

FACTS

An Ounce of Prevention...

The Value of Prevention for Cardiovascular Diseases

OVERVIEW

Cardiovascular diseases (CVD), including heart disease and stroke, are the leading cause of death and disability in the U.S.¹ Unfortunately, the disease process can start early in life and is influenced over time by lifestyle behaviors, the environments where people live, and modifiable risk factors, including smoking, overweight and obesity, physical inactivity, high blood pressure, elevated blood cholesterol, and Type 2 diabetes. In many instances, CVD can be prevented and CVD risks can be reduced if individuals modify their risk factors for the disease. Recent studies support the link between minimizing risk factors and reducing chronic disease. Policy makers ask however, if efforts aimed at prevention provide value, that is are such interventions worth what we pay for them? A recent paper by the American Heart Association² summarizes the cost-effectiveness and value of primary and primordial prevention and makes the important case for the valuable impact of policy and environment change and early clinical intervention on the public health, national security, and our nation's workforce productivity. The ultimate goal is to increase the number of years that people can enjoy a quality of life and compress the time that they experience disease and disability.

MAKING THE CASE

- Men and women who lower their risk factors may have 79-82% fewer heart attacks and strokes than those who do not reduce their risk factors.^{3,4}
- A recent review by USPSTF showed that counseling to improve diet or increase physical activity changed health behaviors and was associated with small improvements in weight, blood pressure, and cholesterol levels.⁵
- A recent study in Massachusetts showed that comprehensive coverage of tobacco cessation services in the Medicaid program led to reduced hospitalizations for heart attacks and a net savings of \$10.5 million or a \$3.07 return on investment for every dollar spent in the first two years.⁶
- Approximately 67% of the decline in U.S. age-adjusted coronary heart disease (CHD) death rates from 1980-2000 can be attributed to

improvements in risk factors including reductions in total blood cholesterol, systolic blood pressure, smoking prevalence, and physical inactivity. However, these reductions were partially offset by increases in obesity and diabetes prevalence.⁷

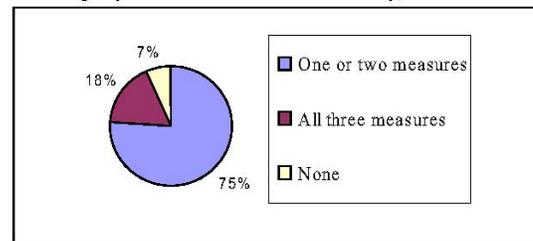
- Community-based programs to increase physical activity, improve nutrition and prevent smoking and other tobacco use can show a return on investment of \$5.60 for every dollar spent within 5 years.⁸
- Comprehensive worksite wellness programs can lower medical costs by approximately \$3.27 and absenteeism costs by about \$2.73 in the first 12 to 18 months for every dollar spent.⁹
- Robust school-based initiatives to promote healthy eating and physical activity have shown a cost effectiveness of \$900-\$4305 per quality-of-life-year saved.¹⁰

HOW ARE WE DOING?

We are placing a greater emphasis on prevention, however, we still have a long way to go to “walk the talk.” Only 18% of U.S. adults follow three important measures recommended by the American Heart Association for optimal health: not smoking, maintaining a healthy body weight, and exercising at moderate-vigorous intensity for at least 30 minutes,

Percentage of U.S. Population Practicing Heart Disease Prevention Measures*, 2004

Source: Agency for Healthcare Research and Quality, 2007



*Measures include not smoking, maintaining a normal body weight, and exercising moderately at least three times per week.

five days per week.¹¹

- In 2009, adult obesity rates rose in 28 states, and in more than two thirds of states, obesity rates exceed 25 percent of all adults.¹²
- The number of overweight pre-schoolers jumped 36% since 1999-2000.¹³ Nearly 1 of every 6 children and adolescents ages 2-19 are

considered obese.¹ Sadly, one study has shown that obese children's arteries resemble those of a middle-aged adult.¹⁴

- The percentage of high school students who smoke decreased over 34% from 1999 to 2009.¹ Still, over 3,800 children age <18 try a cigarette for the first time each day.¹ An estimated 6.4 million of them can be expected to die prematurely as a result.¹⁵
- One in three U.S. adults has high blood pressure, but 36% do not have it under control.¹
- A sedentary lifestyle contributes to CHD. However, moderate-intensity physical activity, such as brisk walking, is associated with a substantial reduction in chronic disease.¹⁶ It is estimated that \$5.6 billion in heart disease costs could be saved if 10% of Americans began a regular walking program.¹⁷ Still, 33% of U.S. adults report that they do not do any vigorous physical activity.¹
- At least 65% of people with Type 2 diabetes die from some form of heart disease or stroke.¹ Unfortunately, diabetes prevalence increased 90 percent from 1995-1997 to 2005-2007 in the 33 states that tracked data for both time periods.¹⁸
- About 25.4 million American adults have diagnosed or undiagnosed diabetes and the prevalence of pre-diabetes in the adult population is nearly 37%. Diabetes disproportionately affects Hispanics, blacks, Native Americans and Alaskan Natives.¹
- Approximately 44% of U.S. adults have unhealthy total cholesterol levels of 200 mg/dL or higher. A 10% decrease in total blood cholesterol levels population-wide may result in an estimated 30% reduction in the incidence of CHD. Unfortunately, fewer than half of the people who qualify for cholesterol lowering treatment are receiving it.¹

AHA ACTION PLAN

The AHA has a goal of improving the cardiovascular health of the U.S. population by 20% by the year 2020. Accordingly, the AHA advocates for:

- Preserving the Prevention and Public Health Fund in the Patient Protection and Affordable Care Act.
- Comprehensive clean indoor air laws
- Excise taxes on tobacco products
- Increased/sustained funding for state smoking cessation/prevention programs
- Comprehensive implementation of FDA regulation of tobacco
- Increased funding for programs that eliminate health disparities.
- Comprehensive smoking cessation benefits in Medicaid, Medicare and other health plans.
- Eliminating tobacco sales in pharmacies and other health-related institutions.
- Addressing the built environment and supporting efforts to design workplaces, communities, and schools around active living; integrating physical activity opportunities throughout the day.
- Funding and developing walking/biking trails that connect key aspects of the community, increase Safe Routes to School, and Complete Streets to promote walking and biking. Support the construction of school fitness facilities.

- Increase sports, community recreational opportunities, parks, and green spaces.
- The FIT Kids Act
- Increasing the quantity and improve the quality of physical education in schools. Support 60 minutes per day of supervised, moderate-vigorous physical activity integrated throughout the school day.
- Adequate prevention, diagnosis, treatment of overweight and obesity in the healthcare environment.
- Comprehensive worksite wellness programs
- Implementing and monitoring strong local wellness policies in all schools.
- Adequate funding and implementation of coordinated school health programs
- Comprehensive obesity prevention strategies in early childhood and day care programs
- Improving access and affordability of healthy foods
- Strengthening nutrition standards in schools for meals and competitive foods and in all government nutrition assistance or feeding programs
- Improving food labeling and menu labeling in restaurants
- Continuing to monitor the removal of industrially-produced *trans* fats from the food supply and assure the use of healthy replacement oils.
- Addressing food marketing and advertising to children
- Limiting added sugar and sodium in the food supply.
- Increased funding for state heart disease and stroke prevention programs
- Ensuring the availability of essential cardiovascular disease preventive benefits in private insurance and public health programs

References:

- ¹ Roger, V. et al., Heart disease and stroke statistics--2011 update: A report from the American Heart Association. *Circulation*. December 15, 2010.
- ² Weintraub, W., et al., The value of primordial and primary prevention for cardiovascular disease. *Circulation*. July 25, 2011.
- ³ Stampfer M, Hu FB, et al., Primary prevention of coronary heart disease in women through diet and lifestyle. *N Engl J Med*. 2000; 343: 16-22.
- ⁴ Gorelick PB. Primary prevention of stroke: Impact of healthy lifestyle. *Circulation*. 2008; 118:904-906.
- ⁵ Linn JS. et al., Behavioral Counseling to Promote Physical Activity and a Healthful Diet to Prevent Cardiovascular Disease in Adults. *Annals of Internal Medicine* 2010;153(11):736-750.
- ⁶ Land T, Rigotti NA, Levy DE, Paskowsky M, Warner D, et al. (2010) A Longitudinal Study of Medicaid Coverage for Tobacco Dependence Treatments in Massachusetts and Associated Decreases in Hospitalizations for Cardiovascular Disease. *PLoS Med* 7(12): e1000375. doi:10.1371/journal.pmed.1000375.
- ⁷ Ford E, Ajani U, Croft , et al., Explaining the decrease in U.S. deaths from coronary heart disease, 1980-2000. *New Engl J Med*. 2007; 356: 2388-2398.
- ⁸ *Prevention for a healthier America: investments in disease prevention yield significant savings, stronger communities*. Washington, DC: Trust for America's Health; 2008.
- ⁹ Baicker K, Cutler D, Song Z. Workplace wellness programs can generate savings. *Health Aff (Millwood)*. Feb;29(2):304-311.
- ¹⁰ Wang LY, Yang Q, Lowry R, et al. Economic analysis of a school-based obesity prevention program. *Obes Res*. Nov 2003;11(11):1313-1324.
- ¹¹ Soni A. Personal health behaviors for heart disease prevention among the U.S. adult civilian noninstitutionalized population. 2004. Statistical Brief #165, March 2007. Agency for Healthcare Research and Quality.
- ¹² Trust for America's Health/Robert Wood Johnson Foundation. *F as in Fat: How Obesity Threatens America's Future*. 2010.
- ¹³ Robert Wood Johnson Foundation/American Heart Association. *A Nation at risk: obesity in the United States. A statistical sourcebook*. 2005.
- ¹⁴ Raghuvver G. et al., Obese kids' artery plaque similar to middle-aged adults. AHA Scientific Sessions 2008. Abstract 6077.
- ¹⁵ Healthy Youth! Health Topics: Tobacco Use. Available at www.cdc.gov/HealthyYouth/tobacco/. Last reviewed November 7, 2007.
- ¹⁶ Hu FB. Et al., Physical activity and risk of stroke in women. *JAMA*. 2000; 283(22):2961-7.
- ¹⁷ U.S. Department of Health and Human Services. *Preventing Chronic Diseases: Investing Wisely in Health: Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity*. National Center for Chronic Disease Prevention and Health Promotion, 2005.
- ¹⁸ CDC. State-specific incidence of diabetes among adults – participating states. 1995-1997 and 2005-2007. *MMWR*. October 31, 2008; 57(43).