Drewnowski, would you specify those views in a letter to Dr. Gerberding and send me a copy?

Dr. DREWNOWSKI. It would be a pleasure.

Senator SPECTER. Okay. Dr. Ornish, you had a comment?

Dr. ORNISH. Yes, just two things. I agree with Dr. Drewnowski that lower socioeconomic groups tend to eat foods that are higher in fat, but I want to make two points, one is that the kind of diet that we have been studying for 25 years is essentially a Third World diet. It is not an inherently expensive diet, it is the way that people eat who cannot afford healthier food. But the system has become somewhat distorted in this country, (a) because so many people in lower socioeconomic groups get so much of their food from fast food places because they do not have even access to local groceries and farmers markets, and (b) because the governmental subsidies tend to subsidize and make those high-fat foods and meats and dairy and eggs less expensive than the fruits and vegetables that—in a free market, actually you would find the opposite.

Senator SPECTER. Ms. Mikkelsen, you had commented about the ads, "Good way to start the morning." Do you think the Federal Government ought to intervene on those ads?

Ms. MIKKELSEN. Well, I think it would be something to think about. I think the time has come—I know this was an issue that was considered in the late 1970s about limiting advertising to kids. In other countries—for example, Sweden and Norway, do not allow television advertising directed to children under 12, and I believe it is Australia that does not allow any kind of ads during pre-school programming. I think we do have to think about whether the seriousness of this health crisis requires—as we did in taking tobacco ads off of TV, limiting ads that we know are promoting unhealthy products.

Senator SPECTER. Do you think that is something the FDA should get involved in?

Ms. MIKKELSEN. I think it would be very great if it did. I would love to see that happen. And I think there are many people—I know that the California State Senate is looking at holding a hearing on marketing to kids. I think there are a lot of people around the country that are starting to question this that have a real concern about the public health issue.

Senator SPECTER. One thing that you testified to somewhat concerned me, about that Polish hot dog.

Ms. MIKKELSEN. Yes. Right. It concerned me too.

Senator SPECTER. How did it taste?

Ms. MIKKELSEN. I did not eat it.

Senator SPECTER. You did not eat it?

Ms. MIKKELSEN. No. I did not do it, but I——

Senator SPECTER. They have a great event called Cannstatter in Philadelphia once a year, the day after Labor Day. Dr. Ornish will not like this, but I eat one of them once a year.

Dr. ORNISH. Once a year is okay.

Ms. MIKKELSEN. He said once in a while. And I do like Polish hot dogs, but not in this context. I am sorry, but just because I

think this food access issue is so important and it has been a very important part of my work—I think these models of looking at opportunities to bring fresh food into neighborhoods at a reasonable price are really important. And I think it takes a dual approach. I think we need to look at Federal policy in terms of agriculture and programs like the Farmer's Market Nutrition Program that provide people with resources to buy food.

But there are some really great things happening. For example, in Oakland, there has been a pilot project that now has been spread to three small stores that were essentially convenience, liquor-type stores, where a person who was an expert in produce-handling went in and helped these people get some start-up funds to get the equipment they needed, and then train them to buy produce. And they are now turning over $600 a week of produce a week in low-income neighborhoods. I think this is a model that can be replicated. I think we need to think about can we do the same with small restaurants. You know, there are a lot of mom-and-pop restaurants in these neighborhoods. Can we help them become as appealing as the fast food outlet? And it is supporting the local economy and bringing in better products.

Senator SPECTER. Mr. Perelson, in your capacity as National Marketing Director of Lifestyle Advantage, do you think this hearing is going to help you a bit?

Mr. PERELSON. I do indeed. We have had a very interesting history, Dr. Ornish's research going back 20, 25 years. And looking at the last 20, 25 years, and certainly over the course of the last couple of years, the momentum certainly seems to be moving in the direction of establishing support for people who want to make healthier lifestyle changes. And I think hearings such as this will enable us to move faster in that direction. We have had a very unique opportunity over the course of the last year. We have recently trained 10 hospitals in West Virginia to deliver our program. And we are doing it in partnership with Mountain State Blue Cross Blue Shield in West Virginia and the Public Employees Insurance Agency in West Virginia. And the opportunity is outstanding for us in the sense that West Virginia is number one in the country in terms of incidence of heart disease. And some things, you do not want to be number one at, and heart disease certainly is that.

We sort of—listening to all these comments—the future for us, as a Nation I think we spend so much time and attention on the cost of the Nation in terms of the down side of these diseases, that for us to focus on keeping people away from these diseases, providing them with quality-of-life choices, where even in neighborhoods and communities such as we are hearing, to provide opportunities for people to make appropriate choices.

What is a very important part of our program is that it provides a supporting structure for people to make these choices, that—for most of us, it is very difficult to make changes. And we work with something called a "Readiness for Change" model. In that model, about 5 percent of all of us can make a choice today and change our lifestyle. They can buy Dr. Ornish's book, or they can go on the Internet and make those changes. There are about 5 percent of people who will never ever, ever, ever make changes, and the rest of us are in two 40 percent groups—one heading towards change

and one heading away from change. Those people who are in the group moving away from change, unless they hit some life event, a sibling comes down with a disease, heart disease, or they test positive on the stress test, may make the decision to move towards change. And then there are the 40 percent who are moving towards change, those people who have adopted an exercise program or a new diet program and gone off of it. And what we know about that group is that it is very difficult to make changes by yourself, and so what we have provided in terms of Dr. Ornish's program, is a very robust support system to help people do that.

I think that is what we are all talking about today, is providing that support for people who want to make changes, in our program—registered dieticians and exercise physiologists, stress management instructors, psychologists, and a medical director work to help people move through these lifestyle changes.

Senator SPECTER. Well, thank you all very much. Let me extend an invitation to you to let the subcommittee know if you have more suggestions. We are very interested in your specific suggestions that we can utilize in hearings or in our legislation. We have bill language which is limited, but report language is extensive, and I am going to pursue a number of subjects, what Dr. Stern has commented about as to our 1999 recommendations. And I think we will schedule a hearing after a little more thought on ways to motivate people to make diet choices and to call in the experts—McDonald's, Pepsi, and the other fast food chains, and find out what they have done, and make an inquiry to the extent of trying to find out if they make choices which are contrary to social policy—try to get people to eat the wrong things, as Ms. Mikkelsen has said.

I have tried to observe the time limitation by holding this hearing to two hours, and we are going to yield back about three minutes on the two hours. And the final question which I would like you all to submit in writing is, where should I go to lunch today?

PREPARED STATEMENT

We have received the prepared statement of Senator Barbara Boxer that will be made part of the record at this point.

[The statement follows:]

PREPARED STATEMENT OF SENATOR BARBARA BOXER

I want to welcome Senator Specter to California. Today, he will be examining a serious health problem in our country—obesity.

Obesity is a complex chronic disease caused by many factors. It is the second leading cause of preventable death in the United States.

Approximately 127 million adults in the United States are overweight, 60 million obese, and 9 million severely obese. For children, 30.3 percent are overweight and 15.5 percent are obese. Alarmingly, these numbers are rapidly increasing every year.

I know that the results of this hearing will give all of us in Congress important information as we work to improve the quality of life for all Americans.

Again, I welcome Senator Specter to the great state of California and thank him for taking time to examine this issue.

CONCLUSION OF HEARING

Senator SPECTER. Thank you all very much for being here. That concludes our hearing.

[Whereupon, at 12:27 p.m., Monday, February 17, the hearing was concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

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