

Moving into Action: Promoting Heart-Healthy and Stroke-Free Communities

Governors



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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

What Is *Moving into Action*?

Moving into Action is a series of action lists designed to help governors, state legislators, local officials, employers, and health care leaders promote heart-healthy and stroke-free communities. Each list suggests actions that range from ways to encourage general interest and awareness of these health issues to specific policies that promote healthy behaviors and reduce risks associated with heart disease and stroke. Included are examples gathered from states and communities that are working to reduce these risks and a summary of the science underlying heart disease and stroke prevention.

Suggested actions are based on current national guidelines, scientific evidence, and existing efforts from states throughout the country. For example, some actions are supported by years of research from leading public health, public policy, and medical organizations, while others stem from efforts by communities and organizations to address unhealthy behaviors related to heart disease and stroke.

Moving into Action can help policy makers, employers, and health care leaders assess what actions are most appropriate for their communities and can lend support to the efforts of individuals to prevent, manage, and control their risks for heart disease and stroke.

Share Your Experiences

In suggesting these actions, we also invite you to share your ideas and experiences. Please e-mail your questions, suggestions, and experiences on how you are *Moving into Action* in your community at ccdinfo@cdc.gov.

Additional Copies

Additional copies of these lists can be requested at ccdinfo@cdc.gov. They will also be made available on the Cardiovascular Health Web site at www.cdc.gov/cvh.

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A Message from the Centers for Disease Control and Prevention

Heart disease and stroke, the principal components of cardiovascular disease, are the nation's first and third leading causes of death. They are also major causes of morbidity and health disparities. Millions of Americans are at risk for these largely preventable conditions. Advances in science have been considerable, but the challenge of translating this knowledge into action remains.

To address this need, the Centers for Disease Control and Prevention, in collaboration with the American Heart Association/American Stroke Association and the Association of State and Territorial Health Officials, along with a host of other partners, developed *A Public Health Action Plan to Prevent Heart Disease and Stroke*. The *Action Plan*, released in 2003, calls for engagement by all sectors of society to support the prevention and control of heart disease and stroke. *Moving into Action: Promoting Heart-Healthy and Stroke-Free Communities* suggests how certain sectors of society—policy makers, employers, and health care leaders—can take steps in this direction.

Can we imagine a world where our communities are designed to encourage safe physical activity? Where worksites and school cafeterias provide affordable, heart-healthy food options? Where the environment of public spaces is smoke-free? Where health care purchasers universally include preventive services, coverage for prescription drugs for heart disease, and counseling for therapeutic lifestyle changes? Where large and small health systems implement national guidelines recommended by federal agencies and national voluntary organizations? These scenarios are possible. The question is, how can we turn these scenarios into a reality?

Becoming engaged in the prevention of heart disease and stroke is a worthy cause for everyone, especially for those who can influence decisions that affect communities across the country. By sharing ideas, experiences, and expertise and by taking action now, we can effectively combat the persistent burden of heart disease and stroke and their related disparities in our society.

George A. Mensah, MD, FACP, FACC
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A Message from the American Heart Association/American Stroke Association

When *A Public Health Action Plan to Prevent Heart Disease and Stroke* was first released at the Steps for a HealthierUS Conference in April 2003, the American Heart Association's president, Dr. Robert Bonow, observed that "this plan will help the public health community make the nation's number-one health threat a number-one priority. We already have much science and knowledge to help prevent and treat heart disease and stroke. Now we have a national vision and roadmap for the public health community to help guide its efforts, and strategies to give Americans a healthier future."

As the nation's largest voluntary health organization fighting cardiovascular disease, the American Heart Association and our division, the American Stroke Association, recognized that the release of the *Action Plan* was only the first step in a journey that would require strong partnerships and the active involvement of a number of government agencies and other organizations. We are pleased to be working with the Centers for Disease Control and Prevention and the Association of State and Territorial Health Officials to help guide the projects and activities that continue to take place as a result of the release of the *Action Plan*.

One such project is *Moving into Action: Promoting Heart-Healthy and Stroke-Free Communities*. This document can help elected policy makers, public employers, and health care leaders across the country become more meaningfully engaged in heart disease and stroke prevention.

Once again, we applaud the Centers for Disease Control and Prevention for the release of this publication and for its continued commitment to *A Public Health Action Plan to Prevent Heart Disease and Stroke*. This is a significant step forward in furthering the vision of the *Action Plan* and the achievement of our shared goal of reducing heart disease and stroke and their risk factors.

Rose Marie Robertson
Chief Science Officer
American Heart Association/American Stroke Association

A Message from the Association of State and Territorial Health Officials

As one of the lead partners supporting *A Public Health Action Plan to Prevent Heart Disease and Stroke*, we are very pleased, along with the Centers for Disease Control and Prevention and the American Heart Association/American Stroke Association, to present *Moving into Action: Promoting Heart-Healthy and Stroke-Free Communities*.

Heart disease and stroke are the first and third leading causes of death in the United States and continue to pose a formidable challenge to the public health community. We cannot address this challenge alone. Only through collaboration with elected officials, employers, health care leaders, and others can we adequately address the continuing burden of heart disease and stroke.

ASTHO is the national nonprofit organization representing the state and territorial public health agencies. ASTHO's members, the chief health officials of these agencies, are dedicated to formulating sound public health policy and to assuring excellence in state-based public health practice. We hope this document can serve as an important resource for those interested in addressing heart disease and stroke in their states.

ASTHO is committed to this public health issue and we will continue to strive for policies that promote heart-healthy and stroke-free states and local communities.

George E. Hardy, Jr., MD, MPH
Executive Director
Association of State and Territorial Health Officials



Heart Disease and Stroke Need Your Attention

What do we know about heart disease and stroke?

Heart disease and stroke are deadly, disabling, and costly. They are the nation's first and third leading causes of death, killing nearly 930,000 Americans each year. Heart disease is a leading cause of premature, permanent disability in the U.S. workforce, and stroke alone has disabled more than 1 million currently surviving Americans. The cost of heart disease and stroke in the United States is projected to be \$394 billion in 2005, of which \$242 billion is for health care expenditures and \$152 billion for lost productivity from death and disability. The costs, the disability, and the deaths will only increase as the baby-boomer generation ages and its age-dependent risks for heart disease and stroke increase.

Heart disease and stroke are largely preventable. Years of research have indicated that controlling high blood pressure and high blood cholesterol reduces a person's risk of developing heart disease or having a heart attack or stroke. Stopping smoking, eating a heart-healthy diet, being physically active, maintaining a healthy weight, and controlling diabetes can also help decrease a person's risk for heart disease and stroke.

How can we translate knowledge into action?

Promoting heart-healthy and stroke-free communities involves efforts from all sectors of society. Health care systems, state and local governments, and workplaces have important and distinct roles to play in improving cardiovascular health. Health care organizations can implement systems to better monitor and manage cardiovascular conditions in accordance with national guidelines. Policy makers can establish coverage for preventive health services, no-smoking laws, and emergency response systems. Businesses can provide employees with screening and follow-up services for blood pressure and cholesterol control and offer opportunities for physical activity.

Why should a governor promote heart-healthy and stroke-free communities?

Governors hold an important and valuable position for protecting the health of the people in their state. This document provides a range of actions you can take to promote heart-healthy and stroke-free communities, which revolve around five central themes:

- Demonstrate leadership.
- Implement policies and incentives to make healthy choices the easy choices.
- Promote coverage for and use of preventive health services.
- Implement life-saving improvements in health services and medical response.
- Use your authority to strengthen state efforts to address heart disease and stroke.

The choice is yours. The time to act to address heart disease and stroke is now.

Actions for Governors

Demonstrate leadership

- Be a role model: display educational materials and establish worksite policies to support heart health in your office. Share your heart-healthy activities with the media (e.g., getting your blood pressure checked, using the stairs). If you or a family member has cardiovascular disease, share your story. ①
- Be an advocate for people in your state to adopt a heart-healthy lifestyle. Sign a resolution for your state to observe heart month and stroke month with related activities. ①
- Be a champion: create a task force or working group on heart disease and stroke. ①
- Publicly support a statewide quitline to provide all smokers with access to the support and latest information to help them quit. ③
- Host awareness campaigns about the
 - Signs and symptoms of heart attacks and stroke. ②
 - Urgency of calling 9-1-1 when these signs and symptoms first appear. ②
 - Prevention of risk factors, such as physical inactivity and smoking. ③
- Actively support mass media efforts to prevent tobacco use. ③

Implement policies and incentives to make healthy choices the easy choices

- Provide recognition awards to employers in your state that have implemented worksite health promotion programs. Elements of such programs include
 - Placing signs by elevators that encourage people to use the stairs. ③
 - Promoting healthy food options in cafeterias and vending machines. ②
 - Incorporating preventive services into health plans. ②
 - Providing services such as screening and treatment for high blood pressure, high cholesterol, smoking, and high blood glucose. ②
 - Establishing smoke-free work sites. ③
 - Ensuring coverage for prescription drugs used to prevent heart disease and stroke. ②
- Promote coordinated school health programs, which can prevent risk behaviors that contribute to heart disease and stroke by
 - Maintaining or adopting enhanced physical education classes. ③
 - Serving and promoting heart-healthy food in cafeterias and vending machines. ②
 - Implementing smoke-free schools and campuses. ③
 - Prohibiting withholding of recess as punishment. ①
- Recognize localities that update zoning codes to encourage high-density and mixed land use, thereby increasing opportunities for walking and biking. ②

- Create opportunities for physical activity, such as
 - Walking and biking trails coupled with education efforts. ③
 - Policies that encourage use of mass transit, walking, and biking. ②
 - Walk-to-school initiatives. ②
- Assess the value of increasing excise taxes on tobacco products in your state. ③
- Set an example by establishing a tobacco-free policy in public buildings, including schools and campuses. Support other tobacco-free policies such as prohibiting smoking in all enclosed workplaces, public places, government buildings, restaurants, bars, and gaming facilities. ③
- Designate use of Master Settlement Agreement funds or other dollars for comprehensive tobacco prevention programs. Target these programs to vulnerable populations. ①

Promote coverage for and use of preventive health services

- Work with insurers in your state to develop health benefits packages that include preventive services and incentives for preventing cardiovascular disease. ②
- Work with small businesses and insurers to develop policies that allow small business groups to buy into group health plans, as self-insured organizations do. ①
- Assess the status of or make changes to your Medicaid program to promote reimbursement for preventive services for cardiovascular disease that emphasize quality, cost-effective medical care. ②
- Work with your insurance commissioner or department to monitor health insurance benefits and ensure that they include services to prevent cardiovascular disease. ①
- Include heart disease and stroke as part of minority health initiatives and partner with safety-net providers (e.g., community health centers, migrant health clinics). ①

Implement life-saving improvements in health services and medical response

- Ensure that all communities in your state have access to 9-1-1. Establish wireless, enhanced 9-1-1 (WE9-1-1), which allows an emergency call center to capture the precise location of a caller. ②
- Ensure that your state health care system treats stroke as a true medical emergency and that everyone in your state has access to a coordinated system of stroke care. ②
- Encourage primary care settings to enhance patient care management for high blood pressure, cholesterol, and heart disease, using such approaches as the Chronic Care Model. ②

Use your authority to strengthen state efforts to address heart disease and stroke

- Support health impact studies and economic evaluations related to proposed legislation affecting issues such as land use and transportation. ①
- Support policies to make heart attacks and acute strokes reportable conditions so that the state health department can use these data to promote and evaluate improvements in emergency response and hospital care. ①
- Support efforts by your state health and education departments to address heart disease and stroke and their risk factors. ①
- Support data collection efforts and the sharing of data to document progress in preventing heart disease and stroke and their risk factors. Examples of data sources include the Youth Risk Behavior Surveillance System (YRBSS), the Behavioral Risk Factor Surveillance System (BRFSS), and the Health Plan Employer Data and Information Set (HEDIS). ①

What the Symbols Mean

The actions in this document are divided into three categories, which are indicated by the number following each action.

- ① Approaches that will bring visibility and support to the issues of heart disease and stroke.
- ② Interventions found by several studies or scientific reviews to support cardiovascular health.
- ③ Interventions recommended by CDC's Guide to Community Preventive Services or clinical guidelines.

References for level ② and level ③ actions are listed on the following page. References for level ② include pre/post, quasi-experimental, and experimental studies.

REFERENCES FOR GOVERNORS

- American Heart Association. Heart Disease and Stroke Statistics – 2005 Update. Dallas, TX: American Heart Association; 2005.
- Baker D, Asch S, Brown J, Dracup K, Chan KS, Keeler E. Improvements in communication, education, and self-management through implementation of the Chronic Care Model for patients with heart failure. Improving Chronic Illness Care Evaluation: A RAND Health Program. Available at http://www.rand.org/health/ICICE/heart_care.html. Accessed October 11, 2004.
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illnesses. *JAMA* 2002;288:1775-1779.
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illnesses: the Chronic Care Model, part 2. *JAMA* 2002;288(15):1909-1914.
- Brice JH, Griswell JK, Delbridge TR, Key CB. Stroke: from recognition by the public to management by emergency medical services. *Prehospital Emergency Care* 2002;6(1):99-106.
- Coffield AB, Maciosek MV, McGinnis JM, et al. Priorities among recommended clinical preventive services. *American Journal of Preventive Medicine* 2001;21(1):1-9.
- Cooper AR, Page AS, Foster LJ, Qahwaji D. Commuting to school: are children who walk more physically active? *American Journal of Preventive Medicine* 2003;25(4):273-276.
- Dale D, Corbin CB, Dale KS. Restricting opportunities to be active during school time: do children compensate by increasing physical activity levels after school? *Research Quarterly for Exercise and Sport* 2000;71(3):240-248.
- Erfurt JC, Foote A, Heirich MA. Worksite wellness programs: incremental comparison of screening and referral alone, health education, follow-up counseling, and plant organization. *American Journal of Health Promotion* 1991;5(6):438-448.
- Erfurt JC, Holtyn K. Health promotion in small business: what works and what doesn't work. *Journal of Occupational Medicine* 1991;33(1):66-73.
- French SA, Jeffery RW, Story M, et al. Pricing and promotion effects on low-fat vending snack purchases: the CHIPS study. *American Journal of Public Health* 2001;91(1):112-117.
- Glanz K, Sorensen G, Farmer A. The health impact of worksite nutrition and cholesterol intervention programs. *American Journal of Health Promotion* 1996;10(6):453-470.
- Greenlund KJ, Neff LJ, Zheng ZJ, et al. Low public recognition of major stroke symptoms. *American Journal of Preventive Medicine* 2003;25(4):315-319.
- Greenlund KJ, Keenan NL, Giles WH. Awareness of heart attack signs and symptoms. *American Heart Journal* 2004;147(6):1010-1016.
- Huskamp HA, Deverka PA, Epstein AM, et al. The effect of incentive-based formularies on prescription-drug utilization and spending. *New England Journal of Medicine* 2003;349(23):2224-2232.
- Labarthe DR. Epidemiology and Prevention of Cardiovascular Diseases: A Global Challenge. Gaithersburg, MD: Aspen Publishers, Inc.; 1998.
- Matson-Koffman DM, Brownstein JN, Neiner JA, Greaney ML. A site-specific literature review of policy and environmental interventions that promote physical activity and nutrition for cardiovascular health: what works? *American Journal of Health Promotion* 2005;19(3):167-193.
- Meyer J, Beimborn EA. Usage, impacts, and benefits of innovative transit pass program. In: *Transportation Research Record* 1618, Washington, DC: National Research Council; 1998:131-138.
- Moudon AV, Hess PM, Snyder MC, Stanilov K. Effects of site design on pedestrian travel in mixed-use, medium density environments. In: *Transportation Research Record* 1578. Washington, DC: National Research Council; 1997:48-55. WA-RD 432.1.
- National Heart Attack Alert Program Coordinating Committee 9-1-1: rapid identification and treatment of acute myocardial infarction. *American Journal of Emergency Medicine* 1995;13(2):188-195.
- Schwamm LH, Pancioli A, Acker JE, et al. Recommendations for the establishment of stroke systems of care. Recommendations from the American Stroke Association's Task Force on the Development of Stroke Systems. *Stroke* 2005;36:1-14.
- Sharma R, Liu H, Wang Y. Drug coverage, utilization, and spending by Medicare beneficiaries with heart disease. *Health Care Financing Review* 2003;24(3):139-156.
- Shriver K. Influence of environmental design on pedestrian travel behavior in four Austin neighborhoods. In: *Transportation Research Record* 1578. Washington, DC: National Research Council; 1997:64-75.
- Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. *American Journal of Preventive Medicine* 2002;22(4Suppl):67-72.
- Task Force on Community Preventive Services. Recommendations regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *American Journal of Preventive Medicine* 2001;20(2Suppl):10-15.
- Transportation Alternatives and the Surface Transportation Policy Project. The 2002 Summary of Safe Routes to School Programs in the United States. Available at www.transact.org. Accessed March 5, 2002.
- Tudor-Locke C, Ainsworth BE, Adair L, et al. Objective physical activity of Filipino youth stratified for commuting mode to school. *Medicine & Science in Sports and Exercise* 2003;35(3):465-471.
- U.S. Department of Health and Human Services. A Public Health Action Plan to Prevent Heart Disease and Stroke. Atlanta: Centers for Disease Control and Prevention; 2003.
- U.S. Preventive Services Task Force. Guide to Clinical Preventive Services. 2nd edition. Baltimore, MD: Williams & Williams; 1996.

Examples of Policies that Promote Heart-Healthy and Stroke-Free Communities

- Support coordinated school health programs designed to prevent risk behaviors that contribute to heart disease and stroke.



Michigan's Coordinated School Health Program, managed by the Michigan Departments of Education and Community Health, has been nationally recognized as a leader in promoting the health of young people through innovative curricula and strong state and local policies. Michigan has developed state-of-the-art, research-based curricula in health education and physical education as well as a sophisticated regional dissemination, training, and technical assistance system. This system has led to the widespread use of Michigan's health education and physical education curricula, not just across the state but nationwide as well.

For example, the health education curriculum is now used in 94% of Michigan's school districts and in school districts in 42 states. Moreover, coordinated school health programs in Michigan schools have resulted in many changes in physical activity and nutrition policies, including the establishment of daily salad bars, taste-testing to identify healthier choices that students will like, limitations on the days that fried potatoes are offered in school cafeterias, daily fitness activities in the classroom, and staff health promotion programs.

The Michigan Coordinated School Health Program has strong support from the state Board of Education, which in 2003 recommended that every Michigan school district adopt its own coordinated school health program with a school health council to guide it and school health teams in each school to carry out the program. The board also passed a policy recommending that physical education programs in every Michigan school offer at least 150 minutes per week of physical education for elementary school students and 225 minutes per week for middle and high school students.



- **Set an example by establishing a tobacco-free policy in public buildings, including schools and campuses.**



In 1988, California became the first state to launch a comprehensive tobacco control program. Over the past 17 years, the program has made significant progress toward a tobacco-free California through the efforts of local health departments, community-based organizations, a statewide media campaign, and other statewide support systems. Activities are diverse and include free telephone service to help smokers quit and a smoke-free workplace law. Because of this statewide law, virtually all of the state's indoor workplaces—including restaurants, bars, and gaming clubs—are now smoke free. In 1999, the state cigarette excise tax rose from 37 cents a pack to 87 cents a pack.

These efforts have made a difference in smoking rates among both adults and young people. In 2004, 14.7% of California adults smoked cigarettes down from 18.6% in 1996, according to the state's Behavioral Risk Factor Surveillance System. In addition, from 2000-2004, the percentage of high school students that used any tobacco product declined from 27.8% to 19.2%, and the percentage of high school students who smoked cigarettes declined from 21.6% to 13.2%. Between 1990 and 2000, per capita cigarette consumption declined by 51% and was the lowest of any state in 2000 and 2001. California's tobacco control program demonstrates how effective such a program can be when it is supported by adequate resources and sustained over time.



What the Science Tells Us

Blood Pressure

- Sixty-five million Americans have high blood pressure, and another 59 million are prehypertensive.¹
- A 12–13 point reduction in systolic blood pressure can reduce heart attacks by 21%, strokes by 37%, and all deaths from cardiovascular disease by 25%.² Nearly 70% of people with high blood pressure do not have it under control.³
- The Dietary Approaches to Stop Hypertension (DASH) study has shown that following a healthy eating plan can both reduce a person’s risk of developing high blood pressure and lower an already elevated blood pressure.⁴
- Medications can also help reduce high blood pressure.⁵

Cholesterol

- A 10% decrease in total blood cholesterol levels may reduce the incidence of coronary heart disease by as much as 30%.⁶ Only 18% of adults with high blood cholesterol have it under control.⁷
- Lowering saturated fat and increasing fiber in the diet, maintaining a healthy weight, and getting regular physical activity can reduce a person’s risk for cardiovascular disease by helping to lower LDL (bad) cholesterol and raise HDL (good) cholesterol.⁸
- A class of drugs called statins can reduce deaths from heart disease by reducing cholesterol levels.⁹

Emergency Response

- Forty-seven percent of heart attack deaths occur before an ambulance arrives and 48% of stroke deaths occur before hospitalization.^{10, 11}
- Only 3%–10% of eligible stroke victims get the emergency therapy (tPA) that can lead to recovery.¹²

Tobacco

- Cigarette smokers are 2–4 times more likely than nonsmokers to develop coronary heart disease.¹³
- Cigarette smoking approximately doubles a person’s risk for stroke.¹³

- People who quit smoking reduce their risk of death from cardiovascular disease by half within a few years.¹³
- Each year, secondhand smoke results in an estimated 35,000 deaths due to heart disease among nonsmokers.¹⁴

Nutrition¹⁵

- Fruits and vegetables are high in nutrients and fiber and relatively low in calories. A diet rich in fruits and vegetables can lower a person's risk of developing heart disease, stroke, and hypertension.
- Grain products provide complex carbohydrates, vitamins, minerals, and fiber. A diet high in grain products and fiber can help reduce a person's cholesterol level and risk of cardiovascular disease.
- Foods that are high in saturated fats (e.g., full-fat dairy products, fatty meats, tropical oils) raise cholesterol levels.
- People can lower their blood pressure by reducing the salt in their diets, losing weight, increasing physical activity, increasing potassium, and eating a diet rich in vegetables, fruit, and low-fat dairy products.

Physical Activity¹⁶

- Regular physical activity can decrease a person's risk of cardiovascular disease and prevent or delay the development of high blood pressure.
- People of all ages should get a minimum of 30 minutes of moderate-intensity physical activity (such as brisk walking) on most, if not all, days of the week.

Obesity^{15, 17}

- Because people who are overweight or obese have an increased risk for cardiovascular disease, diabetes, and hypertension, weight management can reduce a person's risk for these conditions.

Diabetes^{17, 18}

- Adults with diabetes have heart disease death rates about 2 to 4 times higher than adults without diabetes, and the risk for stroke is 2 to 4 times higher among people with diabetes. About 65% of deaths among people with diabetes are due to heart disease and stroke.

REFERENCES FOR “What the Science Tells Us”

1. American Heart Association. Heart Disease and Stroke Statistics – 2005 Update. Dallas, TX.: American Heart Association; 2005.
2. He J, Whelton PK. Elevated systolic blood pressure and risk of cardiovascular and renal diseases: overview of evidence from observational epidemiologic studies and randomized controlled trials. *American Heart Journal* 1999;138(3 Pt 2):211-219.
3. Chobanian AV, Bakris GL, Black HR, et al. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* 2003;42:1206-1252.
4. National Heart, Lung, and Blood Institute. Facts About the DASH Eating Plan. Bethesda, MD: National Institutes of Health; 2003. NIH Publication No. 04-4082. Available at: <http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/index.htm>. Accessed July 25, 2004.
5. National Heart, Lung, and Blood Institute. The Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Bethesda, MD: National Institute of Health; 2003. NIH Publication No. 03-5233. Available at: <http://www.nhlbi.nih.gov/guidelines/hypertension/express.pdf>. Accessed August 11, 2004.
6. Cohen JD. A population-based approach to cholesterol control. *American Journal of Preventive Medicine* 1997;102:23-25.
7. Ford ES, Mokdad AH, Giles WH, Mensah GA. Serum total cholesterol concentrations and awareness, treatment, and control of hypercholesterolemia among US adults. Findings from the National Health and Nutrition Examination Survey, 1999 to 2000. *Circulation* 2003;107(17):2185-2189.
8. National Heart, Lung, and Blood Institute. High Blood Cholesterol—What You Need to Know. Bethesda, MD: National Institutes of Health; 2001. NIH Publication No. 01-3290. Available at: http://www.nhlbi.nih.gov/health/public/heart/chol/hbc_what.htm. Accessed July 26, 2004.
9. Wilt TJ, Bloomfield HE, MacDonald R, et al. Effectiveness of statin therapy in adults with coronary heart disease. *Archives of Internal Medicine* 2004;164(13):1427-1436.
10. Ayala C, Croft JB, Keenan NL, et al. Increasing trends in pretransport stroke deaths—United States, 1990-1998. *Ethnicity and Disease* 2003;13(2 Suppl):S131-S137.
11. Centers for Disease Control and Prevention. State-specific mortality from sudden cardiac death: United States, 1999. *Morbidity and Mortality Weekly Report* 2002;51(6):123-126.
12. National Institute of Neurological Disorders and Stroke, rt-PA Stroke Study Group. Tissue plasminogen activator for acute ischemic stroke. *New England Journal of Medicine* 1995;333(24):1581-1587.
13. U.S. Department of Health and Human Services. Reducing the Health Consequences of Smoking — 25 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services; 1989. DHHS Pub. No. (CDC) 89-8411.
14. Centers for Disease Control and Prevention. Targeting Tobacco Use: The Nation’s Leading Cause of Death. At A Glance 2004. Atlanta: U.S. Department of Health and Human Services; 2004.
15. Krauss RM, Eckel RH, Howard B, et al. AHA Dietary Guidelines. Revision 2000: a statement for healthcare professionals from the Nutrition Committee of the American Heart Association. *Circulation* 2000;102(18):2284-2299.
16. U.S. Department of Health and Human Services. Physical Activity and Health. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services; 1996.
17. National Heart, Lung, and Blood Institute. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. Bethesda, MD: National Institutes of Health;1998. NIH Publication No. 98-4083. Available at: www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm. Accessed 1 Feb 2005.
18. Centers for Disease Control and Prevention. National Diabetes Fact Sheet. Atlanta: U.S. Department of Health and Human Services; 2003.



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The Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention (CDC) is one of the 13 major operating components of the Department of Health and Human Services (HHS), which is the principal agency in the United States government for protecting the health and safety of all Americans. Since it was founded in 1946 to help control malaria, CDC has remained at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats.

CDC's Heart Disease and Stroke Prevention Program is located in the National Center for Chronic Disease Prevention and Health Promotion, which is part of the Coordinating Center for Health Promotion. The central strategies of the program include a focus on high blood pressure and cholesterol control, increasing knowledge of signs and symptoms of heart attack and stroke, improving emergency response, improving quality of care, and eliminating health disparities between population groups. Heart disease and stroke outcomes are also related to healthy eating, physical activity, and tobacco use, as well as diabetes and obesity. CDC's Heart Disease and Stroke Prevention Program coordinates these activities to improve overall cardiovascular health in the United States.

For more information on heart disease and stroke prevention at CDC, please visit www.cdc.gov/cvh.

The American Heart Association/American Stroke Association

The American Heart Association is a national voluntary health agency whose mission is to reduce disability and death from heart disease and stroke. Together with the American Stroke Association, the volunteer-led affiliates and their divisions form a national network of local AHA organizations involved in providing research, education, and community programs to prevent heart disease and stroke. The network continues to gain strength as it expands at the grass-roots level in states and local communities.

For more information on the American Heart Association/American Stroke Association, please visit www.americanheart.org.

The Association of State and Territorial Health Officials

The Association of State and Territorial Health Officials (ASTHO) is the national nonprofit organization representing the state and territorial public health agencies of the United States, the U.S. Territories, and the District of Columbia. ASTHO's members, the chief health officials of these jurisdictions, are dedicated to formulating and influencing sound public health policy, and to assuring excellence in state-based public health practice.

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